



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

VIA ELECTRONIC MAIL

Justin Bern
Surface Water Quality Protection Manager
Arizona Department of Environmental Quality
1110 W Washington St.
Phoenix, AZ 85007

Re: Final National Pollutant Discharge Elimination System (NPDES) Permit Quality Review Report for Arizona Department of Environmental Quality (ADEQ)

Dear Mr. Bern:

EPA Region 9 is pleased to provide you with the final report describing findings of the NPDES Permit Quality Review (PQR) conducted for Arizona. The final report summarizes our analysis based on permit file reviews and discussions held with ADEQ staff and managers in 2020. EPA found that permits issued in the state were generally of good quality and adhered to federal guidelines. In particular, ADEQ implements a statewide permit template which contributes to timely permit issuance and consistency between permits.

We provided a draft PQR report on January 12, 2022 and received comments from ADEQ on February 11, 2022. EPA's responses to the ADEQ's comments are below.

- ADEQ requested clarification on how and when items identified as "in progress" can be considered "resolved" under Table 2. Recommended Action Items Identified During the 2012 PQR. To provide clarification, EPA added footnotes to the table to acknowledge actions from the 2012 PQR that we consider carryover items, and thus not yet resolved, due to findings in this PQR. EPA has identified recommended actions in this PQR to help resolve these carryover action items, which can be found in Tables 4 and 5.
- ADEQ requested clarification on how to resolve Table 3, Essential Action Item #2: complete an antidegradation analysis for all changes that result in less stringent limits and document it in the final fact sheet. ADEQ should provide more detailed documentation of antidegradation analyses in permit fact sheets for all changes that result in less stringent limits. In Table 5, EPA recommends ADEQ may resolve this finding by including specific instructions and example language in the fact sheet template for documenting antidegradation analyses.
- ADEQ provided updated information that the small MS4 permit was revised and reissued in September 29, 2021 with requirements to meet the e-reporting rule by December 2025. EPA added a footnote to Table 3 to include this updated information.

- ADEQ requested clarification on whether action items #9, 10, 11 in Table 3, Essential Action Items from FY 2018-2022 PQR Cycle, were resolved in recently issued permits in 2021. Based on EPA’s real-time permit reviews of recently issued permits, ADEQ has not yet resolved these items. EPA recommends ADEQ address these action items through an updated permit template for MS4 permits.
- ADEQ requested clarification regarding Table 4, Recommended Action Items from FY 2018-2022 PQR Cycle, action item #1: Consider including limit calculations for mass-based TBELs for POTWs in fact sheets. It is important for permit writers to document the basis for limit calculations and show their work in fact sheets so that future permit writers working on renewal permits understand the basis for previous permit limits. This item could be addressed by updating the fact sheet template.
- ADEQ requested clarification on whether Table 5, EPA Recommendations to Address Essential Items from FY 2018 – 2022 PQR Cycle are a “must” or a “should.” EPA has proposed recommendations as ways to address the essential action items; however, we will consider other ideas presented by ADEQ. EPA added a footnote to the table stating we are open to alternative approaches at ADEQ’s request.

As noted above, the PQR includes action items for ADEQ to address specific issues. We look forward to working with you to determine next steps and develop a schedule to promptly implement these action items, with a focus on the essential action items. We will work with Arizona to incorporate key actions to improve the program in the next Performance Partnership Agreement Workplan.

We greatly appreciate the cooperation we received from ADEQ during the review and look forward to our continued partnership to achieve Clean Water Act goals through the NPDES permitting program. If you have further questions or concerns, please contact Gary Sheth of the NPDES Permits Section at sheth.gary@epa.gov or (415) 972-3516.

Sincerely,

Ellen M. Blake
Assistant Director, Water Division

Enclosures

cc: Chris Montague-Breakwell, Program Manager, ADEQ

Region 9 NPDES Permit Quality Review

Arizona

March 2022

U.S. EPA Region 9
75 Hawthorne St.
San Francisco, CA 94105

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Executive Summary

EPA Region 9's National Pollutant Discharge Elimination System (NPDES) Permit Quality Review (PQR) for Arizona provides an overview of the Arizona NPDES permitting program, recognizes the many challenges Arizona faces, and identifies specific areas where EPA and Arizona can work together to continue to strengthen permit language and documentation.

The PQR examined 11 individual permits and 2 general permits issued by the Arizona Department of Environmental Quality (ADEQ), several ADEQ permitting policies, and the statewide permit template. In addition to core permit requirements, the PQR also focused on several national and regional priority areas:

- Permit Controls for Nutrients in Non-TMDL Waters,
- Small Municipal Separate Storm Sewer System (MS4) Permit Requirements
- Effectiveness of POTW NPDES Permits with Food Processor Contributions.
- General Stormwater Permits and Phase I MS4s, and
- TMDL Implementation

EPA found that permits issued in the state were generally of good quality and adhered to federal guidelines. In particular, Arizona implements a statewide permit template which contributes to timely permit issuance and consistency between permits. The main findings of the PQR are identified in 13 Essential actions (Table 3) and 22 Recommended actions (Table 4). EPA recommends (see Table 5) that these Essential actions are addressed through the following:

- Update the ADEQ permit template.
- Document antidegradation analysis and TMDL implementation in fact sheet.
- Update the Arizona pretreatment rule.
- Update NPDES-ICIS to contain accurate information regarding approved pretreatment programs.
- Revise e-reporting language upon reissuance of the ADEQ small MS4 permit.

The State of Arizona reviewed and provided comments on the draft PQR report on February 11, 2022. The State agreed with many of the draft PQR's findings and recommendations. Several of these actions are already underway, including development of a pretreatment rule.

I. PQR BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Program and Permit Quality Reviews (PQRs) evaluate a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program as well as opportunities for improvement in the development of NPDES permits.

EPA previously conducted a PQR of the Arizona NPDES permitting program on October 1, 2012. The 2012 PQR summary report is available at: https://www.epa.gov/sites/default/files/2015-09/documents/pqr_arizona_report.pdf. In 2012, EPA proposed various action items to improve the Arizona NPDES permitting program. During the PQR, EPA requested updates from Arizona on the progress on those action items. Of the three action items identified during the last PQR as Essential¹ tasks, two have been resolved and the one remaining action requires a rule change, which will be addressed by ADEQ expected future rule package, which will also be included in the next performance partnership grant (PPG) workplan. In addition, EPA also identified eight Recommended action items in 2012 to improve Arizona's program; Arizona has implemented six of these recommendations and is in the process of implementing the other two Recommended actions. Section VI of this report contains a detailed review of the progress on action items identified during the last PQR.

EPA conducted a review of the Arizona NPDES permitting program that included reviewing permit files that Arizona sent over email and virtual interviews with members of the Arizona NPDES program staff. The review did not include an on-site visit to ADEQ in Phoenix, Arizona, due to COVID-19 restrictions.

As a result of the PQR, EPA is proposing new action items to improve and/or strengthen Arizona's NPDES permit program. The proposed action items are identified within sections III, IV, and V of this report and are divided into two categories:

- **Essential Actions** - Proposed Essential action items address noncompliance with respect to a federal regulation, which EPA has cited for each Essential action item. The State must address these action items in order to come into compliance with federal regulations.
- **Recommended Actions** - Proposed Recommended action items are recommendations to increase the effectiveness of the State's NPDES permit program.

The PQR includes reviews of core permit components and national and regional topic areas, as well as discussions between the PQR review team and ADEQ staff addressing program status and the permit issuance process. The permit reviews consisted of review of the permit application, permit, fact sheet, and any correspondence, reports or documents that provide the

¹ During the 2012-2017 PQR cycle, these action items were known as "Category 1" and address deficiencies or noncompliance with respect to federal regulations. EPA is now referring to these action items going forward, as Essential. In addition, previous PQR reports identified recommendations as either "Category 2" or "Category 3" action items. EPA is now consolidating these categories of action items into a single category: Recommended.

basis for the development of the permit conditions and related administrative process. The PQR also included conversations between EPA and the State on program status, the permitting process, responsibilities, organization, staffing, and program challenges.

EPA reviewed a total of 13 permits. EPA reviewed some permits for both the core review and one or more national or regional topic area reviews. EPA selected permits based on issue date and the review categories that they fulfilled. See summary table below.

Permit Facility/Name	NPDES Permit No.	Core Review	Nutrients	Food Processors	Small (Phase II) MS4	Industrial Stormwater & Large/Medium (Phase I) MS4s	TMDL
Central Buckeye WWTP	AZ0025313						
City of Phoenix 23 rd Ave. WWTP	AZ0020559						
City of Wilcox WWTP	AZ0025771						
San Tan SRP Generating Station	AZ0023558						
Page Springs Fish Hatchery	AZ0021245						
Pinto Valley Mine	AZ0020401						
Rio De Flag WRP	AZ0023639						
San Jose WWTP	AZ0026077						
City of Williams WWTP	AZ0025755						
Tuscon Phase I MS4	AZS000001-2010						
ADOT Phase I MS4	AZS000018-2015						

MS4 Phase II General Permit	AZG2016- 002						
Arizona MSGP	AZMSG2019- 001						

Core Review

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard PQR tools, and talking with permit writers regarding the permit development process. The core review focused on the *Central Tenets of the NPDES Permitting Program*² to evaluate the Arizona NPDES program. Core topic area permit reviews are conducted to evaluate similar issues or types of permits in all states.

Topic Area Reviews

Topic area reviews include national and regional topic areas. EPA reviewed permits for the following national topics: Permit Controls for Nutrients in Non-TMDL Waters, Small Municipal Separate Storm Sewer System (MS4) Permit Requirements, and Effectiveness of POTW NPDES Permits with Food Processor Contributions. EPA Region 9 also selected the following target areas: Stormwater Permitting (General Stormwater Permits and Phase I MS4s) and TMDL Implementation. These reviews provide important information to Arizona, EPA Region 9, EPA HQs, and the public on specific program areas.

II. STATE PROGRAM BACKGROUND

A. Program Structure

The Arizona Department of Environmental Quality (ADEQ) was authorized to administer the NPDES permit program on December 5, 2002. ADEQ has three divisions; one of them is the Water Quality Division (WQD). The WQD includes the Surface Water Protection Section (SWPS) which includes the Permits unit and the Enforcement and Compliance unit. The Permits unit issues individual and general Arizona NPDES (AZPDES) permits and certifies that federal NPDES permits meet Arizona state water quality standards (WQSs). ADEQ’s primary office is in Phoenix, and the personnel in the Phoenix office are responsible for AZPDES permit development and most aspects of permit implementation and enforcement. ADEQ has a field office in Tucson, and staff in that office perform inspections and liaison functions. In the Phoenix office, there are 8 AZPDES permit writers, and permits are typically assigned by writer capacity, but expertise is considered as well.

