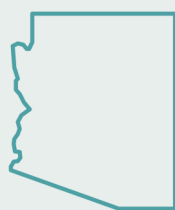


# EARLY ADOPTERS

## State Approaches to Testing School Drinking Water for Lead in the United States



### STATE PROFILE **Arizona**

#### **Summary of Program Features**

Arizona initiated a school drinking water lead testing program in January 2017. This summary is based on a review of program documents collected between January 2018 – June 2018 and communication with Arizona state contacts.

# School Drinking Water Testing Policy/Program Overview

Policy/Program Feature	Information from Policy/ Program Documents	Additional Information from Communication with State
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## Background

<b>Name</b>	Arizona's Public School Drinking	
<b>Date(s) of Water Policy/Program</b>	January 2017 – July 2017 <sup>1,2</sup>	Arizona Department of Environmental Quality (ADEQ) is assisting with post-corrective action sampling <sup>2,4</sup>
<b>Issuing Authority</b>	State government department <sup>1-3</sup>	
<b>Agency Responsible for Program Management</b>	Arizona Department of Environmental Quality <sup>1,2</sup>	
<b>Policy or Program</b>	Program <sup>1-3</sup>	
<b>One-time or Surveillance Program</b>	One-time <sup>1,2</sup>	
<b>Mandatory/Voluntary for Schools</b>	Voluntary <sup>1,2</sup>	
<b>Partnership with Local/Community Water Supplier/System</b>	Yes, encouraged <sup>1</sup>	
<b>Other Key Partnerships</b>	Arizona School Facilities Board <sup>1,2</sup>	Arizona Department of Health Services, Arizona Department of Education, Cities of Glendale, Peoria, Phoenix, Scottsdale, Tempe, Tucson <sup>2,4</sup>
<b>References or Uses the EPA 3Ts</b>	Yes <sup>2</sup>	

## Program Coverage

<b>School Type (Public, private, charter)</b>	Public schools <sup>1-3</sup>	Excluded: Private and charter schools <sup>4</sup>
<b>Grade Levels</b>	Not specified	Kindergarten – grade 12 <sup>4</sup>
<b>Includes Testing for Lead</b>	Yes <sup>1-3</sup>	
<b>Includes Treatment/Remediation</b>	Recommendation to work with School Facilities Board <sup>2</sup>	
<b>Schools Eligible to Participate</b>		
<b>Schools of a certain building age</b>	Not specified	
<b>Schools that serve certain ages/ demographics</b>	Not specified	
<b>Schools that are their own local/ community water supplier</b>	Not specified	No <sup>4</sup>
<b>Schools that use local/community water supplier</b>	Not specified	Yes <sup>4</sup>
<b>Schools that have not received a waiver</b>	Not specified	
<b>Other</b>	Not specified	Excluded: schools on tribal land and unless under the jurisdiction of the School Facilities Board <sup>4</sup>

## Funding

<b>Funding Source</b>	State government <sup>1,2</sup>	State government and city partners <sup>2,4</sup>
<b>Funding Amount</b>	Not specified	\$850,000 <sup>4</sup>
<b>Covers Sampling at Taps</b>	Not specified	
<b>Covers Testing in Lab</b>	Yes <sup>1,2</sup>	
<b>Covers Treatment/Remediation</b>	Not specified	

# Sampling Information

Policy/Program Feature	Information from Policy/Program Documents	Additional Information from Communication with State
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## Background

<b>Sampling/Testing Process One-Time or Recurring</b>	One-time <sup>1,2</sup>	Initial screening is 6 months. Program also includes confirmation and post-corrective action sampling. <sup>2,4</sup>
<b>Number of Buildings/Facilities Sampled (All or a Portion?)</b>	Not specified	A portion (those with drinking water fixtures or that are accessible to students) <sup>2,4</sup>
<b>Types of Taps Sampled</b>	Drinking <sup>1-3</sup>	Drinking <sup>4-6</sup>
<b>Number of Taps Sampled Per School/ Building (All or a Portion?)</b>	A portion (one from each building built before January 1, 1988 and one sample for buildings built after this date) <sup>3</sup>	A portion (two from each building built before January 1, 1988 and one sample for buildings built after this date; All drinking water fixtures were sampled if screening results came back above action level) <sup>4</sup>

## Initial Sampling at Taps

<b>Stagnation Period</b>	At least 6 hours <sup>2,3</sup>	
<b>First Draw</b>	Yes <sup>2</sup>	Yes <sup>4</sup>
<b>Flushing Period</b>	Not specified	None <sup>4</sup>
<b>Second Draw (Flushed Sample)</b>	Not specified	
<b>Additional Initial Samples</b>	Not specified	
<b>Sample Size of Water</b>	250 mL <sup>2</sup>	Day 1: (1) 250 mL sample: first draw <sup>2,4</sup>
<b>Action Level for Lead</b>	15 ppb <sup>2</sup>	

