

## ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a wastewater treatment plant (WWTP) with a design capacity of 0.0366 million gallons per day (MGD) and is considered to be a minor facility under the AZPDES program. The effluent 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.

I. PERMITTEE INFORMATION	
Permittee's Name:	Virgin River Domestic Wastewater Improvement District (DWID)
Permittee's Mailing Address:	P.O. Box 725 Beaver Dam, Arizona 86432
Facility Name:	Virgin River DWID Wastewater Treatment Plant (WWTP)
Facility Address or Location:	3465 East Beaver Dam Drive Beaver Dam, Arizona 86432
County:	Mohave
Contact Person(s): Phone/e-mail address	Tammy Giebink (702) 205-8255 / <a href="mailto:tammygiebink@gmail.com">tammygiebink@gmail.com</a>
AZPDES Permit Number:	AZ0023655
Inventory Number:	102428
LTF Number:	114398

II. STATUS OF PERMIT(S)	
AZPDES permit applied for:	Renewal
Date application received:	1/23/2026
Date application was determined administratively complete:	2/27/2026
Previous permit number (if different):	N/A
Previous permit expiration date:	8/25/2026
<b>208 Consistency:</b>	
In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for any discharge inconsistent with a plan or plan amendment approved under section 208(b) of the Clean Water Act.	

Based on review of the application, there are no changes to the facility that require a new determination of consistency with the Regional Water Quality Management Plan.		
Virgin River DWID has the following permits issued by ADEQ applicable to the Virgin River DWID WWTP:		
<b>Type of Permit</b>		
Aquifer Protection Permit (APP)	P102428	Regulates discharges to the local aquifer

<b>III. GENERAL FACILITY INFORMATION</b>	
Type of Facility:	Publicly owned treatment works (POTW)
Facility Location Description:	The Virgin River DWID WWTP is approximately 0.8 miles southeast of downtown Beaver Dam, Arizona, and approximately 0.2 miles east of Beaver Dam Wash.
Permitted Design Flow:	0.0366 MGD
Treatment Level (WWTP):	Secondary
Treatment Processes:	Treatment at the Virgin River DWID WWTP consists of bar screening, a primary separation tank, an anoxic tank, five aeration tanks, a setting tank, an aerobic sludge digester, filtration, and UV disinfection.
Sludge Handling and Disposal:	Sludge is hauled via tank truck to the Mesquite WWTP for additional processing and final disposal. Sludge hauling takes place two to three times per year.
Nature of Facility Discharge:	Domestic wastewater from residential and commercial sources.
Total Number of Significant Industrial Users (SIUs):	None
Average Flow Per Discharge:	0.022 to 0.034 MGD
Service Area:	Beaver Dam, Arizona
Service Population:	Homes in the Virgin River DWID service area are primarily secondary homes used during the winter months. The populations served during winter and summer seasons are as follows: <ul style="list-style-type: none"> <li>• Winter: 375 equivalent residential units (ERUs)</li> <li>• Summer: 125 ERUs</li> </ul>
Reuse / Irrigation or other disposal method(s):	N/A
Continuous or Intermittent Discharge:	Continuous

<b>IV. RECEIVING WATER</b>	
<p>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.</p>	
Receiving Water (Federal):	The Water of the U.S. Protected Surface Water (WOTUS PSW) for the Virgin River DWID WWTP Outfall 001 is Beaver Dam Wash. This is a surface water listed in A.A.C. R18-11 Appendix B.
River Basin:	Colorado – Grand Canyon
Outfall Location:	Outfall 001: Township 40N, Range 15W, Section 05 Latitude 36° 54' 02" N, Longitude 113° 55' 51" W Coordinates in Decimal Degrees: [36.9005, -113.9308]
Designated uses for the receiving water listed above:	Aquatic and Wildlife warm water (A&Ww) Full Body Contact (FBC) Fish Consumption (FC) Agricultural Livestock watering (Agl)
Designated uses for downstream receiving water:	Outfall 001 discharges approximately 0.7 miles upstream of the confluence of Beaver Dam Wash with the Virgin River. Therefore, this permit is written to protect the designated uses of the Virgin River:  Aquatic and Wildlife warm water (A&Ww) Full Body Contact (FBC) Fish Consumption (FC) Agricultural Irrigation (Agl) Agricultural Livestock watering (Agl)
Is the receiving water on the 303(d) list?	<p>The receiving water, Beaver Dam Wash, is not on the 303(d) list, and there are no total maximum daily load (TMDL) issues associated.</p> <p>Two segments of the downstream receiving water, the Virgin River, are on the 303(d) list. The segment of the Virgin River from Sullivan’s Canyon to Beaver Dam Wash is impaired for selenium. The segment of the Virgin River from Beaver Dam Wash to Sand Hollow Wash is impaired for selenium and suspended sediment concentration.</p> <p>The Nevada Division of Environmental Protection (NDEP) implemented a TMDL for total boron in the lower Virgin River, extending from the Arizona-Nevada state line to Lake Mead. The TMDL was approved by the U.S. EPA on January 14, 2003. The TMDL concluded that the majority of the boron load originated in the states of Arizona and Utah, and that observed concentrations were dependent on streamflow, with higher flows leading to lower concentrations. The TMDL estimated the load allocation to be 0.5 tons per day of total boron at Littlefield, Arizona, based on an average daily streamflow of 245 cubic feet per second (cfs) for the years 1930-1998. Virgin River DWID WWTP is presumed to be a de minimus source of boron at the Arizona-Nevada state line. Effluent characterization monitoring for boron is included in the permit.</p>

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. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.

In addition to the above, the Colorado River has a salinity standard. A.A.C. R18-11-110 incorporates by reference the plan of implementation contained in the “2014 Review, Water Quality Standards for Salinity, Colorado River System,” approved October 2014. The plan of implementation is a basin-wide approach to salinity control developed by the Colorado River Basin Salinity Control Forum. Dischargers to the Colorado River and its tributaries upstream of the Imperial Dam must meet the plan of implementation requirements.