² <https://www.epa.gov/npdes/central-tenets-npdes-permitting-program>

Permit writers are trained internally and through use of EPA's Permit Writer's Course. EPA's permit writer's manual and internal mentorship are also used as resources to train permit writers. In addition, the SWPS uses several tools to support AZPDES permit development. For individual permits, permit writers use fact sheet and permit templates that include standard headings and language. The templates are oriented toward POTWs because most of Arizona's permitted facilities are POTWs. In addition, permit writers use an interactive spreadsheet to conduct reasonable potential analysis (RPA) and calculate permit limits. This spreadsheet is based on the approach specified in EPA's Technical Support Document for Water Quality-based Toxics Control (TSD) (EPA/505/2-90-001) and uses formulas and algorithms to conduct RP calculations automatically, based on information entered into the spreadsheet. Other tools include RPA guidance, various form letters that address common permitting scenarios, and monitoring frequency guidance for POTWs.

The SWPS uses a flow board to track the status of AZPDES permits and includes timeframes and specific information for each permit. Permittees submit Discharge Monitoring Report (DMR) data via MyDEQ, a database which is managed by the Compliance Section. ADEQ management reviews draft permits and draft permits are circulated internally for further review and comment. ADEQ maintains permit files in hard copy in the Phoenix office, and individual permit writers maintain some electronic files. Final permits and fact sheet are available on ADEQ's online mapping tool³; however, current permits are not available online for all facilities.

B. Universe and Permit Issuance

At the time of this review, SWPS administers 135 individual non-stormwater AZPDES permits, including 98 POTW permits and 37 non-municipal permits. In addition, eight medium and large MS4s are subject to individual stormwater permits. The SWPS has developed general permits for stormwater from small MS4s, construction, and industrial activities (i.e., Multi-Sector General Permit or MSGP), as well as general permits for industrial stormwater from mining, de minimis (low-threat) discharges, and pesticides. The significant industries in the state are copper mining and agriculture, including grazing. At the time of review, greater than 95% of Arizona's permits are current.

Seven percent of AZPDES permits were expired (5% for major permits), which is better than the commitment in ADEQ's PPG workplan which was at least 90% current. ADEQ has indicated that it intends to achieve 100% current during Arizona's next state fiscal year in 2022.

The SWPS reminds facilities about permit reapplication prior to permit application due dates. State permit application forms, which include minor modifications of the EPA NPDES permit application forms, are used. Permit writers ensure that applications are complete and then compile the applications and other available data. Technology-based effluent limitations (TBELs) are identified and calculated, and a standardized spreadsheet is used to complete a reasonable potential analysis (RPA) and determine water quality-based effluent limitations (WQBELs). Mixing zones are not used when the discharge is to ephemeral waters, but they may be used for discharges to the Colorado River and other flowing waters that are not effluent dominated. The SWPS has developed internal guidance regarding establishing the monitoring

³<https://azdeq.gov/flowregimes>

frequency for permit limits and assessment levels. Special conditions are included as warranted. Arizona is authorized to implement the NPDES Biosolids Program, so biosolids management may be included as a special condition when appropriate. Standard conditions are included in an appendix in each AZPDES permit. For individual permits, the SWPS communicates often with permittees to address issues and promote understanding. Meetings are held with permittees when they are deemed necessary. For general permits, SWPS conducts a significant number of stakeholder outreach meetings (e.g. 10–15 for the MSGP). The meetings are typically in Phoenix, but may be held in other locations to allow for public participation in other locations. During the Covid-19 pandemic, SWPS has significantly expanded its ability to conduct meetings, workshops, hearings, etc. online. Once the permit and fact sheet are drafted, they undergo internal review, stakeholder review (agencies, permittee, and identified stakeholders), and public notice and comment. Permit challenges and appeals have decreased as the program has matured and stakeholder outreach has increased.

C. State-Specific Challenges

The Navigable Water Protection Rule (NWPR) published in 2020 created an increase in workload for the AZPDES program. ADEQ started to assess their waterbodies to determine flow regime, which took staff time away from other permit writing responsibilities.

D. Current State Initiatives

The Arizona NPDES program has several state initiatives that aim to increase the efficiency of permit writing and data submittal, strengthen engagement with permittees and stakeholders, and determine program jurisdiction and expand surface water protection. Internally, ADEQ has shortened the time it takes to draft a permit, updated the state fact sheet template to improve permittee understanding, and automated the NOI process for general permits. ADEQ has created a system to identify exceedances monthly when a DMR is submitted and takes action to engage with the permittee to identify what caused the exceedance. Since this initiative was created, there has been a decrease in exceedances through identifying misreported values and problem solving with the permittee. ADEQ continues to prioritize engagement with stakeholders during the permit development process. They hold stakeholder meetings for permits and ensure they invite all interested parties. ADEQ continues to support permittees to adopt post-construction performance standards before they are required in a permit.

After promulgation of the federal Navigable Waters Protection Rule (NWPR) in June 2020, ADEQ began a systematic review of the flow regime of Arizona's surface waters and created a publicly available online geospatial tool to display the information. This tool is based on publicly available data from multiple sources and is used by the SWPS as an initial screening tool to determine whether AZPES permits are required.

ADEQ is also developing a state Surface Water Protection Program (SWPP), which is aimed at protecting surface waters which may or may not be considered WOTUS. ADEQ plans to issue AZPDES permits for discharges to WOTUS and waters covered under the SWPP.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Background

Basic facility information is necessary to properly establish permit conditions. For example, information regarding facility type, location, processes, and other factors is required by NPDES permit application regulations (40 CFR 122.21). This information is essential for developing technically sound, complete, clear, and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

Facility information is included in AZPDES fact sheets, which includes a description of the facility and waste streams, processes conducted at the facility, and location of outfalls. Facility information is consistently complete and included in the permit record.

Program Strengths

Fact sheets consistently include sufficient facility information.

Areas for Improvement

No areas of improvement have been identified.

Action Items

No action items have been identified.

2. Permit Application Requirements

Background and Process

Federal regulations at 40 CFR 122.21 and 122.22 specify application requirements for permittees seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the state and used in permit development.

Arizona uses EPA application forms and updates them as EPA updates them. Arizona, at the time of this PQR, receives paper forms for individual permits through mail or electronic forms through email. Notices of Intent (NOIs) for coverage under General permits are submitted through an online form (myDEQ).

As required under federal regulations, permit renewal applications are due 180 days before the expiration of the existing permit. If permittees miss the 180-day deadline, then their permit is not administratively extended. SWPS mails a hardcopy renewal letter three months before the application is due to ensure it is on time and complete.

Upon receipt of an application, the permit writer assigned to the permit reviews the application for completeness using a standard checklist.

In general, the permit files reviewed contain current, appropriate, and complete permit applications. EPA identified minor discrepancies, including missing or incomplete process flow diagrams, and incomplete data of effluent monitoring during the previous permit cycle. However, in general the application files contained all necessary information.

A copy of the application and any supplemental documentation provided by the permittee that SWPS used to draft the permit is generally available in the administrative record. EPA was not able to review any physical administrative records due to COVID-19 restrictions. Based on electronic documentation provided, application materials appear complete.

Program Strengths

Positive aspects of the AZPDES permit application process include the use of reminder letters sent three months in advance of the application due date and the use of a checklist to ascertain the completeness of applications. The use of myDEQ for NOIs seeking coverage under Arizona general permits are a program strength, especially as the electronic forms that potential permittees complete have built in checks such that a permittee cannot submit a NOI letter without correctly completing the electronic form. This reduces the need for manual verification of NOIs.

Areas for Improvement

EPA did not identify any areas of improvement.

Action Items

EPA did not identify any action items.

B. Developing Effluent Limitations

1. Technology-based Effluent Limitations

NPDES regulations at 40 CFR 125.3(a) require that permitting authorities develop technology-based requirements where applicable. EPA reviewed permits, fact sheets, and other supporting documentation for POTWs and non-POTWs to assess whether technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit.

TBELs for POTWs

Background and Process

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent pollutant removal), and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the secondary treatment regulations at 40 CFR Part 133. EPA reviewed a total of three POTW permits as part of the PQR.

The permits for POTWs that EPA reviewed for the core review all include numeric limits for BOD, TSS, and pH. These limits are expressed in appropriate units (i.e. concentration, mass, SU)

and in the appropriate forms (i.e. monthly average and weekly average). Mass-based limits are consistently included; however, limit calculations for mass-based TBELs were not included in the fact sheets reviewed. Appropriate removal requirements for BOD and TSS are included. The facility treatment processes and basis for establishing TBELs are described in the fact sheet. The final limits and rationale for the limits are included in the fact sheet and permit. No adjusted TBELs are included in the permits that EPA reviewed.

Program Strengths

The establishment of TBELs is consistent and meets regulatory requirements regarding units and form. Additionally, the description of the facility processes and rationale for limits is clear and consistent.

Areas for Improvement

The fact sheets that EPA reviewed did not consistently include calculations for mass-based TBELs; including these calculations would allow the public and permittee to understand how the permit writer calculated the final mass-based limits.

Action Items

Recommended

- Consider including limit calculations for mass-based TBELs for POTWs in fact sheets.

TBELs for Non-POTW Dischargers

Background and Process

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Available Technology Economically Achievable (BAT) or Best Conventional Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BAT/BCT developed on a case-by-case using best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR 125.3(d).

EPA reviewed permits for three non-POTW facilities: Page Springs Fish Hatchery, Pinto Valley Mine, and San Tan Generating Station. A description of the facility and categorization is included in part VIII of the fact sheet. The activities at the facility are described as a basis for categorization and applicable regulations are identified.

The Page Springs Fish Hatchery permit applies ELGs for concentrated aquatic animal production facilities in the form of best management practices for fish hatcheries in accordance with 40 CFR 451. Additionally, TBELs for BOD, TSS, and pH are established based on best professional judgement (BPJ); however, it is not clear how the permit writer calculated these TBELs. Permit

writers should include a discussion in the fact sheet regarding how and why case-by-case TBELs were established.