## Action Required When Samples Exceed Action Level for Lead

<b>Follow-Up Draws</b>	Yes (confirmation sampling) <sup>2</sup>	Follow-Up Day 1: (1) 250 mL sample – first draw (1) 250 mL sample – following 60 second flush Follow-Up Day 2: (1) 1 L sample <sup>2,4</sup>
<b>Flushing Period</b>	60 seconds <sup>3</sup>	No flushing prior to first draw or liter sampling, but flushed for 60 seconds prior to taking second 250 mL sample on Follow-Up Day 1 <sup>4</sup>
<b>Sample Size of Water</b>	1 L <sup>3</sup>	Follow-Up Day 1: 250 mL for first and second samples Follow-Up Day 2: 1 L <sup>2,4-6</sup>
<b>Additional Draws</b>	Yes (post-corrective action sampling at 3 and 6 months) <sup>2</sup>	

## Testing/Remediation/Communication Information

Policy/Program Feature	Information from Policy/Program Documents	Additional Information from Communication with State
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### Testing

Type of Lab Used for Testing	State-contracted labs, <sup>1,2</sup> lab <sup>3</sup>	
Sample(s) that Require Action if Results are Elevated	First draw <sup>2</sup>	All samples above program screening level require action <sup>2,4</sup>

### Remediation

Short-Term Measures	Yes, EPA-recommended strategies are listed <sup>2</sup>	
Long -Term Measures	Not specified	Yes, EPA-recommended strategies are listed <sup>2,4</sup> Schools are referred to the Arizona School Facilities Board <sup>7</sup>

### Communication

Groups Notified of Test Results	Staff, students and parents <sup>2</sup>	ADEQ notified schools, schools notify staff, students, and parents <sup>8</sup>
Type of Results Shared (outlet level, building level, school level)	Not specified	School, building and fixture <sup>4,9</sup>

### Sources:

1. State of Arizona School Facilities Board. Superintendent Letter. January 2017. [http://static.azdeq.gov/wqd/pb\\_schools/superintendent\\_letter.pdf](http://static.azdeq.gov/wqd/pb_schools/superintendent_letter.pdf). Accessed March 1, 2018.
2. Arizona Department of Environmental Quality. *Arizona Public School Drinking Water Lead Screening Program; 2017:1-23*. [http://static.azdeq.gov/dw/lead\\_screening.pdf](http://static.azdeq.gov/dw/lead_screening.pdf). Accessed March 1, 2018.
3. Arizona Department of Environmental Quality. Arizona Department of Environmental Quality Public School Lead Drinking Water Screening Program Sampling Plan & Collection for Experienced Sample Collectors. [http://static.azdeq.gov/wqd/pb\\_schools/sample\\_collection\\_short.pdf](http://static.azdeq.gov/wqd/pb_schools/sample_collection_short.pdf). Accessed March 1, 2018.
4. Email Communication with Arizona Department of Environmental Quality Contact. June 2018.
5. Arizona Department of Environmental Quality. Post Corrective Action Sampling Instructions. August 2017. Received by email in June 2018.
6. Arizona Department of Environmental Quality. Confirmation Sampling Plan. Received by email in June 2018.
7. Arizona School Facilities Board. AZ Lead in Drinking Water Program. <https://schoolwater.az.gov/>. Accessed October. 30, 2018
8. Email Communication from Arizona Department of Environmental Quality Contact. October 2018.
9. Public Schools Lead Screening Testing Data | ADEQ Arizona Department of Environmental Quality. <http://www.azdeq.gov/node/3608>. Accessed March 1, 2018.

# Summary of Water Test Results

This report features data collected through Arizona's Public School Drinking Water Lead Screening Program, initiated in January 2017. Data provided by the state program on March 15, 2018 documented findings from 13,380 drinking water samples that were collected from 1,417 organizations. The state's program was ongoing through July 2017, and post-corrective action sampling is ongoing. While many states may collect water quality data from a number of organizations, this state profile is focused on water quality testing completed in public schools serving grades pre-Kindergarten (PK)-12. Summary results reported in this state profile may differ from those reported by the state program due to differences in the types of organizations included and/or the period of test results covered.

**Table 1: Arizona Public School Drinking Water Lead Screening Program Results Summary**

In Arizona, the level of lead found in a drinking water sample that warrants action, or the "action level," is 15 ppb for a water sample of 250mL. This summary describes "first draw" samples taken in Arizona's Public School Drinking Water Lead Screening Program. The "first draw" is a sample that is taken from the tap as soon as the water is turned on. Additional "draws" may be taken according to the state's procedures.