**V. DESCRIPTION OF DISCHARGE**

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

Parameters	Units	Maximum Daily Discharge Concentration
Biochemical Oxygen Demand (BOD)	mg/L	37
Total Suspended Solids (TSS)	mg/L	16
Total Kjeldahl Nitrogen (TKN)	mg/L	16
<i>E. coli</i>	cfu/100 mL	102.2
Facility Design Removal Rates:		BOD 85 % TSS 85 % N N/A

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

Date of Most Recent Inspection:	08/17/2021; no potential violations were noted as a result of this inspection.
Discharge Monitoring Reports (DMR) Reviewed:	09/2021 through 12/2025
Lab Reports Reviewed:	10/2021 through 10/2025
Notice(s) of Violation (NOV) Issued:	None
NOVs Closed:	N/A
Formal Enforcement Action(s):	None

**VII. PROPOSED PERMIT CHANGES**

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

Parameter	Existing Permit	Proposed Permit	Reason for Change
Noncompliance Reporting Hotline	(602) 771-2330	Noncompliance resulting in imminent threat to human health or the environment must be reported to (602) 771-2330, while all other noncompliance must be reported to (602) 771-1440.	Routing emergency calls to the emergency hotline, but all other calls to a non-emergency number.
Reporting Location for Effluent Characterization Monitoring	Submit results through DMRs	Report results on the EC Monitoring Data Sheet Excel form provided by ADEQ and submit annually to <a href="mailto:azpdes_data@azdeq.gov">azpdes_data@azdeq.gov</a> by January 28 <sup>th</sup> following each annual reporting period. See Part I.D.2 and Part II.B.3 of permit.  Laboratory reports for EC monitoring shall be submitted through myDEQ with the last DMR of the calendar year. See Part II.B.3.b. of the permit.	ADEQ is implementing this new procedure to facilitate data analysis by ADEQ and reporting by permittees. Outcomes include expedited data processing and improved data quality review, per ADEQ Surface Water Protection Quality Assurance Program Plan (2022).
Sufficiently Sensitive Test Methods and Limit of Quantitation (LOQ) Reporting Requirements	Limited explanation of analytical requirements for LOQ.	Analytical test sensitivity requirements are specified in the footnotes of Part I Tables 1-4 of the permit and associated definitions in Appendix A. Part B. The requirement to use sufficiently sensitive test methods is specified in Part II.A.5.	The Limit of Quantitation (LOQ) must be low enough to allow comparison of the results to the applicable water quality standards (WQS) to be protective of the receiving water designated uses. New language clarifies the requirement that parameters must be analyzed using sufficiently sensitive test methods in accordance with 40 CFR 136.1(c).

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Use of Metal Translators to Calculate Total Recoverable Permit Limits from Dissolved Criteria (Applicable to Cadmium, Chromium VI, Copper, Lead, Mercury, Nickel, Silver, and Zinc).	No metal translators were used. Assumed the ratio of dissolved to total recoverable is 1 to 1 for all metals with water quality criteria expressed as dissolved.	WQBELs and ALs were converted from dissolved to total recoverable using the process from the EPA's <i>The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit from A Dissolved Criterion</i> .	New procedure for ADEQ to incorporate default metal translators when calculating total recoverable WQBELs and ALs from dissolved criteria.
Reporting Location for Annual Biosolids/Sewage Sludge Report	Electronic copy submitted to biosolids@azdeq.gov and myDEQ.	Annual reports submitted to EPA's Central Data Exchange using the NPDES Electronic Reporting Tool (NeT – Biosolids) by February 19 of each year.	ADEQ has updated the annual reporting method for consistency with 40 CFR 403 and the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule.
Whole Effluent Toxicity Data Evaluation and Reporting	Calculation of the no observed effect concentration (NOEC) and the 25% inhibition effect concentration (IC25). Report results on the DMR as Pass (0)/Fail (1) for acute tests and 100/NOEC result in toxicity units (TUC) for chronic tests. An exceedance was any one test result greater than 1.6 TUC or any calculated monthly median value greater than 1.0 TUC or a Fail.	Pass and Fail results are declared by comparing percent effect (PE) to the regulatory management decision (RMD) threshold established for the test.  For acute tests, report results as Pass (0)/Fail (1) on the DMR.  For chronic tests, report Pass (0)/Fail (1) and report the PE on the DMR.	The permit requirements are established in accordance with the Test for Significant Toxicity (TST) statistical approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA-833-R-10-003, 2010) and National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document (EPA-833-R-10-004, 2010). This change is intended to decrease the occurrence of false positive and false negative results.
WET tests with a result of Fail	WET lab reports and any required additional attachments shall be submitted to ADEQ using the myDEQ electronic portal by the 28th day of the month following the end of the WET monitoring period, or upon request.	Certified laboratory reports with a Fail test result for either an Action Level or Limit shall be emailed to AZPDES@azdeq.gov within five days of receipt.	The updated submittal method of a WET test Failure ensures prompt initiation of the required accelerated monitoring.