The Pinto Valley Mine permit applies ELGs for the Ore Mining and Dressing Point Source Category found at 40 CFR Part 440. Subpart J is applied, which applies to mines that produce copper, lead, zinc, gold, silver, or molybdenum ores, singly or in combination, from open-pit or underground operations. The TBELs established in the permit include monthly average and daily maximum effluent limitations for copper, zinc, lead, mercury, cadmium, TSS, and pH in accordance with the ELGs outlined in 40 CFR Part 440 Subpart J.

The San Tan Generating Station permit applies ELGs for steam power generating plants found at 40 CFR § 423. TBELs are established in the permit for pH, TSS, oil and grease, chlorine, chromium, and zinc. Priority pollutants are prohibited from being detected in the discharge, with the exception of zinc and chromium which have applicable ELGs. PCBs are prohibited from being discharged. Additionally, the permit applies requirements at 40 CFR 125.94 which specifies that facilities with greater than two MGD intake flow must apply Best Technology Available (BTA) for impingement, mortality, and entrainment. The permit incorporates terms and conditions for BTA compliance which must be met by the permittee.

Overall, the three non-POTW permits that EPA reviewed include appropriate TBELs. Permit writers apply ELGs and use BPJ when appropriate. Adequate information and justification is provided regarding how ELGs are applied and how TBELs are calculated. The final TBELs are in appropriate units and form.

An action item regarding TBELs for non-POTW dischargers was included in the last PQR, which stated, “To ensure that applicable ELGs are fully implemented in final permits as required by 40 CFR 405-471, EPA will meet with ADEQ to ensure permit writers and managers understand the requirement to incorporate ELG requirements. (Category 1).” This action item has been resolved, as ADEQ and EPA have standing meetings to resolve questions and items regarding ELGs, and the permits reviewed in this PQR implement ELGs appropriately.

Program Strengths

Adequate justification is provided for the categorization of facilities, and applicable regulations are cited. Effluent limitations are in appropriate units and form.

Areas for Improvement

When using BPJ to develop case-by-case TBELs, adequate justification should be provided for the numerical limits and necessity of case-by-case TBELs and adequately documented in the fact sheet.

Action Items

Essential

- Include a discussion in the fact sheet regarding how and why case-by-case TBELs were established. [40 CFR § 125.3(c)(2)]

2. Reasonable Potential and Water Quality-Based Effluent Limitations

Background

The NPDES regulations at 40 CFR 122.44(d) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such “water quality-based effluent limits” (WQBELs), the permitting authority must evaluate whether any pollutants or pollutant parameters has the reasonable potential to cause or contribute to an excursion above any applicable water quality standard.

The PQR for Arizona assessed the processes employed to implement these requirements. Specifically, the PQR reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- determined the appropriate water quality standards applicable to receiving waters,
- evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- determined critical conditions,
- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limits were necessary for pollutants of concern and, where necessary,
- calculated such limits or other permit conditions.

For impaired waters, the PQR also assessed whether and how permit writers consulted and developed limits consistent with the assumptions of applicable EPA-approved total maximum daily loads (TMDLs).

Process for Assessing Reasonable Potential and Developing WQBELs

To determine Reasonable Potential (RP), AZPDES permit writers evaluate all data submitted by the applicant or permittee in the current permit term. To determine pollutants of concern, permit writers consider all pollutants present in the effluent. For a new permit, permit writers determine pollutants of concern by the type of facility and pollutants that are commonly discharged by facilities of that type. It is Arizona’s practice that there must be at least five detected samples to complete RPA; however, the analysis can be completed with less than five detected samples if one of those samples is higher than the applicable WQS. It is Arizona’s practice that data from the previous permit term is considered when there are four or less detectable samples for a parameter within the current permit term. Additionally, it is Arizona’s practice that data from the previous permit term is not included if it results in concluding that there is reasonable potential when there would not be reasonable potential from more recent data.

After determining the applicable data to include, AZPDES permit writers use a spreadsheet to calculate each coefficient of variation (CV) and determine if there is reasonable potential for each parameter. Data are pasted into the spreadsheet, and the calculations are completed with formulas that are imbedded into the spreadsheet. AZPDES permit writers use this information to determine if WQBELs should be established for each parameter in the analysis. AZPDES

permits may include a conclusion that RP is indeterminate. In this case, assessment levels are established, which increase the monitoring and reporting for that parameter and allow the permit writer to determine if a limit is needed after more monitoring information is available.

After determining reasonable potential, AZPDES permit writers determine the receiving water by determining the waterbody that the effluent is discharged into. Arizona's EPA-approved water quality standards are referenced to determine applicable water quality standards within the receiving water. Arizona's 303(d) list and applicable state TMDLs are used to evaluate the impairment status of the receiving water and determine if there are applicable TMDLs. Additionally, permit writers may work with members of the water quality standards team to identify applicable impairments and TMDLs.

Limits are derived using the reasonable potential spreadsheet; formulas in the spreadsheet automatically calculate average monthly and maximum daily limits given the information the permit writer adds to the spreadsheet. An effluent limit for a parameter is included in the permit if reasonable potential was found for that parameter.

RPA document

AZPDES permit writers reference a document when completing a reasonable potential analysis and determining Water Quality Based Effluent Limits (WQBELs). This document is titled "Guidelines for Determining Reasonable Potential and Water Quality Based Permit Limits based on the Technical Support Document for Water Quality-based Toxics Control (TSD) procedures," and is consistent with national guidance.

This RP document lists steps for completing a reasonable potential analysis, and provides different instructions based on things like dilution allowance, sample size, and number of non-detect values. The instructions for calculating the CV, calculating the multiplier, and comparing the projected maximums to applicable standards are consistent with regulatory requirements.

There is no national guidance regarding how to conduct a reasonable potential with data that has non-detect values. ADEQ permit writers use an internal procedure for determining reasonable potential when some or all the measurements are non-detect. If all measurements are non-detect, the permit writer uses a CV of 0.6, and each non-detect value is considered to be $\frac{1}{2}$ the value of the detection limit. If there is a mixture of detectable and non-detect measurements, permit writers use the highest detectable data point in the reasonable potential analysis. Permit writers use the calculated CV for the reasonable potential analysis only if there are 10 or more detectable measurements. Otherwise, permit writers use a CV of 0.6. This RPA procedure is consistent with national guidance; however, the CV and RP multiplier are not consistently calculated in accordance with the internal RPA procedure. Of the seven permits EPA reviewed for the core review, six permits included CV or RP multiplier calculations that were not consistent with the internal ADEQ RPA procedure. EPA recommends that CVs and RP multipliers are calculated consistent with ADEQ internal procedure and EPA's Technical Support Document for Water Quality-based Toxics Control (EPA, 1991).

Documentation of RPA and WQBELs

The use of mixing zones is documented in ADEQ fact sheets in a section titled “mixing zone” under part VIII of the fact sheet. ADEQ requires permittees to request a mixing zone for approval before it can be considered in the development of WQBELs. Otherwise, limits must be met without consideration of a mixing zone.

RPA is documented in part VIII of the fact sheet, and the final WQBELs are documented in Part I of the permit. Although there is documentation of limit development in the internal spreadsheet, none of the fact sheets reviewed included documentation regarding how WQBELs were calculated.

Program Strengths

Reasonable Potential

An RPA document is available to permit writers which outlines the steps for completing the analysis and is consistent with regulatory requirements. Additionally, a spreadsheet is available to permit writers for completing RPA.

WQBEL Development

A document outlining the steps for developing WQBELs and a spreadsheet which includes formulas for calculating WQBELs are available for permit writers and are consistent with regulatory requirements.

Areas for Improvement

Reasonable Potential

The CV and RP multiplier are not consistently calculated in accordance with internal procedures. The RP multiplier is not included in the fact sheet RPA table; including it would improve clarity and consistency. Additionally, the inclusion of monitoring data from previous permit terms should not be dependent on the outcome of the RPA, but rather whether sufficient data is available in the last 3-5 years and whether changes to the treatment system have occurred, which may warrant only use more recent data.

WQBEL Development

No action items identified.

Action Items

<p>Recommended</p>	<ul style="list-style-type: none"> • <u>Reasonable Potential</u> • The calculation of CVs and reasonable potential multipliers should be fully consistent with ADEQ internal procedures and EPA's Technical Support Document for Water Quality-based Toxics Control (EPA, 1991). • Consider including reasonable potential multipliers in the reasonable potential table in Part VIII of the fact sheet. • The ADEQ internal RPA procedure should be updated to ensure the decision to include monitoring data from previous permit terms in the RPA is not dependent on the results of the RPA.
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3. *Final Effluent Limitations and Documentation*

Background and Process

Permits must include all applicable statutory and regulatory requirements, including technology and water quality standards, and must include effluent limitations that ensure that all applicable CWA standards are met. The permitting authority must identify the most stringent effluent limitations and establish them as the final effluent limitations in the permit. In addition, for reissued permits, if any of the limitations are less stringent than limitations on the same pollutant in the previous NPDES permit, the permit writer must conduct an anti-backsliding analysis, and if necessary, revise the limitations accordingly. In addition, for new or increased discharges, the permitting authority should conduct an antidegradation review, to ensure the permit is written to maintain existing high quality of surface waters, or if appropriate, allow for some degradation. The NPDES regulations at 40 CFR 131.12 outline the common elements of the antidegradation review process.

In addition, permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology-based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for WQBELs as well as the procedures explaining the basis for establishing, or for not establishing, WQBELs should be clear and straight forward. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file. The permit writer should sufficiently document determinations regarding anti-backsliding and antidegradation requirements.

In the ADEQ permits reviewed, all fact sheets included a table listing parameters, RP analysis, and applicable water quality standards; however, the findings of the RPA analysis are not described further, and CVs and RP multipliers are not included in the table. In addition, the fact sheets did not include calculations showing how permit writers determined effluent limits. Overall, greater explanation of the basis for permit parameters should be included in the fact sheet.

