

EARLY ADOPTERS

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



STATE PROFILE **Nevada**

Summary of Program Features

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

School Drinking Water Testing Policy/Program Overview

Policy/Program Feature	Information from Policy/ Program Documents	Additional Information from Communication with State
<i>Background</i>		
Name	Lead in Schools Grant ^{1,2}	Exploration of Lead in Drinking Water at Nevada Elementary Schools ³
Date(s) of Water Policy/Program	2017 to September 30, 2018 ⁴	Verbal approval to extend to September 30, 2019 ³
Issuing Authority	State government department ^{1,4,5}	
Agency Responsible for Program Management	Nevada Division 2017 of Environmental Protection (NDEP) ^{1,2}	
Policy or Program	Program ^{1,5}	
One-time or Surveillance Program	One-time ^{1,4}	
Mandatory/Voluntary for Schools	Voluntary ^{1,4,5}	
Partnership with Local/Community Water Supplier/System	Yes, encouraged ^{1,4,5}	
Other Key Partnerships	Not specified	
References or Uses the EPA 3Ts	Yes ¹	
<i>Program Coverage</i>		
School Type (Public, private, charter)	Public and charter schools ¹	Public and state sponsored charter schools ³
Grade Levels	Schools with pre-Kindergarten or Kindergarten, ¹ elementary schools ^{4,5}	All elementary schools and any schools with a pre-Kindergarten or Kindergarten ³
Includes Testing for Lead	Yes ^{1,5}	
Includes Treatment/Remediation	Yes ¹	Yes, until funding is exhausted ³
Schools Eligible to Participate		
Schools of a certain building age	If funding levels require prioritization, buildings built before 1989 will be prioritized ¹	Funding has been adequate to address all target schools, prioritization has not been necessary. ³
Schools that serve certain ages/demographics	Schools with pre-Kindergarten or Kindergarten ^{1,5}	Elementary schools and schools with a pre-Kindergarten or Kindergarten ³
Schools that are their own local/community water supplier	Not specified	No ³
Schools that use local/community water supplier	Yes ¹	
Schools that have not received a waiver	Not specified	
<i>Funding</i>		
Funding Source	State government ^{1,4,5}	State government using a federal grant ³
Funding Amount	\$90,000 ¹	
Covers Sampling at Taps	Yes, ¹ personnel costs not covered ⁴	Yes, kits and shipping. Labor is voluntary ³
Covers Testing in Lab	Yes ^{1,4,5}	
Covers Treatment/Remediation	Yes ¹	Yes, until funding is exhausted ³

Sampling Information

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

Sampling/Testing Process One-Time or Recurring	One-time, with additional testing if funding permits ^{1,4}	
Number of Buildings/Facilities Sampled (All or a Portion?)	A portion (those with pre-Kindergarten or Kindergarten) ¹	A portion ³
Types of Taps Sampled	Drinking ^{1,4,5} and cooking ^{1,4}	
Number of Taps Sampled Per School/ Building (All or a Portion?)	A portion (two per school) ^{1,4}	

Initial Sampling at Taps

Stagnation Period	At least 6 hours ^{2,4}	
First Draw	Yes ^{1,2,4}	
Flushing Period	Not specified	None ³
Second Draw (Flushed Sample)	Not specified	None ³
Additional Initial Samples	Not specified	None ³
Sample Size of Water	250 mL ^{2,4,5} or 1 L ⁵	
Action Level for Lead	20 ppb* for 250 mL, 15 ppb for 1 L ⁵	

Action Required When Samples Exceed Action Level for Lead

Follow-Up Draws	Yes, if initial results are elevated ¹	
Flushing Period	Not specified	Practice is 30 – 60 seconds ³
Sample Size of Water	Not specified	250 mL ³
Additional Draws	Not specified	As needed to diagnose problem ³

*Action level used for further analysis in Early Adopters study

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 lab ^{2,4,5}	State-certified lab, contracted ³
Sample(s) that Require Action if Results are Elevated	First draw ^{1,4}	First draw and flush samples recommended and funded until results are below action level ³

Remediation

Short-Term Measures	Yes, EPA-approved measures are listed ¹	
Long -Term Measures	Not specified	