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TRE Work Plan	TRE plan developed following detection of effluent toxicity	TRE Work Plan submitted to AZPDES@azdeq.gov within 90 days of permit effective date. This is required for all permittees regardless of whether effluent toxicity has been detected or not. Use the template supplied by ADEQ (See Part IV of the permit)	Preparation of a Toxicity Reduction Evaluation (TRE) Work Plan allows a timely response when the TRE requirements are triggered. A TRE Work Plan ensures that the permittee understands the expectations prior to detection of toxicity and can respond in a timely manner to protect A&W designated uses.
Suspended Sediment Concentration (SSC)	Monitoring not required.	Monitoring required for the effluent and the receiving water, downstream of the discharge.	ADEQ is requiring monitoring of the effluent and downstream receiving water to assess compliance with the numeric standard listed in R18-11-109(D).
Temperature	Monitoring required for the effluent or receiving water.	Monitoring required for the effluent. Monitoring required for the receiving water, both upstream and downstream of the discharge.	ADEQ is requiring monitoring of the effluent, the upstream receiving water upstream and downstream receiving water to assess compliance with the numeric standard listed in R18-11-109(C).
Narrative Surface Water Quality Standards	Narrative surface water quality standards applicable to the receiving water listed in Part I.E of the permit.	Other limitations for the effluent listed in Part I.E of the permit to ensure the discharge is protective of the narrative surface water quality standards of the receiving water.	ADEQ is clarifying all narrative permit requirements are applicable to the discharge rather than the “end result” in the receiving water in accordance with <i>City &amp; County of San Francisco v. EPA</i> .
Total Chromium, Chromium VI, and Silver	Limited	Effluent characterization monitoring See Table 4.b of the permit	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.
Hydrogen Sulfide and Sulfides	Assessment level	Effluent characterization monitoring See Table 4.b of the permit	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.
Bis (2-Ethylhexyl) Phthalate	Assessment level	Limited See Table 1 of the permit	Data submitted indicated reasonable potential (RP) for an exceedance of a standard.

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Chronic Toxicity <i>Ceriodaphnia dubia</i>	Action level	Limited  See Tables 1 and 3 of the permit	Data submitted indicated reasonable potential (RP) for an exceedance of a standard.
Antimony	Effluent characterization monitoring	Limited  See Table 1 of the permit	Data submitted indicated reasonable potential (RP) for an exceedance of a standard.
Total Dissolved Solids (TDS)	Effluent characterization monitoring	Limited  See Table 1 of the permit	Limit required based on re-evaluation of the “2014 Review, Water Quality Standards for Salinity, Colorado River System” developed by the Colorado River Basin Salinity Control Forum.
Ammonia Impact Ratio (AIR) and Total Suspended Solids (TSS)	Limited with no effluent characterization monitoring requirement	Limited with effluent characterization monitoring required  See Table 4.a of the permit	ADEQ requires effluent characterization monitoring for general chemistry and microbiology parameters. This change ensures that the VRDWID WWTP monitors for AIR and TSS regardless of whether discharge occurs.
Hardness Assessment Level	Monitoring required for the receiving water only	Monitoring required for the receiving water or effluent  See Table 2 of the permit	ADEQ requires monitoring the receiving water or effluent for point-source discharges to perennial or intermittent waters. If no receiving water is present at the time of hardness sampling, the permittee shall test the effluent for hardness. The previous permit was inconsistent with this guideline.
Total Dissolved Solids (TDS)	Monitoring Frequency: Annually in 2022, 2023, and 2024  Effluent Sample Type: 8-hr. Composite	Monitoring Frequency: Quarterly  Effluent Sample Type: Discrete  See Table 1 of the permit	Sample Type and Monitoring Frequency required based on reevaluation of the “2014 Review, Water Quality Standards for Salinity, Colorado River System” developed by the Colorado River Basin Salinity Control Forum.

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Parameter	Existing Permit	Proposed Permit	Reason for Change
Boron	Monitoring not required	Effluent characterization monitoring  See Table 4.b of the permit	ADEQ requires minor facilities to monitor for boron if the AgI designated use applies. This new requirement ensures that monitoring requirements are protective of the numeric criteria for the applicable designated uses of the receiving water.
WET Monitoring Frequency	1x/fourth year of permit term during winter months	1x/year in years 2027, 2028, 2029, 2030 of permit term  See Tables 3 and 4.b of the permit	A minimum of four results for each WET test type are required to determine RP using the TST approach.
Receiving Water pH Limits Monitoring Frequency	1x/Month	1x/Week  See Table 1 of the permit	Monitoring frequency is based on tiers established for design flow to obtain sufficient data to protect surface water quality and set monitoring requirements consistently among permitted discharges. For this facility, monitoring frequency is based on the design flow tiers established for 0.0366 MGD.
Nitrate/Nitrite, Total Kjeldahl Nitrogen (TKN), Oil and Grease, and Phosphorus Effluent Characterization Monitoring Frequency	1x/Year	1x/Quarter  See Table 4.a of the permit	Monitoring frequency is based on tiers established for design flow to obtain sufficient data to protect surface water quality and set monitoring requirements consistently among permitted discharges. For this facility, monitoring frequency is based on the design flow tiers established for 0.0366 MGD.

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 effluent 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.

Limits for the following parameters have been removed from the permit because evaluation of current data allows the conclusion that no reasonable potential (RP) for an exceedance of a standard exists:

- Total Chromium
- Chromium VI
- Silver

This is considered allowable backsliding under 303(d)(4). The effluent limitations in the current permit for these three parameters were based on state standards, the respective receiving waters are in attainment for these parameters, and the revisions are consistent with antidegradation requirements. See Section XII for information regarding antidegradation requirements.

Limits are retained in the 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.

Limits for the following parameter are less stringent due to a change in the WQS in 2025: *E. coli*

**VIII. DETERMINATION OF EFFLUENT LIMITATIONS, OTHER LIMITATIONS, and ASSESSMENT LEVELS**

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

**Technology-Based Limitations:**

As outlined in 40 CFR Part 133:

The regulations found at 40 CFR §133 require that POTWs achieve specified treatment standards for BOD, TSS, and pH based on the type of treatment technology available. Therefore, technology-based effluent limitations (TBELs) have been established in the permit for these parameters. Additionally, oil & grease will be monitored with a TBEL based on best professional judgment (BPJ). The average monthly limit of 10 mg/L and daily maximum of 15 mg/L are commonly accepted values that can be achieved by properly operated and maintained WWTPs. This level is also considered protective of the narrative standard at A.A.C. R18-11-108(B).