Anti-backsliding

“Anti-backsliding” refers to statutory (CWA Section 402(o) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal, reissuance, or modification of an NPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the previous permit. All the individual permits reviewed show that this requirement is generally sufficiently addressed in the fact sheet with a specific section addressing anti-backsliding. The factsheets reviewed all had adequate “boilerplate” language reflecting the anti-backsliding requirements. Where appropriate, such as in the City of Buckeye permit, the factsheet stated: “No limits are less stringent due to a change in the WQS in this permit.” However, in some permits reviewed, such as the City of Phoenix 23rd Avenue permit and City of Wilcox permit, a few permit limits were removed due to a lack of reasonable potential for an

excursion of water quality standards. For these permits, the permit fact sheet only included a statement that permit limits were removed due to lack of reasonable potential, which “is considered allowable backsliding under 303(d)(4).” In cases like these, further explanation, including a summary of the receiving water quality and any impairments, as well as effluent data to show no reasonable potential and support the use of the 303(d)(4) exception to anti-backsliding should be included.

Antidegradation

“Antidegradation” rules have been established in Arizona pursuant to A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. However, ADEQ has yet to adopt an official antidegradation implementation policy. In the absence of such a consistent implementation policy, individual permits reviewed show that the antidegradation requirement is not sufficiently addressed in some fact sheets.

In some permits reviewed, such as the City of Phoenix 23rd Avenue and City of Wilcox permits where limits were removed, the antidegradation section of the fact sheet merely states that “As long as the Permittee maintains consistent compliance with ...[permit] provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable antidegradation requirements.”

In other situations where there has been a change in the classification of the receiving water from a lesser protected Tier 1 to a more protected Tier 2, a much more in-depth antidegradation analysis is required to be included in the fact sheet. This situation did not appear in any of the permits reviewed under this PQR.

In both these instances the factsheet should include a complete summary of the antidegradation analysis, either where there is an increase in flow, or where limits are being removed or made less stringent and ADEQ is using the 303(d)(4) exception to anti-backsliding.

Program Strengths

Fact sheets are well organized with specific sections that are consistent across permits to address various requirements including anti-backsliding, and antidegradation. This makes it easy to find where in the fact sheet support for various permits terms can be located. The fact sheets in general have adequate descriptions of applicable standards and TMDLs and regulatory basis. Final limits are documented in the permit, with appropriate units and form.

Areas for Improvement

Backsliding requirements should go beyond mere statements that assert that any permit limit removal is “allowable backsliding” and include summary of data relied on and explanation of why that is the case. Additionally, including limit calculations in the fact sheet would improve clarity for the established numeric limits.

A complete summary of the antidegradation analysis should be included in each fact sheet when limits are removed or less stringent and ADEQ is using the 303(d)(4) exception to anti-backsliding.

*Action Items***Essential**

- Complete an antidegradation analysis for all changes that result in less stringent limits and document it in the final fact sheet. [40 CFR 131.12]

Recommended

- Consider documenting WQBEL calculations in the fact sheet.
- Provide a more detailed rationale in the factsheet when a limit is removed, including a discussion of the results of the reasonable potential analysis and an anti-backsliding analysis under Section 304(a).

C. Monitoring and Reporting Requirements*Background and Process*

NPDES regulations at 40 CFR 122.41(j) require permittees to periodically evaluate compliance with the effluent limitations established in their permits and provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR 122.44(i) requires NPDES permits to establish, at minimum, annual reporting of monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR 122.48 requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR 122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. 40 CFR Part 127 requires NPDES-regulated entities to submit certain data electronically, including discharge monitoring reports and various program-specific reports, as applicable.

NPDES permits should specify appropriate monitoring locations to ensure compliance with the permit limitations and provide the necessary data to determine the effects of an effluent on the receiving water. A complete fact sheet will include a description and justification for all monitoring locations required by the permit. States may have policy or guidance documents to support determining appropriate monitoring frequencies; documentation should include an explicit discussion in the fact sheet providing the basis for establishing monitoring frequencies, including identification of the specific state policy or internal guidance referenced. Permits must also specify the sample collection method for all parameters required to be monitored in the permit. The fact sheet should present the rationale for requiring grab or composite samples and

discuss the basis of a permit requirement mandating use of a sufficiently sensitive Part 136 analytical method.

Arizona generally follows EPA’s national guidance on developing monitoring requirements. The permits reviewed included appropriate monitoring and reporting requirements based on the facility type, nature of discharge, and appropriate limits in the permit. For example, influent monitoring is included for standard parameters such as TSS and BOD₅ for POTWs. The permits include a general requirement that monitoring must be conducted according to approved methods under 40 CFR 136 and that sufficiently sensitive analytical methods must be used. Some of the permits indicated issues with varying detection limits being specified. Permits reviewed included narrative conditions as required in the Arizona regulations which are nearly identical to narrative requirements under federal rules.

The permits reviewed typically also included assessment-level monitoring and effluent characterization monitoring. These serve not as permit limits but as monitoring triggers to indicate when there might be a reason to reevaluate the reasonable potential due to an excursion of a WQS (“cause” under RP) for a particular parameter. The effluent characterization also serves as a data gathering mechanism to ensure that receiving waters are protected and identify any trends towards potential issues in the receiving water’s beneficial uses. All permits reviewed included standard language allowing Arizona to re-open the permit and impose limits if appropriate.

Program Strengths

Because Arizona permits are streamlined with the use of templates for most aspects, including monitoring requirements, the permits generally have robust and consistent monitoring requirements within and across permit types.

Areas for Improvement

While some of the permits reviewed included a requirement for sufficiently sensitive methods, others such as the Wilcox WWTP permit had DMR data with differing levels of detection for selenium and no requirement to require sufficiently sensitive methods for analyzing samples collected. An explicit requirement to use sufficiently sensitive methods should be included in all permits.

Action Items

Essential

- Include requirements for the use of sufficiently sensitive methods consistently in all permits. [40 CFR § 136]

D. Standard and Special Conditions

Background and Process

Federal regulations at 40 CFR 122.41 require that all NPDES permits, including NPDES general permits, contain certain “standard” permit conditions. Further, the regulations at 40 CFR 122.42

require that NPDES permits for certain categories of dischargers must contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition unless such alteration or omission results in a requirement more stringent than those in the federal regulations.

The permits reviewed for this PQR indicated that Arizona permits contained standard permit conditions. However, these standard permit conditions used by ADEQ are outdated. EPA has updated the standard permit conditions several times since the 2012 PQR. ADEQ’s permits do not reflect EPA’s current standard permit conditions.

Permits may also contain additional requirements that are unique to a particular discharger. These case-specific requirements are generally referred to as “special conditions.” Special conditions might include requirements such as: additional monitoring or special studies such as a mercury minimization plan; best management practices (see 40 CFR 122.44(k)); or permit compliance schedules (see 40 CFR 122.47). Where a permit contains special conditions, such conditions must be consistent with applicable regulations.

Permits reviewed included a variety of special conditions including development of Stormwater Pollution Prevention Plans where an individual permit incorporated a requirement that is required by the Multi-Sector/Industrial Stormwater General Permit. By incorporating such requirements in the individual discharge permit, ADEQ provided the permittee the ability to meet both sets of requirements in one permit. Other special conditions included the requirement to provide ADEQ with a list of chemicals used at a power plant along with the requirement to notify ADEQ of the use of a new chemical within one day of start of use. Another special condition required the permittee to conduct whole effluent toxicity monitoring and testing following the use of chemicals for microbial controls in a process that discharged effluent.

Program Strengths

Overall, the permits demonstrate appropriate use of “standard” and “special” permit conditions, with requirements in the permit to meet such conditions.

Areas for Improvement

ADEQ is including outdated standard permit conditions rather than EPA’s current standard permit conditions.

Action Items

<p>Essential</p>	<ul style="list-style-type: none"> • Include EPA's current standard permit conditions in all permits. [40 CFR 122.41 and 122.42] • Update the Arizona pretreatment rule to come into compliance with EPA's current pretreatment rules. [40 CFR 403]
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E. Administrative Process

Background and Process

The administrative process includes documenting the basis of all permit decisions (40 CFR 124.5 and 40 CFR 124.6); coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44); providing public notice (40 CFR 124.10); conducting hearings if appropriate (40 CFR 124.11 and 40 CFR 124.12); responding to public comments (40 CFR 124.17); and, modifying a permit (if necessary) after issuance (40 CFR 124.5). EPA discussed each element of the administrative process with Arizona, and reviewed materials from the administrative process as they related to the core permit review.

ADEQ sends pre-public notice drafts of permits and fact sheets to EPA Region 9 for review at least 30 days prior to public notice, as specified in the 2002 NPDES Memorandum of Agreement between Arizona and EPA. ADEQ addresses all comments from EPA before public noticing the draft permit.

ADEQ then conducts all required public notice procedures as required under 40 CFR 124.10 and documents this in the fact sheet in every permit reviewed.

In all individual permits reviewed except for the San Tan Generating Station and the Pinto Valley Mine permits, no response to comments document was available either as a stand-alone document or as part of the permit fact sheet. There was also no indication in the fact sheet that no comments were received. EPA had to confirm with ADEQ that it was indeed that case that no comments were received during the latest public notice comment period for the permits it reviewed. This is a notable gap in the administrative record for these permits.

Based on the response to comments documentation that was included in the administrative record for San Tan Generating Station and Pinto Valley Mine, it appears that ADEQ adequately addressed all comments received during the comment period.

Program Strengths

Due to the use of standard procedures and templates in most aspects of permit development, public review, and issuance, ADEQ's administrative process for permit issuance is robust and meets the general requirements of the appropriate regulations.

Areas for Improvement

EPA was not able to ascertain if ADEQ adequately responded to public comments since most of the permits reviewed did not include either a stand-alone response to comments document or a section in the final permit fact sheet that addressed whether any comments received were adequately responded to. This is an area that may merit further improvement.

Action Items

Recommended

- A response to comments document or documentation that comments were not received during the public comment period should be included in the final administrative record or included as part of the final fact sheet.
- Documentation of response to comments should be publicly available online.

F. Administrative Record and Fact Sheet

Background and Process

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR 124.9 identifies the required content of the administrative record for a draft permit and 40 CFR 124.18 identifies the requirements for a final permit. Authorized state programs should have equivalent documentation pursuant to the provisions of 40 CFR 123. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data; draft permit; fact sheet or statement of basis;⁴ all items cited in the statement of basis or fact sheet including but not limited to calculations used to derive the permit limitations; meeting reports; correspondence between the applicant and regulatory personnel; all other items supporting the file; the final response to comments.

Current regulations require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

EPA reviewed fact sheets and administrative records as part of the core PQR review. Each administrative record reviewed contained the permit application, final permit, and fact sheet. However, for most of the permits reviewed, EPA was not able to review draft permits, draft fact sheets, documentation of public notices, or response to comments. This was partially due to EPA not being able to visit ADEQ offices in person due to Covid-19 restrictions, as some of the requested documents may only be in hard copy and not electronically available.