In Arizona, data were reported by fixture. Each school reported the date and time of collection, building name, location of fixture, sample identification number, the result from the draw, and whether the sample had a lead content level that was over the "action level."

- ◇ In Arizona, twenty two percent (22%) of public schools serving grades PK-12 had one or more draws at or above the state's action level for lead.
- ◇ In Arizona, four percent (4%) of first draw samples tested from public schools serving grades PK-12 had a lead content that was at or above the state's action level for lead.

	All schools providing drinking water quality testing results	Public schools serving grades PK-12 providing drinking water lead testing results*
<i>School-Level Summary</i>		
<b>Number of schools with test result for lead</b>	1,315	1,274
<b>Average (min/max) number of samples taken at each school</b>	9.8 (1, 48)	9.9 (1, 48)
<b>Number (%) of schools with one or more samples at or above the State's "action level"</b>	287 (22%)	278 (22%)
<i>Outlet/Tap-Level Summary</i>		
<b>Number of samples</b>	12,876	12,600
<b>Number (%) of samples at or above the State's "action level"</b>	536 (4%)	516 (4%)

\* See table 3 for characterization of schools



**Table 1a: Arizona Public School Drinking Water Lead Screening Program Results Summary *By School Characteristics*, among the 1,274 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results\***

	Primary	Middle	High	Middle/High
<i>School-Level Summary</i>				
<b>Number of schools with test result for lead</b>	875	184	210	5
<b>Average (min/max) number of samples taken at each school</b>	8.7 (1, 48)	10.2 (1, 42)	14.8 (1, 44)	6.6 (2, 12)
<b>Number (%) of schools with one or more samples at or above the State's "action level"</b>	163 (19%)	45 (24%)	69 (33%)	1 (20%)
<i>Outlet/Tap-Level Summary</i>				
<b>Number of samples</b>	7,583	1,881	3,103	33
<b>Number (%) of samples at or above the State's "action level"</b>	320 (4%)	72 (4%)	123 (4%)	1 (3%)

\* See table 3 for characterization of schools

**Table 1b: Arizona Public School Drinking Water Lead Screening Program Results Summary *By Metro Status or Locale*, among the 1,274 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results\***

	City	Suburban	Town	Rural
<i>School-Level Summary</i>				
<b>Number of schools with test result for lead</b>	570	334	182	188
<b>Average (min/max) number of samples taken at each school</b>	10.9 (1, 48)	9.4 (1, 46)	9.6 (1, 46)	7.9 (1, 31)
<b>Number (%) of schools with one or more samples at or above the State's "action level"</b>	150 (26%)	59 (18%)	26 (14%)	43 (23%)
<i>Outlet/Tap-Level Summary</i>				
<b>Number of samples</b>	6,222	3,135	1,752	1,491
<b>Number (%) of samples at or above the State's "action level"</b>	314 (5%)	96 (3%)	36 (2%)	70 (5%)

\* See table 3 for characterization of schools

## Additional Details on Findings from Arizona

### School Eligibility for Arizona Public School Drinking Water Lead Screening Program

Eligible schools according to available program documents:

- ◇ Public schools serving grades Kindergarten – 12

Excluded schools:

- ◇ Private schools, charter schools, schools that are their own community water source, schools that sample under the Lead and Copper Rule, and schools that are on tribal land

### Characteristics of Schools in the Arizona Public School Drinking Water Lead Screening Program

The National Center for Educational Statistics (NCES) is the primary federal entity for collecting and analyzing educational data in the United States. Each year, the NCES reports a directory of all public schools in the United States and their characteristics in the Common Core of Data.

In order to better understand the characteristics of schools participating in the Arizona Public School Drinking Water Lead Screening Program, we matched demographic data on the schools and students available in the NCES Common Core of Data (2015-2016) school directory to the schools present in the data available from the state's drinking water testing program. We matched these schools using the school and district names and other public data sources.

We identified 1,274 Arizona schools with drinking water lead testing results provided in the Arizona Public School Drinking Water Lead Screening Program data that were also present in the 2015-2016 NCES Common Core of Data. These 1,274 schools represent 97% of the 1,315 schools serving grades PK-12 that had drinking water lead testing results reported in the state program data. For this summary, we considered schools serving grades PK-12 eligible to participate in the program. Eligible schools serving grades K-12 may have also served PK students. Additionally, state-provided testing results included schools identified as serving grade PK only.