**Water Quality-Based Effluent Limitations:**

Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), discharge limits must be included in the permit for parameters with “reasonable potential” (RP), that is, those known to be or expected to be present in the effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. Numeric water quality standards are outlined in A.A.C. R18-11-109 and Appendix A. RP refers to an analysis, based on the statistical calculations using the data submitted or consideration of other factors, to determine whether the discharge may exceed the Water Quality Standards. The procedures used to determine RP are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001). In most cases, the highest reported value for a parameter is multiplied by a factor (determined from the variability of the data and number of samples) to determine a “highest estimated value.” This value is then compared to the lowest applicable Water Quality Standard for the receiving water. If the value is greater than the standard, RP exists and a water quality-based effluent limitation (WQBEL) is required in the permit for that parameter. RP may also be determined from BPJ based on knowledge of the treatment facilities and other factors. The basis for the RP determination for each parameter with a WQBEL is shown in the table below.

Ammonia water quality criteria vary based on the upstream receiving water pH and temperature at the time of effluent sampling. As a result, no single ammonia concentration can be included as a permit limit. To overcome this, an Ammonia Impact Ratio (AIR) of 1 for the monthly average and a value of 2 for the maximum daily limits has been established as the permit limits for ammonia. The AIR is calculated by dividing the ammonia concentration in the effluent by the applicable ammonia standard based on the upstream receiving 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.

It is assumed that RP exists for exceedance of water quality criteria for the pollutants *E. coli* and, if chlorine or bromine is used in the treatment process, total residual chlorine (TRC). These parameters have been shown through extensive monitoring of WWTPs to fluctuate greatly and thus are not conducive to exclusion from limitation due to a lack of RP. Therefore, the permit contains WQBELs for *E. coli* and TRC.

The proposed permit limits were established using a methodology developed by EPA. Long Term Averages (LTA) were calculated for each designated use and the lowest LTA was used to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology is described in Chapter 5 of the TSD, and considers water quality criteria, effluent variability, and the number of observations taken to determine compliance with prescribed limits. Limits based on A&W criteria were developed using the “two-value steady state wasteload allocation” described on page 99 of the TSD. When the limit is based on human health criteria, the monthly average was set at the level of the applicable standard and a daily maximum limit was determined as specified in Sections 5.4.4 and 5.5.3 of the TSD.

**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 permit should future monitoring data indicate water quality standards are being exceeded.

The requirement to monitor for these parameters is included in the permit according to A.A.C. R18-11-104(C) and Appendix A. ALs listed for each parameter were calculated in the same manner that a limit would have been calculated (see Water Quality-Based Effluent Limitations above).

The following trace substances were not included as limits or assessment levels in the permit due to a lack of RP based on best professional judgment (BPJ): barium, nitrates, nitrites, and manganese. The numeric standards for these pollutants are well above what would be expected from a WWTP discharge.

**Hardness**

The permittee is required to sample hardness as CaCO<sub>3</sub> at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 280 mg/L (the average hardness of the receiving stream as supplied in the application) was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, chromium III, copper, lead, nickel, silver and zinc).

**Whole Effluent Toxicity (WET)**

WET testing is required in the permit (Parts I.C and IV) to evaluate the discharge according to the narrative toxic standard in A.A.C. R18-11-108(A)(5), as well as whether the discharge has RP for WET per 40 CFR 122.44(d)(iv).

WET testing for chronic toxicity shall be conducted using the following three surrogate species:

- *Ceriodaphnia dubia* (water flea) – for evaluating toxicity to invertebrates
- *Pimephales promelas* (fathead minnow) – for evaluating toxicity to vertebrates
- *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum* or *Raphidocelis subcapitata*) (a green alga) – for evaluating toxicity to plant life

ADEQ requires the permittee to analyze WET test data using the Test of Significant Toxicity (TST) statistical approach. This statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010; TST Implementation Document) and *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-004, 2010; TST Technical Document). This statistical approach supports important choices made within a toxicity laboratory which favor quality data and ADEQ’s intended levels for statistical power when true toxicity is statistically determined to be unacceptably high or acceptably low. For both acute and chronic WET test methods, the low-risk Regulatory Management Decision (RMD) threshold is set at a 10 percent mean effect at the Instream-Waste Concentration (IWC). For mean effect levels greater than 10 percent but less than the unacceptable toxicity RMD threshold (20 percent for acute and 25 percent for chronic WET tests), the TST approach will declare the IWC non-toxic depending on within-test variability.

The TST maintains ADEQ’s desired low false positive rate for WET methods—the probability of declaring toxicity when true toxicity is acceptably low  $\leq 5\%$ —when quality toxicity laboratories conduct toxicity tests (EPA 833-R-10-004, 2010).

ADEQ analyzed the available data and determined that the discharge does not have reasonable potential (RP) for unacceptable levels of toxicity to *Pimephales promelas* and *Pseudokirchneriella subcapitata* but does have RP for unacceptable levels of toxicity to *Ceriodaphnia dubia*. This is because no toxicity test result for *Pimephales promelas* or *Pseudokirchneriella subcapitata* is Fail (1) (see Table 1 of this fact sheet and section 1.4 and Appendix E in EPA’s TST Technical Document). However, at least one toxicity test result for *Ceriodaphnia dubia* is Fail (1) or at least one associated PE value is  $\geq 10$  indicating unacceptable toxicity is present in the effluent. Therefore, a WQBEL is set for WET monitoring and reporting for *Ceriodaphnia dubia* (see Part I.C of the permit). ADEQ has retained the requirement to monitor and report toxicity with action levels, so that effluent toxicity can be assessed in relation to CWA requirements for the permitted discharge (see Part I.C of permit).