However, the fact sheets provided by ADEQ generally adequately explained the basis for all permit conditions and requirements, as well as documented changes from the previous permit. ADEQ has a standard template for permit fact sheets, which facilitates both the permittee and

⁴ Per 40 CFR 124.8(a), every EPA and state-issued permit must be accompanied by a fact sheet if the permit: Incorporates a variance or requires an explanation under 124.56(b); is an NPDES general permit; is subject to widespread public interest; is a Class I sludge management facility; or includes a sewage sludge land application plan.

others conducting a review of the fact sheet, such as EPA, to easily find and locate information that is required to be provided in a fact sheet or statement of basis.

The fact sheets generally provided all the necessary information for a permit reviewer to understand the basis for the conditions and limitations included in the permit. In some instances, such as antidegradation analysis, the fact sheets were conclusionary and did not provide adequate discussion for the outcome included in the final permit. Additionally, the fact sheet did not include descriptions or calculations for how permit writers derived permit limits. Part of this may be due to the use of an RPA spreadsheet that streamlines both the analysis of whether there is reasonable potential to result in an excursion of the state's water quality standards and process of developing permit limits to ensure that the discharge does not contribute to such WQS excursions.

AZPDES fact sheets include a discussion of the basis and derivation of the draft permits. These fact sheets generally include documentation regarding the following headings:

- (I) Permittee Information
- (II) Status of Permit(s)
- (III) General Facility Information
- (IV) Receiving Water
- (V) Description of Discharge
- (VI) Status of Compliance with the Existing AZPDES Permit
- (VII) Proposed Permit Changes
- (VIII) Determination of Effluent Limitations and Assessment Levels
- (IX) Narrative Water Quality Standards
- (X) Monitoring and Reporting Requirements
- (XI) Biosolids Requirements
- (XII) Special Conditions
- (XIII) Antidegradation
- (XIV) Standard Conditions
- (XV) Administrative Information
- (XVI) Additional Information
- (XVII) Information Sources.

Program Strengths

As indicated in the discussion above, the use of templates for fact sheets and a spreadsheet that allows for automatic calculations to conduct a reasonable potential analysis (RPA) is a key strength of Arizona's permitting program. These factors make the permits and fact sheets consistent across permit writers, and also allow for both the permittee and others who review the permit and fact sheet to quickly find information about the basis for the permit as well as the limits and conditions included in the permit.

Areas for Improvement

The strength of ADEQ's program is also in some ways its weakness. The standardization of both permit and fact sheets via the extensive use of templates helps make the permits streamlined and consistent and more user friendly both for the permittee and the public. However, in some cases

the factsheet lacks sufficient detail to provide the user information to determine the basis for a requirement in the permit. In some instances where individual circumstances may warrant greater explanation of individual circumstances in developing the permit, such explanation is not provided in the fact sheet. See discussion regarding backsliding and antidegradation in section **B.3** above

Action Items

Recommended

- Permit writers should be trained to recognize when they need to provide and what they need to provide in terms of antidegradation analysis, anti-backsliding explanation, or individual permit limit calculations and derivations in the fact sheet and permit.

IV. NATIONAL TOPIC AREA FINDINGS

National topic areas are aspects of the NPDES permit program that have been determined to be important on a national scale. National topic areas are reviewed for all state PQRs. The national topics areas for this cycle of State permit quality review are: Permit Controls for Nutrients in Non-TMDL Waters, Effectiveness of POTW NPDES Permits with Food Processor Contributions, and Small Municipal Separate Storm Sewer System (MS4) Permit Requirements.

A. Permit Controls for Nutrients in Non-TMDL Waters

Background

Nutrient pollution is an ongoing environmental challenge; however, nationally, permits often lack nutrient limits. It is vital that permitting authorities actively consider nutrient pollution in their permitting decisions. Of the permits that do have limits, many are derived from wasteload allocations in TMDLs, since state criteria are often not established for nutrients or established criteria may be challenging to interpret. For this section, waters that are not protected by a TMDL are considered. These waters may already be impaired by nutrient pollution or may be vulnerable to nutrient pollution due to their hydrology and environmental conditions. For the purposes of this program area, ammonia is considered a toxic pollutant, not a nutrient.

Federal regulations at 40 CFR 122.44(d)(vii)(A) require permit limits to be developed for any pollutant that has the reasonable potential to cause or contribute to an impairment of water quality standards, whether those standards are narrative or numeric.

To assess how nutrients are addressed in the Arizona NPDES program, EPA Region 9 reviewed six permits and the nutrient criteria in the current Arizona Water Quality Standards. The permits reviewed include Central Buckeye WWTP, City of Phoenix 23rd Ave. WWTP, City of Wilcox

WWTP, San Tan SRP Generating Station, Pinto Valley Mine, and Rio De Flag WRP. These permits were chosen because there is no applicable TMDL for nutrients for the receiving waters.

Arizona has established narrative criteria and numeric targets for nitrogen and phosphorus for lakes and reservoirs based on designated use. For other waterbodies, Arizona has established site-specific numeric criteria for nitrogen and phosphorus which are expressed as an annual mean, 90th percentile, and single sample maximum concentrations. Arizona has also established a narrative criterion for nutrients in surface water which states “surface water shall not contain pollutants in amounts or combinations that 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.”

For the six permits EPA reviewed, none of the receiving waters have established numeric criteria for nutrients, so only the narrative criterion applies. EPA found that none of the permits included effluent limitations for nitrogen or phosphorus and the fact sheets did not include reasonable potential analyses against the narrative criterion. However, none of the receiving waters are identified as impaired for nutrients and ADEQ did include monitoring for nitrogen and phosphorus in four of the six permits since nutrients were identified as pollutants of concern.

Program Strengths

Monitoring requirements for total nitrogen and total phosphorus are included in the permits reviewed when nutrients are identified as pollutants of concern. This monitoring serves to characterize the effluent and inform future permit requirements.

Areas for Improvement

It is recommended that permit writers consider narrative water quality criteria for nutrients when conducting a reasonable potential analysis. ADEQ should consider narrative water quality criteria for nutrients in their reasonable potential analysis, set limits as appropriate, and record these determinations in the fact sheet.

Action Items

<p>Recommended</p>	<ul style="list-style-type: none"> • Ensure that factsheets include a reasonable potential analysis that considers state narrative water quality criteria and permits include effluent limitations for pollutants that cause, have the reasonable potential to cause, or contribute to an excursion above any state narrative water quality criteria. [§122.44(d)(1)(i)]
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B. Effectiveness of POTW NPDES Permits with Food Processor Contributions

The general pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement pretreatment standards to control

pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

Background

Indirect discharges of food processors can be a significant contributor to noncompliance at recipient POTWs. Food processing discharges contribute to nutrient pollution (e.g., nitrogen, phosphorus, ammonia) to the nation's waterways. Focusing specifically on the Food Processing Industrial Sector will synchronize PQRs with the Office of Enforcement Compliance and Assurance (OECA)'s Significant Non-compliance (SNC)/National Compliance Initiative (NCI).

The goal of the PQR was to identify successful and unique practices with respect to the control of food processor discharges by evaluating whether appropriate controls are included in the receiving POTW NPDES Permit and documented in the associated Fact Sheet or Statement of Basis; as well as by compiling information to develop or improve permit writers' tools to be used to improve both POTW and industrial user compliance.

The PQR also assessed the status of the pretreatment program in Arizona as well as specific language in POTW NPDES permits. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR 122.42(b) (POTW requirements to notify Director of new pollutants or change in discharge);
- 40 CFR 122.44(j) (Pretreatment Programs for POTWs);
- 40 CFR 403.8 (Pretreatment Program Requirements: Development and Implementation by POTW), including the requirement to permit all SIUs;
- 40 CFR 403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval);
- 40 CFR 403.12(i) (Annual POTW Reports); and
- 40 CFR 403.18 (Modification of POTW Pretreatment Program).

The national pretreatment program is a component of the NPDES program and is a cooperative effort of federal, state, and local environmental regulatory agencies. ADEQ is authorized to implement the pretreatment programs. Above, in part III.D., Standard and Special Conditions, EPA identified an essential action item regarding the need to update the Arizona pretreatment rule to come into compliance with the EPA promulgated pretreatment rule.

A total of 19⁵ POTWs in Arizona have approved POTW pretreatment programs that regulate 329 significant industrial users (SIUs). In addition, 17 SIUs discharge to POTWs without approved pretreatment programs (see table below).

⁵ The number of approved pretreatment programs was provided by ADEQ staff.

SIU Description	Number of SIU(s) in Approved Pretreatment Programs ¹	Number of SIU(s) in Non-Approved Pretreatment Programs ²	Total
CIU ³	150	5	155
Non-CIU	179	12	191
Total SIUs	329	17	346

¹[Data source: Government Performance and Results Act (GPRA) data as presented at the April 2016 EPA National Meeting.]

²[Data source: ICIS data pull from December 2016]

³CIU = Categorical Industrial User

ADEQ’s Inspections and Compliance Unit performs pretreatment compliance inspections and audits as well as pretreatment program needs assessments. Staff conduct pretreatment program reviews, modifications, and approvals, as well as review of pretreatment program annual reports and local limits. This unit works together with the permitting staff to ensure that appropriate pretreatment language is included in the permits. The Inspection and Compliance Unit is available to consult with the Permitting group on permit language when necessary. The Inspection and Compliance Unit reviews AZPDES permit pretreatment language upon request, but not by default, during the permit issuance process.

According to ADEQ staff, to identify SIUs in POTWs without approved programs, ADEQ has requested, for selected AZPDES permits, that the permittee notify ADEQ and submit documentation for any new SIUs. In addition, ADEQ has met with POTWs and SIUs upon request to discuss proposed facility processes and pretreatment additions, pretreatment programs, and documentation requirements.

It appears that not all approved pretreatment programs have been entered into Integrated Compliance Information System–National Pollutant Discharge Elimination System (ICIS-NPDES). A query performed in ICIS-NPDES on May 12, 2020, indicated that there were 10 approved pretreatment programs in Arizona. However, based on the information ADEQ provided to EPA Region 9, the correct number of approved pretreatment programs is 19. EPA Region 9 is aware of the ongoing issue regarding communication between ADEQ’s data system and ICIS-NPDES. It is understood that ADEQ is aware of these issues and is working towards a solution; however, ADEQ is required to resolve this issue so that ICIS-NPDES contains accurate information and to comply with ADEQ’s program delegation requirements.