Communication

Groups Notified of Test Results	Parents ¹	NDEP receive the results and notifies the school and school district ³
Type of Results Shared (outlet level, building level, school level)	Not specified	Outlet level ³

Sources:

1. Nevada Division of Environmental Protection. Exploration of Lead in Drinking Water at Nevada Elementary Schools. April 2017. Received by email on March 16, 2018.
2. Nevada State Public Health Laboratory. Lead in Schools Grant Sampling Instructions. Received by email on March 16, 2018.
3. Email Communication with Nevada Division of Environmental Protection Contact. June 2018.
4. Nevada Division of Environmental Protection. Exploration of Lead in Drinking Water at Nevada Elementary Schools: Project Information & Guidance for PWS Partner Volunteers. Received by email on March 16, 2018.
5. Nevada Division of Environmental Protection. Letter in Response to NDEP Quality Assurance Project Plan for Voluntary Exploring of Lead in Nevada Elementary Schools. April 2017. Received by email on March 16, 2018.

Approved to Extend Program to September 30, 2019

As of October 2018, the Nevada Division of Environmental Protection had extended the testing program through September 30, 2019 and additional grant funds were available to expand the program to include testing in private elementary schools and middle schools.

Summary of Water Test Results

This report features data collected through Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools program, initiated in 2017. Data provided by the state program on March 16, 2018 documented findings from 639 drinking water samples that were collected from 310 organizations. The state's program was set to end on September 30, 2018, but it has been extended to September 30, 2019. 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 elementary schools or public schools with a pre-Kindergarten (PK) or Kindergarten.

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

In Nevada, the level of lead found in a drinking water sample that warrants action, or the "action level," is 20 ppb for a water sample of 250mL. At least one school district used 1L bottles, so the action level was set to 15 ppb in these instances. This summary describes "first draw" samples taken in Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools 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 Nevada, 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 Nevada, three percent (3%) of public elementary schools and public schools serving PK or Kindergarten had one or more draws at or above the state's action level for lead.
- ◇ In Nevada, one percent (1%) of first draw samples tested from public elementary schools and public schools serving PK or Kindergarten 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*
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School-Level Summary

Number of schools with test result for lead	309	308
Average (min/max) number of samples taken at each school	2.1 (1, 4)	2.1 (1, 4)
Number (%) of schools with one or more samples at or above the State's "action level"	9 (3%)	9 (3%)

Outlet/Tap-Level Summary

Number of samples	637	635
Number (%) of samples at or above the State's "action level"	9 (1%)	9 (1%)

* See table 3 for characterization of schools

Table 1a: Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools Program Results Summary By School Level, among the 308 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results*

	Primary	Middle	High
<i>School-Level Summary</i>			
Number of schools with test result for lead	304	2	2
Average (min/max) number of samples taken at each school	2.1 (1, 4)	2.0 (2, 2)	2.0 (2, 2)
Number (%) of schools with one or more samples at or above the State’s “action level”	9 (3%)	0 (0%)	0 (0%)
<i>Outlet/Tap-Level Summary</i>			
Number of samples	627	4	4
Number (%) of samples at or above the State’s “action level”	9 (1%)	0 (0%)	0 (0%)

* See table 3 for characterization of schools

Table 1b: Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools Program Results Summary By Metro Status or Locale among the 308 Public Schools Serving Grades PK-12 Providing Drinking Water Lead Testing Results*

	City	Suburban	Town	Rural
<i>School-Level Summary</i>				
Number of schools with test result for lead	150	115	20	23
Average (min/max) number of samples taken at each school	2.0 (1, 4)	2.1 (2, 4)	2.2 (1, 4)	2.0 (2, 3)
Number (%) of schools with one or more samples at or above the State’s “action level”	2 (1%)	4 (3%)	1 (5%)	2 (9%)
<i>Outlet/Tap-Level Summary</i>				
Number of samples	303	242	43	47
Number (%) of samples at or above the State’s “action level”	2 (1%)	4 (2%)	1 (2%)	2 (4%)

* See table 3 for characterization of schools

Additional Details on Findings from Nevada

School Eligibility for Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools

Eligible schools according to available program documents:

- ◇ All public elementary schools and any public school with a pre-Kindergarten or Kindergarten
- ◇ State sponsored charter schools
- ◇ Schools that use a community water source

Excluded schools:

- ◇ Schools that are their own community water source

Characteristics of Schools in the Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools

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 that were being served by Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools 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 308 Nevada schools with drinking water lead testing results provided by Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools program that were also present in the 2015-2016 NCES Common Core of Data. These 308 schools represent nearly 100% of the 309 public elementary schools or public schools serving PK or Kindergarten that had drinking water lead testing results reported in the state program data.