Any failed test during a monitoring period where discharge occurred will trigger follow-up testing to determine if effluent toxicity is persistent. If toxicity above a limit or action level is found in a follow-up test, the permittee will be required to conduct a Toxicity Reduction Evaluation (TRE) based on a TRE Work Plan submitted within 90 days of the permit effective date and possibly a Toxicity Identification Evaluation (TIE) to identify the source of toxicity and decrease toxicity. The conditions described in this paragraph are required to identify and rectify sources of toxicity in discharges [A.A.C. R18-11-108(A)(5)]. A reopener clause is included in accordance with 40 CFR Parts 122 and 124 and AAC R18-9-B906.

The permit requires 8-hour composite samples be collected for WET testing. An 8-hour composite sample type was chosen over the suggested 24-hour composite for WET testing in order to have consistency with the type of sample required for other parameters requiring monitoring in this permit. WET sampling must coincide with testing for all the parameters in Parts I.A and B of the permit when testing of those parameters is required to aid in determining the cause of toxicity if it is detected. Additional procedural requirements for the WET test are included in the permit.

The required WET monitoring frequency for this facility is consistent with the WET testing frequency required for facilities with a similar design flow. The permit requires WET test results to be reported on discharge monitoring reports (DMRs). WET laboratory reports for all WET tests performed must be attached to the corresponding DMR.

When a WET limit is exceeded and the facility discharged during the monitoring period when the limit exceedance occurred, the result is subject to the Twenty-four Hour Reporting of Noncompliance requirements, per Part II.C. All action level and limit exceedance results and lab reports shall be emailed to [AZPDES@azdeq.gov](mailto:AZPDES@azdeq.gov) within five days.

**Effluent Characterization (EC)**

In addition to monitoring for parameters assigned either a limit or an AL, sampling is required to assess the presence of pollutants in the discharge at certain minimum frequencies for additional suites of parameters, whether the facility is discharging or not. This monitoring is specified in Tables 4.a. through 4.c., *Effluent Characterization Testing*, as follows:

- Table 4.a.—General Chemistry and Microbiology: ammonia, BOD-5, *E. coli*, total residual chlorine (TRC), dissolved oxygen, total Kjeldahl nitrogen (TKN), nitrate/nitrite, oil and grease, pH, phosphorus, temperature, total dissolved solids (TDS), and total suspended solids (TSS)
- Table 4.b.—Selected Metals, Hardness, Cyanide, and WET
- Table 4.c.—Selected Base-Neutral Compounds

NOTE: Some parameters listed in Tables 4.a. and 4.b. are also listed in Tables 1 or 2. In this case, the data from monitoring under Tables 1 or 2 may be used to satisfy the requirements of Tables 4.a. or 4.b., provided the specified sample types are the same. In the event the facility does not discharge to a Protected Surface Water during the life of the permit, EC monitoring of representative samples of the effluent is still required.

The purpose of EC monitoring is to characterize the effluent and determine if the parameters of concern are present in the discharge and at what levels. This monitoring will be used to assess RP per 40 CFR 122.44(d)(1)(iii). EC monitoring is required in accordance with 40 CFR 122.43(a), 40 CFR 122.44(i), and 40 CFR 122.48(b) as well as A.R.S. §49-203(A)(7). If pollutants are noted at levels of concern during the permit term, this permit may also be reopened to add related limits or conditions.

**Permit Limitations and Monitoring Requirements**

Table 1 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*.

**Table 1. Permit limitations and monitoring requirements.**

Parameter	No. of Samples	Maximum Reported Concentration (1)	RP Multiplier (2)	Critical Concentration (Calculated)	Most Stringent Criterion	Most Stringent Criterion Basis (3)	Does Reasonable Potential Exist?	Proposed Monitoring Requirement/Rationale (4)
Flow	---	---		---	---		---	Discharge flow is to be monitored on a continual basis using a flow meter.
Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)	BOD: 52 TSS: 52	BOD: 37 mg/L TSS: 16 mg/L	N/A	N/A	30 mg/L 30-day average 45 mg/L 7-day average	Technology-based limits 40 CFR 133.102	TBELs for BOD and TSS are always applicable to WWTPs.	Monitoring for influent and effluent BOD and TSS to be conducted using composite samples of the influent and the effluent. The sample type required was chosen to be representative of the discharge. The requirement to monitor influent BOD and suspended solids is included to assess compliance with the 85% removal requirement in this permit. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity, if toxicity is detected.
Chlorine, Total Residual (TRC)	0	No Data	N/A	N/A	5 µg/L	A&Wedw chronic	RP always expected when chlorine or bromine is used for disinfection.	TRC is to be monitored as a discrete sample and a WQBEL remains in the permit. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine. At least one sample per month must coincide with WET testing to aid in the determination of the cause of toxicity, if toxicity is detected.
Dissolved Oxygen	4	6.2 mg/L	N/A	N/A	The percent saturation of dissolved oxygen is equal to or greater than 90 percent, or single sample <b>minimum</b> concentration of 6 mg/L	A&Ww	No RP	Monitoring is required for the effluent and the downstream receiving water with discrete samples for effluent characterization.
<i>E. coli</i>	69	102.2 cfu/100 mL	N/A	N/A	30-day geometric mean: 126 cfu/100 mL (4 sample minimum) Single sample maximum: 235 cfu/100 mL	FBC	RP always expected for WWTPs. See explanation above.	<i>E. coli</i> is to be monitored as a discrete sample and a WQBEL remains in the permit.