The PQR for this topic area was based on review of NPDES permits, permit applications, and fact sheets. The table below identifies the four NPDES permits selected by EPA Region 9 for this PQR national topic area. Permit selection was based on the list of POTWs that were part of EPA’s core PQR permit review list that were known to have food processors based on review of NPDES permit applications as well as Google map searches for food processors in Arizona.

Permittee	Permit No.	Approved Pretreatment Program?	Average Design Flow (MGD)	No. of SIUs ¹	No. of Food Processors
City of Phoenix (23 rd Avenue WWTP)	AZ0020559	Yes	63	33	4 ¹

Permittee	Permit No.	Approved Pretreatment Program?	Average Design Flow (MGD)	No. of SIUs ¹	No. of Food Processors
City of Flagstaff – Water Services (Rio de Flag WRP)	AZ0023639	Yes	4	4	1 ¹
City of Bisbee (San Jose WWTP)	AZ0026077	No	1.22	0	1 ²
City of Williams	AZ0025755	No	0.98	0	1 ²

¹ Based on the information provided in the permit application.

² Based on an internet search using Google Maps.

Program Strengths

All NPDES permits reviewed in this topic area include the federal standard condition requirement for notification and impact assessment of significant changes in industrial flow or character at 40 CFR 122.42(b).

All NPDES permits reviewed include secondary treatment standards in accordance with 40 CFR 133.102.

POTWs with Approved Pretreatment Programs

The pretreatment conditions at 40 CFR Part 403 are incorporated into the POTW NPDES permits by reference.

The permits require the POTWs to implement an approved Pretreatment Program per 40 CFR 403.8.

The permits require submittal of an annual pretreatment report per 40 CFR 403.12(i).

The NPDES permit for Phoenix requires effluent monitoring for pollutants of concern from food processing facilities including monitoring for total Kjeldahl nitrogen (TKN), nitrate/nitrite as nitrogen (N), phosphorus quarterly, and for ammonia twice per month. The permit requires daily total suspended solids (TSS) and carbonaceous biochemical oxygen demand (CBOD₅) monitoring in the influent and effluent of the WWTP.

The NPDES permit for Flagstaff requires effluent monitoring for pollutants of concern including TKN and nitrate/nitrite as N quarterly, and for ammonia twice per month. The permit requires annual monitoring of phosphorus in the effluent in years 2020, 2021, and 2022. The permit requires monitoring twice per month of biochemical oxygen demand (BOD) and TSS in the influent and effluent of the WWTP.

POTWs Without Approved Pretreatment Programs

Ammonia, BOD, TSS, and nutrients are identified as pollutants of concern for food processing facilities. The NPDES permit for Bisbee contains effluent limitations for ammonia. The permit also requires monitoring twice per month of BOD and TSS in the influent and effluent of the

WWTP. The permit requires monitoring twice per month of ammonia and quarterly monitoring of TKN, nitrate/nitrite as N, and phosphorus in the effluent.

The NPDES permit for Williams contains monthly monitoring requirements for BOD and TSS in the influent and effluent of the WWTP. The permit requires monthly sampling of ammonia, quarterly sampling of TKN and nitrate/nitrite as N, and semiannual sampling of phosphorus in the effluent.

Areas for Improvement

None of the NPDES permits reviewed specify a timeframe for the POTWs to provide “adequate notice to the Director” under 40 CFR 122.42(b) concerning new introduction of pollutants to the POTW from an industrial user, substantial change in the volume or character of the indirect discharge, etc. EPA recommends that the permits be revised to define the timeframe for “adequate” notice. This will help ensure that timely notification is given to ADEQ regarding POTW changes that may require the POTW to establish a new pretreatment program or make changes to an existing pretreatment program.

POTWs with an Approved Pretreatment Program

Not all permit applications reviewed included information regarding SIUs. EPA recommends that ADEQ require NPDES permit applicants to identify SIUs in their permit application.

The permits and fact sheets for the POTWs with approved POTW pretreatment programs do not identify the pretreatment program approval and modification dates. EPA recommends that the permit identify the initial program approval, most recent modification date and most recent local limits to reference the currently approved and enforceable pretreatment program.

The NPDES permits for the POTWs with approved pretreatment programs do not contain effluent limitations for nitrogen, phosphorus, or ammonia; these are all pollutants of concern for food processing facilities. EPA recommends that the permit writers consider strengthening the permit by including effluent limitations for pollutants of concern expected to be contributed by industrial dischargers, in line with AZPDES RPA procedures.

POTWs Without an Approved Pretreatment Program

EPA did not identify any areas of improvement.

Action Items

Essential

- Update ICIS-NPDES to contain accurate information regarding approved pretreatment programs. [40 CFR § 127]
- Permit writers are required to include requirements for POTWs with approved pretreatment programs to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance. [40 CFR § 122.44(j)(2)(ii)]

Recommended

- ADEQ should require NPDES POTW permit applicants to identify SIUs in their permit application.
- Permit writers should revise POTW permits to specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW.
- Permit writers should specify the pretreatment program approval or modification dates (including most recent local limits) in fact sheets to reference the currently approved and enforceable pretreatment program.
- Permit writers should consider including effluent limitations in POTW permits for additional parameters expected to be contributed by industrial dischargers in line with AZPDES reasonable potential procedures.

C. Small Municipal Separate Storm Sewer System (MS4) Permit Requirements

Introduction

The NPDES program requires stormwater discharges from certain MS4s, industrial activities, and construction sites to be permitted. Generally, EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for small MS4s, industrial activities, and construction activities. Arizona has eight individual Phase I MS4s, one general permit for Phase II MS4s that covers 48 small MS4s, and a construction general permit and two general permits covering stormwater discharges from industrial activities, one covering mining and the other covering all other industrial discharges.

EPA Region 9 selected General permit No. AZG2016-002 for review, which covers discharges from Phase II small MS4s. EPA reviewed the permit for consistency with the Phase II stormwater permit regulations. The findings of EPA's review of the small MS4 Phase II general permit are found immediately below. EPA also reviewed two MS4 Phase I individual permits and the general permit for stormwater discharges associated with industrial activity, except for

mining activities (seen Section V. A). The four permits reviewed serve to illustrate the strengths as well as areas of improvement for ADEQ's stormwater permitting as a whole.

General permit No. AZG2016-002 for Discharges from Phase II Small MS4s in the State of Arizona

Background

Arizona's small MS4 general permit covers discharges from all traditional small MS4s in the State, such as cities and counties, as well as non-traditional MS4s such as universities and military bases. The permit does not cover discharges on Indian lands.

Although the Arizona small MS4 permit was issued prior to the effective date of the MS4 Remand Rule,⁶ Region 9 and ADEQ had already begun issuance of MS4 permits with an eye toward including permit requirements consistent with the principles that would later be included in the Remand Rule. Accordingly, Region 9 reviewed the small MS4 general permit for consistency with the updated regulations.

As explained in the MS4 Remand Rule, states can either issue a comprehensive general permit, which is like a traditional general permit, or issue a two-step permit which establishes some requirements in a general permit and others applicable to individual MS4s through a second proposal and public comment process. The ADEQ permit provides for public review of notices of intent (NOIs) and best management practices proposed by permittees to meet the requirements of the permit; as such, it would be considered the two-step process.

Program Strengths

One of the fundamental goals of the Remand Rule was to ensure adequate opportunity for public participation when general permits are issued for small MS4s and to ensure adequate State review of submittals under a general permit. The fact sheet for the ADEQ permit indicates that ADEQ will review NOIs and proposed BMPs that are submitted for adequacy and will provide an opportunity for public comment/public hearing on NOIs, consistent with the intent of the Remand Rule. For additional clarity, the fact sheet should indicate the action ADEQ intends to take on an NOI (such as discharge authorization), but in general the permit ensures adequate public participation and State review of NOIs.

For several minimum control measures, the permit provides additional time for new permittees brought into the program from the 2010 census to come into compliance with the requirements of the permit. The deadlines are consistent with the deadlines found in permits for new permittees across the nation.

Areas for Improvement

EPA's final e-reporting rule requires that MS4 annual reports be submitted electronically no later than December 21, 2025. This deadline should be included in the ADEQ small MS4 permit.

⁶81 FR 89320, December 9, 2016

The permit should include all updated requirements for pollution prevention and the requirements should be set forth in terms that are clear, specific, and measurable. Due to enforceability concerns, the Remand Rule recommends that permits avoid language that requires implementation of permit provisions “if practicable” or that permittees “should” implement or “consider” certain BMPs.

EPA encourages the development of Asset Management Plans (AMPs) as a useful tool for ensuring consistent performance of water infrastructure systems while minimizing the costs associated with the operation of these systems. Any future reissuance of the permit should include requirements for an Asset Management Plan (AMP).

EPA encourages the development and implementation of trash management plans in MS4 permits given growing concerns regarding trash in receiving waters. Although some of the BMPs in the current general permit address trash in general terms, we recommend ADEQ consider requirements for the development and implementation of a specific plan to reduce discharges of trash from the MS4s in any future reissuance.

Action Items

Essential	<ul style="list-style-type: none"> Ensure that EPA’s final e-reporting rule deadline is included in the ADEQ small MS4 permit. [40 CFR 127.16(a)] Permits should include all updated requirements for pollution prevention and the requirements should be set forth in terms that are clear, specific, and measurable. [40 CFR 122.34(a)]
Recommended	<ul style="list-style-type: none"> Any future reissuance of the General Permit for Phase II Small MS4s should include requirements for an Asset Management Plan (AMP). ADEQ should consider including a trash management plan in MS4 permits. Fact sheets should indicate the action ADEQ intends to take on an NOI.

V. REGIONAL TOPIC AREA FINDINGS

A. General Stormwater Permits and Phase I MS4s

This section reviews the following permits:

- Permit No. AZS000018-2015 for discharges from the [ADOT](#) MS4 and draft permit No. AZS000001 for discharges from the City of Tucson [MS4](#)

- General Permit No. AZMSG2019-001 for discharges associated with industrial activity, except for mining activities

Background

EPA reviewed the three stormwater permits listed above to evaluate Phase I MS4 permits and general stormwater permits issued by ADEQ.

