ARIZONA Auditor General
Making a Positive Difference

Arizona Department of Environmental Quality

Water Quality Protection Responsibilities

42-Month Followup of Report 21-116

The September 2021 Arizona Department of Environmental Quality—Water Quality Protection Responsibilities performance audit was the first of 2 audit reports of the Department we issued as part of its sunset review. The second audit found that although the Department met its statutory objective and purpose in some areas we reviewed, it had not complied with State conflict-of-interest requirements and did not fully implement some key information technology security policies and requirements. The second audit also provided responses to the statutory sunset factors.[1]

This September 2021 performance audit found that the Department had not developed all required aquifer water quality standards, conducted key ongoing groundwater monitoring of the State's aquifers, monitored for agricultural pesticides in groundwater and surrounding soil, or reduced the number of impaired surface waters in the State, limiting its ability to keep these waters safe from pollution. We made **13** recommendations to the Department.

[1] For more information on the second performance audit that we issued as part of the Department's sunset review, including the applicable follow-up report, see Report 21-117.

Department's status in implementing 13 recommendations

Implementation status	Number of recommendations
Implemented	7 recommendations
In process	6 recommendations

We will conduct a 54-month followup in early 2026 with the Department on the status of the recommendations that have not yet been implemented.

Recommendations to the Department

Finding 1: Department has not developed all required aquifer water quality standards, potentially putting private well users at risk of having unsafe water

1. The Department should adopt aquifer water quality standards (AWQS) in rule to match federal drinking water standards by the end of fiscal year 2023, consistent with its plans, or a State alternative AWQS, for the 8 contaminants that do not have a developed or updated AWQS, as required by statute.

- Status: **Implementation in process.**

  In our initial followup, we reported that the Department had performed a workload analysis to assess the cost of developing AWQS and worked with the Legislature to obtain the needed resources to adopt AWQS. Since the initial followup, the Department filed a notice of rulemaking with the Arizona Secretary of State in June 2023 and held meetings with stakeholders in September and December 2023 to obtain feedback on proposed rules. The Department submitted the proposed rules to the Governor's Regulatory Review Council (GRRC) for review in March 2025, and the Department reported that GRRC has scheduled its review of the Department's proposed rules in May 2025. Once this review is completed and GRRC has approved the rules, the Department will be able to finalize the rules and reported it anticipates doing so by the end of fiscal year 2025. Finally, according to the Department, the scope of the rulemaking was revised from 8 contaminants to 7 because 1 of the contaminants cited in the audit report was determined to already have an adopted AWQS under a synonymous name representing the same molecular formula. We will further assess the Department's implementation of this recommendation during our next followup.

2. The Department should perform a workload analysis to assess the cost of developing AWQS. This assessment should include a documented analysis of its workload, and any available staff resources, and then identify the resources it needs to develop AWQS.

- Status: **Implemented at 12 months.**

3. The Department should, based on the assessment performed in Recommendation 2, work with the Legislature to seek a statutory change by the 2022 legislative session to authorize funding from the Water Quality Fee Fund (WQFF) and obtain the needed resources from the WQFF to develop AWQS, such as modifying the fees that contribute to the WQFF to increase the amount of revenues generated for this Fund.

- Status: **Implemented at 42 months.**

  As indicated in our initial followup, statutory changes enacted by Laws 2022, Ch. 204, expanded the allowable uses of the WQFF for various water quality protection responsibilities, such as for developing AWQS and monitoring agricultural pesticides in groundwater and the surrounding soil in the State. These changes also authorized the Department to increase fees that contribute to the WQFF in rule. The Department finalized a rulemaking in August 2023 that increased the fees that contribute to the WQFF. As a result of this fee increase, the Department reported generating an additional approximately $2.6 million in fee revenues between August 2023 and July 2024. The Legislature also appropriated $9.5 million in State general fund monies to the WQFF in fiscal year 2024 to support surface water, groundwater, and drinking water programs. According to Department documentation, the Department used these additional monies to contract for assistance in developing AWQS, collect and analyze soil and groundwater samples, and analyze and develop Total Maximum Daily Loads (TMDLs) (see recommendations 6, 9, and 11). Further, beginning in October 2021, the Department also used these monies to hire additional staff, including 6 TMDL specialists and 3 groundwater monitoring staff.

Finding 2: Department has not conducted key groundwater monitoring responsibilities, limiting its ability to keep groundwater safe

4. The Department should conduct statutorily required ambient groundwater monitoring, including:

- Detecting the presence of new and existing contaminants.
- Determining whether water in aquifers meets water quality standards.
- Assessing water quality trends.
- Determining how effectively the Department's guidance for permittees prevents or reduces pollution discharge.
- Evaluating the effects of contaminants in groundwater on public health or the environment.
- Developing and implementing policies and procedures for conducting ambient groundwater monitoring.