**Table 1. Permit limitations and monitoring requirements.**

Parameter	No. of Samples	Maximum Reported Concentration (1)	RP Multiplier (2)	Critical Concentration (Calculated)	Most Stringent Criterion	Most Stringent Criterion Basis (3)	Does Reasonable Potential Exist?	Proposed Monitoring Requirement/Rationale (4)
pH	276	Minimum: 6.1 Maximum: 9	N/A	N/A	Minimum: 6.5 Maximum: 9.0 A.A.C. R18-11-109(B)	A&Ww and FBC	WQBEL or TBEL is always applicable to WWTPs.	pH is to be monitored using a discrete sample of the effluent and a WQBEL is set. 40 CFR Part 136 specifies that grab samples must be collected for pH. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected. pH sampling must also coincide with ammonia sampling when required (5).
Temperature	86	30°C	N/A	N/A	A.A.C. R18-11-109C the discharge shall not cause an increase in the ambient water temperature of no more than 3.0°C	A&Ww	N/A	Temperature of the effluent and the receiving water, both upstream and downstream of the discharge, is to be monitored for effluent 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 (5).
Suspended Sediment Concentration	0	No Data	N/A	N/A	80 mg/L (6)	A&Ww	RP Indeterminate (No Data)	Monitoring of the effluent and downstream receiving water is required for effluent characterization. Samples shall not be collected within during or within 48 hours after a local storm event.
Total Dissolved Solids (TDS)	4	690 mg/L effluent 240 mg/L incremental increase	N/A	N/A	723 mg/L 400 mg/L incremental increase	A.A.C. R18-11-110 Colorado River below Hoover Dam  Colorado River Basin Salinity Control Forum requirements applies to dischargers to the Colorado River and its tributaries above Imperial Dam	N/A	Monitoring required and a limit is set; both the source water and the effluent shall be monitored for TDS to determine compliance with Colorado River Basin Salinity Control Forum requirement of a 400 mg/L incremental increase above source water.

**Table 1. Permit limitations and monitoring requirements.**

Parameter	No. of Samples	Maximum Reported Concentration (1)	RP Multiplier (2)	Critical Concentration (Calculated)	Most Stringent Criterion	Most Stringent Criterion Basis (3)	Does Reasonable Potential Exist?	Proposed Monitoring Requirement/Rationale (4)
Ammonia	52	19 mg/L 1 AIR (5)	N/A	N/A	Standard varies with temperature and pH	A&Ww	RP Indeterminate (7)	Ammonia is to be monitored by discrete sample and a WQBEL in the form of an ammonia impact ratio (AIR) of 1 is set in the permit (5). An ammonia data log with concurrent pH and temperature monitoring is also required. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
Nutrients: Total Nitrogen Total Phosphorus	N: 4 P: 4	N: 16 mg/L P: 3.6 mg/L	N/A	N/A	No applicable standards	N/A	N/A	Monitoring required for effluent characterization.
Oil & Grease	4	5.1 mg/L	N/A	N/A	BPJ Technology-Based Level of 10 mg/L monthly average and 15 mg/L daily maximum	N/A	RP Indeterminate (7)	Monitoring required and a limit remains in the permit.
Hardness	12	580 mg/L	N/A	N/A	No applicable standard. Hardness is used to determine standards for specific metal parameters.	N/A	N/A	A&W standards for cadmium, chromium III, copper, lead, nickel, silver and zinc used for RP determinations were based on the average receiving water hardness value of 280 mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Antimony	12	15 µg/L	2.80	41.96 µg/L	30 µg/L	A&Ww chronic	RP Exists	Monitoring required and a WQBEL is set.
Arsenic, Total Recoverable	12	9.5 µg/L	2.77	26.28 µg/L	30 µg/L	FBC	No RP	Monitoring required for effluent characterization.
Boron	0	No Data	N/A	N/A	1,000 µg/L	AgI	RP Indeterminate (No Data)	Monitoring required for effluent characterization.
Beryllium	15 (8)	<2 µg/L	2.56	N/A	5.3 µg/L	A&Ww chronic	No RP	Monitoring required for effluent characterization.
Cadmium, Total Recoverable (9)	14 (8)	<2 µg/L	2.63	2.63 µg/L	4.78 µg/L	A&Ww chronic	No RP	Monitoring required for effluent characterization.
Chromium VI	0	No Data	N/A	N/A	11 µg/L	A&Ww chronic	No RP (Based on total chromium data)	Monitoring required for effluent characterization.
Chromium, Total	16 (10)	<10 µg/L	2.50	N/A	1000 µg/L	AgI	No RP	Monitoring required as an indicator parameter for chromium VI.

**Table 1. Permit limitations and monitoring requirements.**

Parameter	No. of Samples	Maximum Reported Concentration (1)	RP Multiplier (2)	Critical Concentration (Calculated)	Most Stringent Criterion	Most Stringent Criterion Basis (3)	Does Reasonable Potential Exist?	Proposed Monitoring Requirement/Rationale (4)
Copper, Total Recoverable (9)	13 (11)	28 µg/L	3.44	96.36 µg/L	21.59 µg/L	A&Ww chronic	RP Exists	Monitoring required and a QWBEL remains in the permit.
Cyanide	8	<50 µg/L	3.33	N/A	9.7 µg/L	A&Ww chronic	RP Indeterminate	Monitoring required and an assessment level remains in the permit.
Hydrogen sulfide	0	No Data	N/A	N/A	2 µg/L	A&Ww chronic	RP Indeterminate (No Data)	Monitoring is required for sulfides as an indicator parameter for hydrogen sulfide. If sulfides are detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.
Iron	3	40 µg/L	5.62	224.9 µg/L	1000 µg/L	A&Ww chronic	No RP	Monitoring required for effluent characterization.
Lead, Total Recoverable (9)	17 (11)	<15 µg/L	2.44	N/A	7.56 µg/L	A&Ww chronic	RP Indeterminate (High LOQ) (12)	Monitoring required and an assessment level remains in the permit.
Mercury, Total Recoverable	7 (13)	<0.2 µg/L	3.54	0.35 µg/L	0.01 µg/L	A&Ww chronic	RP Exists	Monitoring required and a QWBEL remains in the permit.
Nickel, Total Recoverable (9)	12 (13)	10 µg/L	2.80	27.97 µg/L	124.27 µg/L	A&Ww chronic	No RP	Monitoring required for effluent characterization.
Selenium	11 (13)	4.8 µg/L	4.56	21.88 µg/L	2 µg/L	A&Ww chronic	RP Exists	Monitoring required and a QWBEL remains in the permit.
Silver, Total Recoverable (9)	6	<10 µg/L	3.82	N/A	18.9 µg/L	A&Ww acute	No RP	Monitoring required for effluent characterization.
Sulfides	1	<50 µg/L	13.20	N/A	No Criteria	N/A	No RP	Indicator parameter for hydrogen sulfide. Monitoring required. If sulfides are detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.
Thallium	11	<1 µg/L	2.90	N/A	7.2 µg/L	FC	No RP	Monitoring required for effluent characterization.
Zinc, Total Recoverable (9)	14 (11)	190 µg/L	2.34	444.36 µg/L	280.37 µg/L	A&Ww chronic	RP Exists	Monitoring required and a QWBEL remains in the permit.
<b>Whole Effluent Toxicity (WET):</b>								
<i>Ceriodaphnia dubia</i> (Water flea)	2	4.0 TUC 66.48 PE	N/A	N/A	No toxicity (A.A.C. R18-11-108(A) (6))	A&Ww	RP Exists (7)	Monitoring required and a QWBEL is set.
<i>Pimephales promelas</i> (Fathead minnow)	1	1.0 TUC 17.11 PE	N/A	N/A	No toxicity (A.A.C. R18-11-108(A) (6))	A&Ww	RP Indeterminate (7)	Monitoring required and an action level remains in the permit.