Program Strengths (Phase I MS4 Permits)

Although not specifically required by the stormwater regulations, the two MS4 permits include a retrofit plan for the installation of additional controls for pollutants in runoff from existing developed areas which goes beyond the minimum requirements of the regulations and expedites the reduction of pollutants in the discharges from the existing MS4s operated by the permittees. It is a plus that the permits emphasize green infrastructure controls in existing developed areas.

The MS4 permits also include all the basic requirements for an MS4 permit as set forth in EPA's stormwater regulations. Although the permits are for Phase I MS4 permittees the requirements of the permits are set forth in terms that somewhat resemble the requirements of a Phase II MS4 permit. This is consistent with EPA's goal of eventually attaining a seamless program between Phase I and Phase II MS4 permittees.

The ADOT permit requires that an updated stormwater management program (SWMP) be submitted within 12 months of the effective date of the permit. The fact sheet also indicates that ADEQ will post the updated SWMP on ADEQ's website to solicit public comments for a minimum of 30 days and consider public comments in its final decision concerning approval of the updated SWMP. Such procedures are important to ensure an opportunity for public participation. The draft City of Tucson permit adopts an alternative approach in which all enforceable permit requirements are incorporated directly into the permit and are available for public review and comment when the draft permit is public noticed.

Areas for Improvement (Phase I MS4 Permits)

EPA encourages the development of Asset Management Plans (AMPs) as a useful tool for ensuring consistent and efficient performance of water infrastructure systems. Future reissuances of the permits should include requirements for an AMP.

EPA recommends the development and implementation of trash management plans in MS4 permits given growing concerns regarding trash in receiving waters. Although some of the BMPs in the MS4 permits address trash in general terms, we recommend ADEQ consider requirements for the development and implementation of specific plans to reduce discharges of trash from the MS4s.

The stormwater regulations emphasize that MS4 permit requirements must be expressed in "clear, specific, and measurable" terms to ensure permit enforceability. To further improve permit clarity and enforceability, the ADOT permit should include quantitative post-development requirements to control pollutants in runoff from new ADOT projects after construction has been completed. Specific design criteria to achieve this goal should be developed and included in the next permit. Further, although the ADOT permit requires that

ADOT implement a maintenance and inspection program for the MS4, it lacks details such as the required inspection and maintenance frequencies, which should be included when the permit is reissued.

Several of the basic required programs in the MS4 permits refer to escalating enforcement procedures that are not clearly described in the permits. We recommend that an enforcement response plan (ERP) be required for all MS4 permits that would elaborate upon and consolidate the procedures that would be followed to ensure compliance with the permit. Such a plan is included in the ADOT MS4 permit as well as ADEQ's general permit for Phase II small MS4s. However, an ERP is absent from the draft City of Tucson MS4 permit and should be included in future permits.

Program Strengths (Industrial General Permit)

The ADEQ general permit closely follows the requirements of EPA's 2015 MSGP; as such, the strengths of EPA's permit are therefore found in the Arizona permit including requirements for detailed BMP and monitoring for the same industrial sectors as identified in the EPA permit. These requirements enhance the effectiveness, clarity and enforceability of the permit.

Permittees seeking authorization for a new discharge to an impaired water, or to a tributary within 2.5 miles upstream of an impaired water, or for a new or expanded discharge to a tributary within 2.5 miles upstream of an Outstanding Arizona Water must submit a copy of the SWPPP to ADEQ for a 30-day review. It is to ADEQ's credit that it is willing to take this extra step to ensure the protection of these sensitive receiving waters.

The ADEQ permit does not require the submittal of annual reports by permittees. Instead, the ADEQ permit requires submittal of Corrective Action Reports and Control Measure Assessment Reports for cases where such reports are necessary (such as when an action level is exceeded). This is a thoughtful revision that may be more effective in meeting the goals of the permit by focusing ADEQ resources on facilities and discharges that may be of particular environmental significance.

Areas for Improvement (Industrial General Permit)

The ADEQ permit provides that an operator may submit a No Discharge Certification rather than obtaining coverage under the permit. However, neither the fact sheet nor the permit provides any clarification regarding how to qualify for a No Discharge Certification. EPA notes that any discharge of stormwater associated with industrial activity would need NPDES permit coverage; this would include overflow of containment that might only occur in the event of a very large storm.

Action Items

Essential

- MS4 permit provisions must be written in clear, specific, and measurable terms. [40 CFR § 122.34(a)]
- Specific inspection and maintenance frequencies must be included in MS4 permits, as applicable. [40 CFR § 122.34(a)]

Recommended

- Future reissuances of MS4 permits should include the requirement for an Asset Management Plan (AMP).
- ADEQ should consider include a trash management plan in MS4 permits.
- Specific design criteria to control pollutants in runoff after construction has concluded should be included in permits, as applicable.
- Enforcement response plan (ERP) requirements should be included in MS4 permits, as applicable.
- The requirements to qualify for a No Discharge Certification should be clarified in permit documentation, as applicable.

B. TMDL Implementation

Section 40 CFR 122.44(d)(1)(vii)(B) requires that effluent limits established to protect a water quality criterion are consistent with the assumptions and requirements of any applicable wasteload allocation (WLA). A WLA is the load of the pollutant that is allocated to this specific facility so the water quality standards will be met in the water body, and that water body will no longer be impaired for that pollutant. WLAs are developed as a part of a Total Maximum Daily Load (TMDL) (see 40 CFR 130.7). Properly implementing TMDLs and their applicable WLAs is important for the improvement of water quality, as TMDLs are used to improve the water quality of impaired water bodies. The focus of the TMDL implementation review is to verify that permits and fact sheets include accurate limits based on applicable TMDLs and WLAs. EPA reviewed three permits for this regional review topic. However, only two permits have applicable and approved TMDLs; the TMDL for the other permit had not been finalized at the time of permit issuance. The permits reviewed for TMDL implementation are Pinto Valley Mine, Page Springs Fish Hatchery, and Central Buckeye WWTP.

A Pinto Creek TMDL for copper was approved in 2001. This TMDL includes a wasteload allocation of 0.012 kg/day for Pinto Valley Mine NPDES Outfall 005. This WLA was established equal to the projected load from Outfall 005. Since the development and approval of the Pinto Creek TMDL, ADEQ has developed site-specific criteria for Pinto Creek that was approved by EPA in 2016. The permit for Pinto Valley Mine, issued in 2018, includes effluent

limitations of 25 ug/L as a monthly average, and 50 ug/L as a daily maximum. As stated in the factsheet, these limits are based on the site-specific chronic criterion of 34 ug/L. Effluent limit calculations are not provided in the factsheet. The updated draft Pinto Creek TMDL, which incorporates the site-specific criteria for Pinto Creek, has not been approved by EPA. Thus, the Pinto Valley Mine NPDES permit is required to implement the WLA of 0.012 kg/day, as per the 2001 Pinto Valley TMDL for copper. The Pinto Valley TMDL was not appropriately implemented in the Pinto Valle Mine permit.

A TMDL was approved for nutrients for Oak Creek in 1999. The TMDL lists WLAs for Page Springs Fish Hatchery for nutrients: 55.20 kg/day for phosphorus, and 9.35 kg/day for nitrogen. These WLAs are implemented as permit limits: 55.20 kg/day phosphorus and 9.35 kg/day nitrogen as annual means, and 216 kg/day phosphorus and 26 kg/day nitrogen as daily maximum limits. Effluent limit calculations are not provided in the factsheet. Concentration limits are also established to implement applicable water quality standards. A TMDL for *E. coli* was also developed and approved for Oak Creek; however, hatcheries are given a WLA of zero and are not considered to be contributing to the *E. coli* impairment in Oak Creek.

A TMDL for boron and selenium was developed for the Gila River and approved by EPA in 2015. The TMDL lists WLAs for Central Buckeye WWTP and permit limit recommendations. The recommended permit limits for boron listed in the TMDL are 1231 ug/L as an average monthly limit, and 1682 as a maximum daily limit. The recommended limits for selenium listed in the TMDL are 2 ug/L as an AML and 4 ug/L as a maximum daily limit. These limits are directly applied in the permit.

Program Strengths

The permits and factsheets reviewed for Page Springs Fish Hatchery and Central Buckeye WWTP clearly explain the applicable WLAs and establish effluent limitations that appear to implement the WLAs appropriately.

Areas for Improvement

The permit for Pinto Valley Mine does not implement the 2001 Pinto Creek TMDL appropriately. It is essential that permit writers develop effluent limitations consistent with the assumptions and requirements of any available WLA.

Documenting the calculation of permit limits from applicable wasteload allocations in the fact sheet is essential for transparency and documentation. This enables members of the public and future permit writers to determine how the permit writer calculated the permit limits.

Action Items

Essential

- Develop effluent limitations consistent with the assumptions and requirements of any available wasteload allocation approved by EPA. [40 CFR 122.44(d)(1)(vii)(B)]
- Include limit calculations in the fact sheet when an effluent limitation is derived from an applicable WLA. [40 CFR § 122.44(d)(1)(vii)(B)]

VI. REVIEW OF PROGRESS ON ESSENTIAL ACTION ITEMS FROM LAST PQR

This section provides a summary of the main findings from the last PQR and provides a review of the status of the State’s efforts in addressing the action items identified during the last PQR, conducted in 2012. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that address deficiencies or noncompliance with respect to federal regulations as “Category 1”. EPA is now referring to these action items going forward, as Essential. In addition, previous PQR reports identified recommendations to strengthen the state’s program as either “Category 2” or “Category 3” action items. EPA is consolidating these two categories of action items into a single category: Recommended.

Table 1. Essential Action Items Identified During Last PQR (2012)

Program Area	Action Item Title	Status Update
Basic Facility Information and Permit Application	To ensure permit terms do not exceed five years, as required by 40 CFR 122.46, EPA will meet with ADEQ to ensure that ADEQ will implement quality assurance/quality control (QA/QC) measures in the permit development process.	(Resolved) ADEQ and EPA have a standing meeting to discuss AZPDES implementation. ADEQ frequently solicits advice from RP analysis to novel industrial permit issues to MS4 reissuance matters.
Technology-based Effluent Limitation	To ensure that applicable ELGs are fully implemented in final permits as required by 40 CFR 405-471, EPA will meet with ADEQ to ensure permit writers and managers understand the requirement to incorporate ELG requirements.	(Resolved) ADEQ has a standing meeting AZPDES permit writing meeting with EPA.
Pretreatment	As required by 40 CFR 403, ADEQ must update its pretreatment regulation to come into compliance with the streamlining rule.	(Not started) ADEQ has not met this requirement.