- Status: **Implementation in process.**

  In our initial followup, we reported that the Department had resumed conducting some components of statutorily required ambient groundwater monitoring, such as sampling groundwater from wells throughout the State and developing policies and procedures for doing so. Although the Department has yet to finalize these policies and procedures, it reported retaining a consultant to review the policies and procedures and other aspects of its ambient groundwater monitoring program and anticipates finalizing the policies and procedures by the end of fiscal year 2025. As part of its ambient groundwater monitroing program, the Department reported it is resuming its development and issuing of groundwater basin reports and has developed a draft Groundwater Monitoring Quality Assurance Program Plan to help fulfill its ambient groundwater monitoring responsibilites. The Department has also continued performing some ambient groundwater monitoring.

  Our review of the draft ambient groundwater monitoring policies and procedures found that they establish various requirements that will allow the Department to detect the presence of new and existing contaminants in groundwater. These include requirements for developing a State-wide groundwater monitoring network, establishing standardized groundwater monitoring protocols and methodologies, compiling and managing groundwater data collected through its groundwater sampling, collaborating with stakeholders, and continually evaluating the program to enhance effectiveness.

  In addition to the policies and procedures, the Department reported that it plans to reinstitute issuing groundwater basin reports by the end of calendar year 2025. The Department discontinued issuing these reports in 2015 when key staff responsible for developing these reports retired from the Department. According to Department information, these reports will provide information on the effectiveness of Department guidance for permittees on preventing and reducing pollution discharge and the effects of contaminants in groundwater on public health or the environment.

  Finally, the Department has developed an U.S. Environmental Protection Agency (EPA)-approved draft Groundwater Monitoring Quality Assurance Program Plan for identifying water quality trends, determining whether water in aquifers meets water quality standards, and assessing compliance with applicable aquifer water quality or drinking water quality standards by sampling groundwater from wells throughout the State. Similar to its policies and procedures, the consultant is also reviewing this plan, and the Department anticipates receiving the consultant's recommendations by the end of fiscal year 2025. We will further assess the Department's implementation of this recommendation during our next followup.

5. The Department should, in conjunction with performing workload analyses for developing AWQS and agricultural pesticide monitoring (see Findings 1 and 3, pages 7 through 10 and 14 through 17, respectively), perform a workload analysis to assess its costs for conducting ambient groundwater monitoring. This assessment should include a documented analysis of its ambient groundwater monitoring workload, and any available staff resources, and then identify the resources it needs to conduct ambient groundwater monitoring.

- Status: **Implemented at 12 months.**

6. The Department should, based on the assessment performed in Recommendation 5, work with the Legislature to obtain any needed resources, such as modifying fees that contribute to the WQFF to increase the amount of revenues generated for this Fund.

- Status: **Implemented at 42 months.**

  See explanation for recommendation 3.

Finding 3: Department has not conducted required monitoring of agricultural pesticides in groundwater and surrounding soil, limiting its ability to identify and address potential pollution in groundwater

7. The Department should monitor for agricultural pesticides in groundwater and soil throughout the State, as required by statute, by developing and implementing policies and procedures for:

- Determining how to analyze identified pesticides with the potential to pollute groundwater, in consultation with the Arizona Department of Health Services (ADHS).
- Monitoring groundwater and soil in areas of the State where identified pesticides with the potential to pollute groundwater are primarily used or may migrate into groundwater.
- Reporting all monitoring results to the Arizona Department of Agriculture (AZDA).
- Determining if a pesticide threatens to pollute groundwater and, if necessary, notifying AZDA to cancel the pesticide's registration.

- Status: **Implementation in process.**

  As reported in our initial followup, the Department developed policies and procedures for monitoring agricultural pesticides, including coordinating some aspects of pesticide monitoring with ADHS and AZDA. The Department has begun implementing these policies and procedures by conducting sampling for agricultural pesticides in groundwater and soil where pesticides are in use or for pesticide degradation byproducts. In conjunction with groundwater and soil sampling it conducted in fiscal year 2023, the Department submitted 40 soil and well water samples for testing to its contracted laboratory. Laboratory testing of these samples detected the presence of 1 or more of 13 different pesticide ingredients that are listed on the Groundwater Protection List (GWPL) in 21 of the soil and well water samples the Department submitted for analysis. Based on its fiscal year 2024 sampling, the Department's contracted laboratory detected the presence of 1 or more of 39 pesticide ingredients listed on the GWPL across all 33 of the soil and groundwater samples the Department submitted for analysis. The Department reported it is continuing its pesticide-monitoring program in fiscal year 2025.

  However, as of February 2025, the Department reported it has not yet established policies and procedures for reporting all monitoring results to AZDA and, if it determines that a pesticide threatens to pollute groundwater and it is necessary, notifying AZDA to cancel the pesticide's registration. It reported that the contractor it has used to detect pesticide ingredients in submitted samples does not yet have U.S. Environmental

EPA-approved analytical methods for verifying the presence of pesticides listed on the groundwater protection list in groundwater or the surrounding soil. The Department further reported it is coordinating with ADHS and its contractor to develop approved analytical methods. Once the EPA has developed and approved these methods, the Department reported it will develop policies and procedures for notifying AZDA to cancel the use of pesticide ingredients. We will further assess the Department's implementation of this recommendation during our next followup.