**Table 1. Permit limitations and monitoring requirements.**

Parameter	No. of Samples	Maximum Reported Concentration (1)	RP Multiplier (2)	Critical Concentration (Calculated)	Most Stringent Criterion	Most Stringent Criterion Basis (3)	Does Reasonable Potential Exist?	Proposed Monitoring Requirement/Rationale (4)
<i>Pseudo-kirchneriella subcapitata</i> (Green Alga) (14)	1	-10.04 PE		N/A	No toxicity (A.A.C. R18-11-108(A) (6))	A&Ww	RP Indeterminate (7)	Monitoring required and an action level remains in the permit.

Footnotes:

1. Maximum quantified result or maximum reporting limit, whichever is highest. A maximum reporting limit is indicated with less than "<" sign.
2. Reasonable potential (RP) multiplier is a factor applied to the limited dataset reported to ADEQ by the permittee over the current permit term. This factor is a function of the sample count and coefficient of variation for the dataset that is used to approximate the 99th percentile value at a 99% confidence level based on a lognormal distribution.
3. This refers to the applicable designated use that determines the lowest (most protective) water quality standard for each pollutant. Designated use abbreviations are defined in A.A.C. R18-11-101.
4. The monitoring frequencies are as specified in the permit.
5. An AIR will be calculated by dividing effluent ammonia concentration by the applicable standard using the receiving water pH and temperature.
6. The SSC standard is expressed as a median value determined from a minimum of four samples collected at least seven days apart. The results of a suspended sediment concentration sample collected during or within 48 hours after a local storm event shall not be used to determine the median.
7. Monitoring with ALs or Action Levels always required for WWTPs for these parameters unless RP exists and limits are set.
8. Two data points were not used in RP calculations to avoid duplication. In instances of multiple analyses, the calculations utilize the result corresponding to the sample type specified in the previous permit.
9. Hardness-dependent metal - the standard for this parameter is based on the average hardness value of the effluent or receiving water as indicated above.
10. Four data points were not used in RP calculations to avoid duplication. In instances of multiple analyses, the calculations utilize the result corresponding to the sample type specified in the previous permit.
11. Three data points were not used in RP calculations to avoid duplication. In instances of multiple analyses, the calculations utilize the result corresponding to the sample type specified in the previous permit.
12. All analytical results were not-detect; however, the limit of quantitation (LOQ) exceeded the lowest applicable WQS for the receiving water designated uses.
13. One data point was not used in RP calculations to avoid duplication. In instances of multiple analyses, the calculations utilize the result corresponding to the sample type specified in the previous permit.
14. Formerly known as *Selenastrum capricornutum* or *Raphidocelis subcapitata*

## VIII. NARRATIVE WATER QUALITY STANDARDS

Narrative standards applicable to the receiving water are listed in A.A.C. R18-11-108. Part I of the permit contains effluent limitations, other limitations, and monitoring requirements to ensure the discharge is protective of the receiving water, including the narrative standards.

The applicable narrative standards follow below in italics. How ADEQ implements the standard in the permit follows the standard.

*A surface water shall not contain pollutants in amounts or combinations that:*

*Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life;*

- The permit requires monitoring for Suspended Sediment Concentration (SSC) and monitoring with an effluent limitation for Total Suspended Solids (TSS). The effluent limit for TSS ensures the discharge does not cause bottom deposits. ADEQ will continue to analyze SSC results and include an effluent limitation for SSC where reasonable potential exists.

*Cause objectionable odor in the area in which the surface water is located;*

- The permit contains a narrative requirement that the discharge must not contain objectionable odor.

*Cause off-flavor in aquatic organisms; and Are toxic to humans, animals, plants, or other organisms;*

- This permit contains requirements for Whole Effluent Toxicity (WET) Testing to ensure the discharge is free from toxicity. The permit also contains effluent characterization monitoring to assess the quality of the effluent and determine what parameters of concern are present in the discharge and at what levels. The permit includes applicable technology-based limitations (TBELs) and water quality based effluent limitations (WQBELs), where reasonable potential exists, to ensure the discharge is non-toxic and safe for aquatic organisms, wildlife, and human health.

*Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses;*

- The permit contains monitoring requirements for ammonia, nitrate-nitrite, Total Kjeldahl Nitrogen (TKN), and total phosphorus to assess the amount of nutrients present in the discharge. Where reasonable potential exists for these parameters, ADEQ includes effluent limitations for these parameters to prevent the growth of algae and other aquatic plants that may inhibit or prohibit the habitation, growth, or propagation of other aquatic life or impair recreational uses.