**Table 2: Number and Types of Organizations Represented in Arizona Public School Drinking Water Lead Screening Program Data<sup>1</sup>**

Type of Organization	Number	Category Definition
<b>Schools Serving Grades PK-12</b>	<b>1,315</b>	<b>Sum of all school types serving grades PK-12</b>
<b>Public schools serving grades PK-12 (including public charter), with identifiable school characteristics</b>	1,274	All public schools with grades PK-12, including public charter schools, with identifying information in the national census of public schools (National Center for Education Statistics (NCES) Common Core of Data, 2015-2016)
<b>Other public schools serving grades PK-12, without identifiable school characteristics</b>	41	All other public schools with grades PK-12, including public charter schools, without identifying information in the national census of public schools (NCES Common Core of Data, 2015-2016)
<b>Schools Serving Other Grades/Age Groups</b>	<b>28</b>	<b>Sum of All School Types Serving Other Grades or Age Groups</b>
<b>Child care centers</b>	5	Organizations or schools that primarily serve as a child care center (includes preschool)
<b>Public schools with unknown grades</b>	23	Public schools that have identifying information in the national census of public schools (NCES Common Core of Data 2015-2016) but do not specify the grades that are served
<b>Other organization or facility types</b>	<b>74</b>	<b>Other organization or facility types such as recreation centers, educational administration buildings, afterschool programs</b>
<b>Total number of organizations where data were collected</b>	<b>1,417</b>	<b>Total number of organizations where data were collected as of July 2017</b>

1. Arizona schools with drinking water lead test results provided by the Arizona program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Arizona Public School Drinking Water Lead Screening Program data or other public data sources (i.e., state school directory, school district websites)

## Characteristics of Public Schools in Arizona Serving Grades PK-12

In Arizona,

- ◇ All public schools serving grades PK-12 were considered eligible to participate in the state's drinking water testing program for this study.
- ◇ There are 2,206 public schools serving grades PK-12, according to the National Center for Education Statistics Common Core of Data 2015-2016.
- ◇ Of these, 1,274 (58%) schools had lead testing findings that were collected via the Arizona Public School Drinking Water Lead Screening Program in schools as of July 2017. Those 1,274 schools serve 82% of Arizona's PK-12 students.



**Table 3: Number and Characteristics of Arizona Public Schools Serving Grades PK-12 (NCES Common Core of Data 2015-16)<sup>1</sup>**

	Schools Eligible to Participate in the Arizona Public School Drinking Water Lead Screening Program <sup>1</sup>	Schools with Drinking Water Lead Test Results (January 2017 – July 2017) <sup>2,3</sup>
<b>NUMBER OF SCHOOLS<sup>2</sup></b>	2,206	1,274 (58%)
<i>School-Level<sup>4</sup></i>		
<b>Primary</b>	1,285 (58%)	875 (69%)
<b>Middle</b>	235 (11%)	184 (14%)
<b>High</b>	638 (29%)	210 (16%)
<b>Middle/High</b>	48 (2%)	5 (<1%)
<i>Metro Status/Locale<sup>4</sup></i>		
<b>City</b>	1,010 (46%)	570 (45%)
<b>Suburban</b>	529 (24%)	334 (26%)
<b>Town</b>	301 (14%)	182 (14%)
<b>Rural</b>	366 (17%)	188 (15%)
<b>NUMBER OF STUDENTS IN GRADES PK-12</b>	1,091,566	891,516 (82%)
<i>Number (%) of students eligible for free or reduced price meals</i>	484,265 (44%)	407,470 (46%)
<i>Number (%) students by race and ethnicity<sup>4</sup></i>		
<b>White</b>	428,574 (39%)	339,045 (38%)
<b>Black</b>	57,639 (5%)	46,804 (5%)
<b>Asian</b>	30,784 (3%)	21,650 (2%)
<b>Hispanic</b>	492,753 (45%)	416,226 (47%)
<b>Hawaii Native/Pacific Islander</b>	3,546 (<1%)	2,828 (<1%)
<b>American Indian/Alaska Native</b>	49,373 (5%)	42,235 (5%)
<b>Two or More Races</b>	28,897 (3%)	22,827 (3%)

1. Public schools and their characteristics were identified using the National Center for Education Statistics Common Core of Data 2015-2016, Public Elementary/Secondary School Universe Survey Data, downloaded March 22, 2018 from <https://nces.ed.gov/ccd/pubschuniv.asp>.
2. Only schools identified in the 2015-2016 NCES Common Core of Data database are included here.
3. Arizona schools with drinking water lead test results provided by the Arizona program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Arizona Public School Drinking Water Lead Screening Program data or other public data sources (i.e., state school directory, school district websites).
4. Percentages may not add up to exactly 100% due to rounding.

### Citation:

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*The findings in this profile are based on the results of research commissioned by Healthy Eating Research (HER), a national program of the Robert Wood Johnson Foundation, through a rapid-response grant focused on addressing research gaps related to policies aimed at helping children achieve a healthy weight.*