Table 2: Number and Types of Organizations Represented in Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools Data¹

Type of Organization	Number	Category Definition
Public elementary schools or public schools serving PK or Kindergarten	309	Sum of all public elementary schools or public schools serving PK or Kindergarten
Public elementary schools or public schools serving PK or Kindergarten (including public charter), with identifiable school characteristics	308	All public elementary schools or public schools serving PK or Kindergarten, 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)
Other schools	1	Schools of unknown type or schools that do not fit into other categories above
Other organization or facility types	1	Other organization or facility types such as recreation centers, educational administration buildings, afterschool programs
Total number of organizations where data were collected	310	Total number of organizations where data were collected as of March 16, 2018

1. Nevada schools with drinking water lead test results provided by the Nevada program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools program data or other public data sources (i.e., state school directory, school district websites)

Characteristics of Public Schools in Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools

In Nevada,

- ◇ All public elementary schools or public schools serving PK or Kindergarten were considered eligible to participate in the state’s drinking water testing program for this study.
- ◇ There are 396 public elementary schools or public schools serving PK or Kindergarten, according to the National Center for Education Statistics Common Core of Data 2015-2016.
- ◇ Of these, 308 (78%) schools had lead testing findings that were collected via Nevada’s Exploration of Lead in Drinking Water at Nevada Elementary Schools in schools as of March 16, 2018. These 308 schools serve 84% of Nevada’s PK-12 students attending public elementary schools or public schools serving PK or Kindergarten.

Table 3: Number and Characteristics of Nevada Public Schools Serving Elementary School Students (NCES Common Core of Data 2015-16)¹

	Schools Eligible to Participate in Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools ¹	Schools with Drinking Water Lead Test Results (2017 – March 16, 2018) ^{2,3}
NUMBER OF SCHOOLS²	396	308 (78%)
<i>School-Level⁴</i>		
Primary	392 (99%)	304 (99%)
Middle	2 (1%)	2 (1%)
High	2 (1%)	2 (1%)
<i>Metro Status/Locale⁴</i>		
City	182 (46%)	150 (49%)
Suburban	125 (32%)	115 (37%)
Town	39 (10%)	20 (6%)
Rural	50 (13%)	23 (7%)
NUMBER OF STUDENTS IN GRADES PK-12	232,562	194,386 (84%)
<i>Number (%) of students eligible for free or reduced price meals</i>	139,292 (60%)	126,983 (65%)
<i>Number (%) students by race and ethnicity⁴</i>		
White	77,645 (33%)	59,492 (31%)
Black	24,207 (10%)	20,819 (11%)
Asian	11,077 (5%)	9,177 (5%)
Hispanic	98,879 (43%)	87,942 (45%)
Hawaii Native/Pacific Islander	3,217 (1%)	2,725 (1%)
American Indian/Alaska Native	2,123 (1%)	1,268 (1%)
Two or More Races	15,414 (7%)	12,963 (7%)

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. Nevada schools with drinking water lead test results provided by the Nevada program were matched to the 2015-2016 NCES Common Core of Data database using school and district names and other information provided by Nevada's Exploration of Lead in Drinking Water at Nevada Elementary Schools 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:

Cradock AL, Poole MK, Vollmer LY, Barrett JL, Flax C, Hecht CA. State Approaches to Testing School Drinking Water for Lead in the United States [State Profile: Nevada]. Boston, MA: Harvard Prevention Research Center on Nutrition and Physical Activity at the Harvard T.H. Chan School of Public Health; 2019. Available at <https://www.hsph.harvard.edu/prc/projects/school-research/early-adopters>. Address correspondence to Angie Cradock, ScD, MPE at acradock@hsph.harvard.edu.

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.