8. The Department should, in conjunction with performing workload analyses for developing AWQS and conducting ambient groundwater monitoring (see Findings 1 and 2, pages 7 through 13), perform a workload analysis to assess its costs for monitoring agricultural pesticides in groundwater and soil throughout the State. This assessment should include a documented analysis of its workload, and any available staff resources, and then identify the resources it needs to monitor agricultural pesticides in groundwater and soil throughout the State.

- Status: **Implemented at 12 months.**

9. The Department should, based on the assessment performed in Recommendation 8 and in conjunction with associated recommendations in Findings 1 and 2 (see pages 7 through 13), work with the Legislature to seek a statutory change to authorize funding and obtain the needed resources from the WQFF to monitor agricultural pesticides in groundwater and soil throughout the State, such as modifying the fees that contribute to the WQFF to increase the amount of revenues generated for this Fund.

- Status: **Implemented at 42 months.**

  See explanation for Recommendation 3.

Finding 4: Department has not reduced total number of impaired surface waters in State to address pollutants that affect the safe use of these waters and potentially negatively impact the environment

10. The Department should reduce the number of impaired surface waters in the State.

- Status: **Implementation in process.**

  Although the Department continues to identify and remove impairments from surface waters throughout the State and has improved its analytical capabilities to assess surface waters for impairments, the number of impaired surface waters in the State has continued to increase. Specifically, the total number of impaired surface waters has increased from 164 in 2022 to 182 in 2024. Although the Department remediated 7 impaired surface waters, it attributed this increase in the total number of impaired surface waters to additional testing resources, including volunteers, that helped to identify 25 additional impaired surface waters between calendar years 2022 and 2024. The Department reported that since the initial followup, it has removed all impairments from 7 surface waters, which had been impaired between 12 and 30 years. We will further assess the Department's implementation of this recommendation during our next followup.

11. The Department should develop TMDLs for pollutants contributing to surface waters that have been impaired for 15 years or more.

- Status: **Implementation in process.**

  The Department has developed policies and procedures for TMDL development, including a prioritization tool that prioritizes the development of TMDLs based on various factors, such as the number of years a surface water has been impaired.[2] According to Department documentation, since January 2023, it has been developing 8 TMDLs for 123 total impairments across 72 impaired surface waters, including 65 impairments that have contributed to impaired surface waters for 15 years or more.[3] The Department reported that it is in the process of removing the pollutants identified in the 8 TMDLs from the impaired surface waters. However, our review of Department documentation that tracks its development of TMDLs found that it has yet to develop TMDLs for 23 surface waters that have been impaired for 15 years or more.[4] Finally, TMDLs require EPA approval, and the Department reported that it anticipates completing and submitting 2 TMDL reports to the EPA prior to April 2026. We will further assess the Department's implementation of this recommendation during our next followup.

12. The Department should develop and implement policies and procedures to:

a. Track and schedule when TMDLs need to be developed, and develop a TMDL for each impaired surface water pollutant within 15 years from when the water was listed as impaired.

- Status: **Implementation in process.**

  Pursuant to the Clean Water Act and Arizona statute, which outline requirements for water quality monitoring and reporting, the Department has developed and implemented policies and procedures for tracking TMDLs and has identified the impaired surface waters for which it needs to develop TMDLs. Our review found that the Department tracks impaired surface waters and the length of time these waters have been impaired, uses a prioritization tool to prioritize the development of TMDLs for these surface waters, and has developed a schedule for doing so. According to Department documentation, since January 2023, it has been developing 8 TMDLs covering 58 impairments involving surface waters that have been impaired for less than 15 years. However, as of February 2025, the Department had not developed TMDLs for 57 impaired surface waters within 15 years from when the water was listed as impaired.

  Additionally, rather than create a TMDL for each impaired surface water, the Department has begun creating TMDLs that group impaired surface waters either by geographic location and/or impairment type. For example, the Department created a

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2 A TMDL is an estimation of the total amount of a pollutant from all sources that may be added to a water while still allowing the water to achieve and maintain applicable water quality standards. Each TMDL shall include allocations for sources that contribute the pollutant to the water.

3 According to the Department, after additional sample collection and testing, it plans to report 3 less impairments to the EPA in the 2026.

4 According to the Department, although the number of years a surface water has been impaired is a factor it considers when prioritizing the development of a TMDL, it also considers other factors, such as potential risk to the public. As a result, it may prioritize developing a TMDL for a surface water that has been impaired for less than 15 years.

TMDL for impaired segments of Queen Creek flowing through the Town of Superior that involve heavy metals and another TMDL for all mercury impairments in surface waters throughout the State. We will further assess the Department's implementation of this recommendation during our next followup.

b. Track and schedule when TMDLs need to be reviewed, and review developed TMDLs and implementation plans for surface waters still impaired at least once every 5 years.

- Status: **Implemented at 42 months.**

  The Department has developed and implemented policies and procedures for reviewing TMDLs at least once every 5 years and, according to its TMDL 5-Year Review Tracker, reviewed all 35 developed TMDL implementation plans for surface waters still impaired as of fiscal year 2023. The Department reported it will conduct its next 5-year review in calendar years 2027 and 2028.