*Change the color of the surface water from natural background levels of color.*

- The permit contains a narrative requirement that the discharge must not contain unnatural color.

*A surface water shall not contain oil, grease, or any other pollutant that floats as debris, foam, or scum; or that causes a film or iridescent appearance on the surface of the water; or that causes a deposit on a shoreline, bank, or aquatic vegetation.*

- The permit contains a narrative requirement that the discharge shall be free from oil, grease and other pollutants that float as debris, foam, or scum; and a film or iridescent appearance.

*A surface water shall not contain a discharge of suspended solids in quantities or concentrations that interfere with the treatment processes at the nearest downstream potable water treatment plant or substantially increase the cost of handling solids produced at the nearest downstream potable water treatment plan.*

- The permit contains a monitoring with an effluent limitation for Total Suspended Solids (TSS). The effluent limit for TSS will ensure the discharge does not contain suspended solids in quantities or concentrations that would interfere with or increase the cost to the nearest downstream potable water treatment plant.

*A surface water shall not contain solid waste such as refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, appliances, or tires.*

- The permit contains a narrative requirement that the discharge must not contain refuse, rubbish, demolition or construction debris, trash, or garbage. Motor vehicles, appliances, or tires are not expected to be present in the discharge.

*A wadeable, perennial stream shall support and maintain a community of organisms having a taxa richness, species composition, tolerance, and functional organization comparable to that of a stream with reference conditions in Arizona.*

This permit contains requirements for Whole Effluent Toxicity (WET) Testing to ensure the discharge is free from toxicity. The permit also contains effluent characterization monitoring to assess the quality of the effluent and determine what parameters of concern are present in the discharge and at what levels. The permit includes applicable technology-based limitations (TBELs) and water quality based effluent limitations (WQBELs), where reasonable potential exists, to ensure the discharge is non-toxic and safe for aquatic organisms and wildlife.

**IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)**

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 effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality.

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. Monitoring frequencies for some parameters may be reduced in subsequent permits if all monitoring requirements have been met and the limits or ALs for those parameters have not been exceeded during the first permit term.

For the purposes of this permit, an “8-hour composite” sample has been defined as a flow-proportioned mixture of two or more discrete samples (aliquots) obtained at equal time intervals over an 8-hour period (if only two samples are collected, they should be taken approximately 8 hours apart). The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling.

These criteria for composite sampling are included in order to obtain samples that are representative of the discharge given the potential variability in the duration, frequency and magnitude of discharges from this facility.

Discrete (i.e., grab) samples are specified in the permit for parameters that for varying reasons are not amenable to compositing.

Monitoring locations are specified in the permit (Part I.A and Part II.A) in order to ensure that representative samples of the influent and effluent are consistently obtained.

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(j). 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.

The permit (Part II.A.3) 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.

Reporting requirements for monitoring results are detailed in Part II, Section B of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs), Ammonia Data Logs, and AZPDES Flow Record forms. The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

**Electronic Reporting**

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 required permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ has created an online portal called myDEQ that allows users to submit their discharge monitoring reports and other applicable reports required in the permit.

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.5). 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.

Requirements for retention of monitoring records are detailed in Part II.D.1 of the permit.

**X. BIOSOLIDS REQUIREMENTS (Part III in Permit)**

Standard requirements for the monitoring, reporting, record keeping, and handling of biosolids, as well as minimum treatment requirements for biosolids according to 40 CFR Part 503 are incorporated in the permit.

**XI. SPECIAL CONDITIONS (Part V in Permit)**

**Operation**

This permit condition requires the permittee to ensure that the WWTP has an operator who is certified at the appropriate level for the facility, in accordance with A.A.C. R18-5-104 through -114. The required certification level for the WWTP operator is based on the class (Wastewater Treatment Plant) and grade of the facility, which is determined by population served, level of treatment, and other factors.

**Permit Reopener**

This permit may be modified based on newly available information; to add conditions or limits to address demonstrated effluent 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 from the Virgin River DWID WWTP will be to a perennial water with Tier 2 antidegradation protection. This is a renewal permit for an existing facility with no new or expanded discharge, and the existing uses have been maintained. Therefore, an antidegradation review is not required at this time. Effluent 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 on ADEQ's website or 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 on ADEQ's website or 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 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 – Surface Water Permits Unit  
Attn: Rachael Willis  
1110 West Washington Street  
Phoenix, Arizona 85007

Or by contacting Rachael Willis at (602) 771 – 0902 or by e-mail at [willis.rachael@azdeq.gov](mailto:willis.rachael@azdeq.gov).

## XVI. INFORMATION SOURCES

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

1. AZPDES Permit Application Form(s) 2A and 2S, received January 23, 2026, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.
2. Supplemental information to the application received by ADEQ on February 10, 2026, and February 26, 2026.
3. ADEQ files on the Virgin River DWID WWTP.
4. ADEQ Geographic Information System (GIS) Website.
5. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters*, adopted December 31, 2016.
6. 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*.
7. EPA Technical Support Document for Water Quality-based Toxics Control (EPA-505-2-90-001, 1991).
8. U.S. EPA NPDES Permit Writers' Manual, September 2010.
9. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion, US EPA (EPA-823-B-96-007, 1996).
10. National Pollutant Discharge Elimination System Whole Effluent Toxicity Permit Writers' Manual, U.S. EPA (EPA-833-B-24-001).
11. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012, 2002).
12. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002).
13. National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, U.S. EPA (EPA-833-R-10-003, 2010).

14. *Method Guidance and recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136) (EPA-821-B-00-004, 2000).*
15. National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, U.S. EPA (EPA-833-R-10-004, 2010).

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