VII. RECOMMENDED ACTION ITEMS FROM LAST PQR

This section provides a summary of the recommendations from the last PQR, conducted in 2012, and notes any State efforts to act on those recommendations. As discussed previously, during the 2012-2017 PQR cycle, EPA referred to action items that are recommendations to strengthen the state’s program as either “Category 2” or “Category 3” action items. EPA is consolidating these two categories of action items into a single category: Recommended.

For the purpose of this summary, “resolved” indicates that ADEQ and EPA have taken the action prescribed in the action item (e.g. set up a standing meeting between ADEQ and EPA), and the action is ongoing.

Table 2. Recommended Action Items Identified During 2012 PQR

Program Area	Action Item Title	Status
Basic Facility Information and Permit Application	To ensure that all permit applications include appropriate treatment information, process flow diagrams, and data and that application information remains available in the permit files, EPA will meet with ADEQ to clarify how these requirements will be addressed during permit QA/QC review.	(Resolved)
Water Quality-Based Effluent Limitations	EPA will meet with ADEQ to ensure that permit writers and managers are aware of the requirements to include in permit files the most current RP and limits spreadsheets (or properly reference such information if located elsewhere) and to incorporate final limits consistent with the calculations in the spreadsheets or otherwise explained.	(In progress) ⁸
Administrative Process	EPA will meet with ADEQ to ensure that comments and responses to comments are included in the permit files, if applicable.	(In progress) ⁸
Documentation	EPA will meet with ADEQ to ensure that facility categorization information clearly addresses whether a facility or discharge is a new or existing source where applicable.	(Resolved)
	EPA will meet with ADEQ to ensure that where limits are developed on a case-by-case basis based on BPJ, permit documentation describes the basis for such limits and consistency with 40 CFR 125.3(d).	(In progress) ⁷
	EPA will meet with ADEQ to recommend including in the fact sheet or file a justification for internal monitoring points.	(Resolved)

Program Area	Action Item Title	Status
	EPA will meet with ADEQ to recommend including in relevant fact sheets additional discussion of whether and how antidegradation requirements apply to a specific permit and of the level of antidegradation review conducted.	(In progress) ⁷
	EPA will meet with ADEQ to recommend including in relevant fact sheets additional discussion of how the anti-backsliding requirements at 40 CFR 122.44(l) were satisfied.	(In progress) ⁸

VIII. ACTION ITEMS FROM FY 2018–2022 PQR CYCLE

This section provides a summary of the main findings of the PQR and provides proposed action items to improve Arizona’s NPDES permit programs, as discussed throughout sections III, IV, and V of this report.

The proposed action items are divided into two categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and states.

- Essential Actions** - Proposed “Essential” action items address noncompliance with respect to a federal regulation. The permitting authority is expected to address these action items in order to come into compliance with federal regulations. As discussed earlier in the report, prior PQR reports identified these action items as Category 1. Essential Actions are listed in Table 3 below.

⁷ EPA holds regular meetings with ADEQ regarding these action items; however, the 2022 PQR found these action items are not resolved. These action items can be resolved via the recommended actions found in Table 5.

⁸ EPA holds regular meetings with ADEQ regarding these action items; however, the 2022 PQR found these action items are not resolved. These action items can be resolved by addressing action items 6 and 7 in Table 4 and updating the ADEQ permit template to include a reference to the most current RP and limits spreadsheets.

- Recommended Actions** - Proposed “Recommended” action items are recommendations to increase the effectiveness of the state’s or Region’s NPDES permit program. Prior reports identified these action items as Category 2 and 3. Recommended Actions are listed in Table 4 below.

The following tables summarize only those action items that were identified in Sections III, IV, and V of the report.

Table 3. Essential Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)	Citation
TBELs for Non-POTW Dischargers	1. Include a discussion in the fact sheet regarding how and why case-by-case TBELs were established.	40 CFR § 125.3(c)(2)
Final Effluent Limitations and Documentation of Effluent Limitations Development	2. Complete an antidegradation analysis for all changes that result in less stringent limits and document it in the final fact sheet.	40 CFR § 131.12
Establishing Monitoring and Reporting Requirements	3. Include requirements for the use of sufficiently sensitive methods consistently in all permits.	40 CFR § 136
Standard and Special Conditions	4. Include EPA's current standard permit conditions in all permits.	40 CFR § 122.41 and 122.42
	5. Update the Arizona pretreatment rule to come into compliance with EPA's current pretreatment rules.	40 CFR § 403
Pretreatment: Food Processing Sector	6. Update ICIS-NPDES to contain accurate information regarding approved pretreatment programs.	40 CFR § 127
	7. Include requirements for POTWs with approved pretreatment programs to provide a written technical evaluation of the need to revise local limits following permit issuance or reissuance.	40 CFR § 122.44(j)(2)(ii)
Municipal Separate Storm Sewer Systems (MS4s)	8. Ensure that EPA’s final e-reporting rule deadline is included in the ADEQ small MS4 permit. ⁹	40 CFR § 127.16(a)
	9. Permits should include all updated requirements for pollution prevention and the requirements should be set forth in terms that are clear, specific, and measurable.	40 CFR § 122.34(a)

⁹ ADEQ recently reissued the ADEQ small MS4 permit in September 2021 which included EPA’s final e-reporting rule deadline.

General Stormwater Permits and Phase I MS4s	10. MS4 permit provisions must be written in clear, specific, and measurable terms.	40 FR § 122.34(a)
	11. Specific inspection and maintenance frequencies must be included in MS4 permits, as applicable.	40 CFR § 122.34(a)
TMDL Implementation	12. Develop effluent limitations consistent with the assumptions and requirements of any available wasteload allocation approved by EPA.	40 CFR § 122.44(d)(1)(vii)(B)
	13. Include limit calculations in the fact sheet when an effluent limitation is derived from an applicable WLA.	40 CFR 122.44(d)(1)(vii)(B)

Table 4. Recommended Action Items from FY 2018-2022 PQR Cycle

Topic	Action(s)
TBELs for POTWs	1. Consider including limit calculations for mass-based TBELs for POTWs in fact sheets.
Reasonable Potential	2. The calculation of CVs and reasonable potential multipliers should be fully consistent with ADEQ internal procedures and EPA's Technical Support Document for Water Quality-based Toxics Control (EPA, 1991).
	3. Consider including reasonable potential multipliers in the reasonable potential table in Part VIII of the fact sheet.
	4. The ADEQ internal RPA procedure should be updated to ensure the decision to include monitoring data from previous permit terms in the RPA is not dependent on the results of the RPA.
Final Effluent Limitations and Documentation of Effluent Limitations Development	5. Consider documenting WQBEL calculations in the fact sheet.
	6. Provide a more detailed rationale in the factsheet when a limit is removed, including a discussion of the results of the reasonable potential analysis and an anti-backsliding analysis under Section 304(a).
Administrative Process	7. A response to comments document or documentation that comments were not received during the public comment period should be included in the final administrative record or included as part of the final fact sheet.
	8. Documentation of response to comments should be publicly available online.

Administrative Record and Fact Sheet	9. Permit writers should be trained to recognize when they need to provide and what they need to provide in terms of antidegradation analysis, anti-backsliding explanation, or individual permit limit calculations and derivations in the fact sheet and permit.
Permit Controls for Nutrients in Non-TMDL Waters	10. Ensure that factsheets include a reasonable potential analysis that considers state narrative water quality criteria and permits include effluent limitations for pollutants that cause, have the reasonable potential to cause, or contribute to an excursion above any state narrative water quality criteria. [§122.44(d)(1)(i)]
Pretreatment: Food Processing Sector	11. ADEQ should require NPDES POTW permit applicants to identify SIUs in their permit application.
	12. Permit writers should revise POTW permits to specify the timeframe for adequate notice regarding the change in quality or quantity in effluent discharge to the POTW.
	13. Permit writers should specify the pretreatment program approval or modification dates (including most recent local limits) in fact sheets to reference the currently approved and enforceable pretreatment program.
Municipal Separate Storm Sewer Systems (MS4s)	14. Permit writers should consider including effluent limitations in POTW permits for additional parameters expected to be contributed by industrial dischargers in line with AZPDES reasonable potential procedures.
	15. Any future reissuance of the General Permit for Phase II Small MS4s should include requirements for an Asset Management Plan (AMP).
	16. ADEQ should consider including a trash management plan in MS4 permits.
General Stormwater Permits and Phase I MS4s	17. Fact sheets should indicate the action ADEQ intends to take on an NOI.
	18. Future reissuances of MS4 permits should include the requirement for an Asset Management Plan (AMP).
	19. ADEQ should consider including a trash management plan in MS4 permits.
	20. Specific design criteria to control pollutants in runoff after construction has concluded should be included in permits, as applicable.
	21. Enforcement response plan (ERP) requirements should be included in MS4 permits, as applicable.
	22. The requirements to qualify for a No Discharge Certification should be clarified in permit documentation, as applicable.

Table 5. EPA Recommendations to Address Essential Action Items from FY 2018-2022 PQR Cycle¹⁰

EPA Recommendations to Address Essential Action Items	
1. Update the ADEQ permit template	The permit and factsheet templates should be updated to include: <ul style="list-style-type: none"> • Requirements for the use of sufficiently sensitive methods • Updated standard permit conditions • Requirements for POTWs with approved pretreatment programs to provide a written technical evaluation of the need to revise local limits
2. Document antidegradation analysis, case-by-case TBEL development, and TMDL implementation in fact sheet.	Include specific instructions and example language in the ADEQ fact sheet template for documenting antidegradation analysis, case-by-case TBELs, and implementation of WLAs.
3. Update the Arizona pretreatment rule.	Update the Arizona pretreatment rule to come into compliance with the EPA promulgated pretreatment rule.
4. Update NPDES-ICIS to contain accurate information regarding approved pretreatment programs.	Update NPDES-ICIS to contain accurate information regarding approved pretreatment programs.
5. Update e-reporting language upon reissuance of the ADEQ small MS4 permit.	Include EPA’s final e-reporting rule deadline in the ADEQ small MS4 permit upon reissuance of the permit.

¹⁰ EPA is open to alternative approaches to address the essential action items at ADEQ's request.