



*Effective and Economical
Environmental Solutions*

**Lead in Drinking Water Sampling Services
Per amendments to N.J.A.C 6A:26 Educational Facilities
Somerset County Vocational & Technical School
14 Vogt Drive, Bridgewater, NJ 08807
Karl Environmental Group Project #: 22-0603**

June 17, 2022

Prepared for:
Mr. Steven Boettger
Supervisor of Buildings & Grounds
Somerset County Vocational & Technical School
14 Vogt Drive, Bridgewater, NJ 08807

Prepared by:
Karl Environmental Group
20 Lauck Road
Mohnton, PA 19540
Tel: (800) 527-5581
Fax: (610) 856-5040



20 Lauck Road
Mohnton, PA 19540
Tel: (800) 527-5581
Fax: (610) 856-5040
Web: www.karlenv.com

June 17, 2022

Mr. Steven Boettger
Supervisor of Buildings & Grounds
Somerset County Vocational & Technical School
14 Vogt Drive, Bridgewater, NJ 08807

**Re: Lead in Drinking Water Sampling Services
Somerset County Vocational & Technical School
14 Vogt Drive, Bridgewater, NJ 08807
Karl Environmental Group Project #: 22-0603**

Dear Mr. Boettger:

Thank you for selecting Karl Environmental Group (“Karl”) for this project. This report details the methods and findings of the lead in drinking water sampling services as per New Jersey state regulations (amendments to N.J.A.C 6A:26 Educational Facilities) performed for the Somerset County Vocational & Technical School located at 14 Vogt Drive, Bridgewater, NJ 08807 on May 11 and 27, 2022.

1.0 PROJECT BACKGROUND

Karl Environmental was contracted by the “Client” to perform lead in drinking water sampling to determine the lead content of drinking water from sources throughout the Facilities. The purpose of lead in drinking water sampling is to ascertain if any sampled drinking water source exhibits lead levels exceeding the Regulatory Action Level of 15 parts per billion (ppb). Drinking water collection points include any water sources from which a student, staff, or faculty may reasonably drink or from which the water may be used for cooking or beverage preparation.

2.0 LEAD IN DRINKING WATER

Lead is a toxic substance that can be harmful to human health. As compared to adults, children are more susceptible to the detrimental health effects of lead, as their nervous systems are not yet fully developed. Exposure to lead can occur in a variety of ways including through food, soil, deteriorating lead-based paint, and drinking water. Lead can leach into drinking water from plumbing materials such as pipes and solder, as well as brass plumbing fixtures. For this investigation, planning, preparation, methodology, sampling, and follow-up actions were conducted according to the technical guidance provided by New Jersey following the adoption of amendments to N.J.A.C. 6A:26: Educational Facilities, requiring the sampling of drinking water for lead in public schools.



3.0 DRINKING WATER SAMPLING METHODOLOGY

Karl Environmental collected drinking water samples from the requested outlets at the Facilities. At each collection point, Karl Environmental filled a 250 milliliter (mL) wide-mouth high density polyethylene (HDPE) sample collection bottle from the selected water source. Samples were collected after the water from each collection point had not been used for at least 8 hours, but not more than 48 hours. Samples were preserved using concentrated Nitric Acid (HNO₃). The initial sample at each collection point represents the first draw sample. The first draw sample is representative of the water from the end point of the water source (i.e., the bubbler or tap).

After receipt of the first draw sample results, a second draw (flush) sample was taken at those collection points exhibiting elevated lead levels. Second draw samples were collected after flushing the water for a predetermined amount of time. The second draw sample is representative of the water from the lateral plumbing lines that lead to the outlet.

A field blank using lead-free laboratory reagent water was also collected at each Facility building during the sampling event for quality control purposes. All samples were recorded under proper chain of custody and couriered to Suburban Testing Labs, a New Jersey certified laboratory (NJ Lab ID #PA081) located in Reading, Pennsylvania for analysis by EPA method 200.8.

Karl Environmental collected the following number of water samples during the initial sampling event on May 11, 2022:

Building A

- One (1) Field Blank Sample
- Six (6) First Draw Samples

Building B

- Zero (0) samples collected

Building C

- One (1) Field Blank Sample
- Fourteen (14) First Draw Samples

Building D

- One (1) Field Blank Sample
- Four (4) First Draw Samples

Building E & Admin (Same Supply)

- Two (2) Field Blank Sample
- Four (4) First Draw Sample

Building F & G (Sample Supply)

- One (1) Field Blank Sample
- Eight (8) First Draw Samples



Building H

- One (1) Field Blank Sample
- One (1) First Draw Sample

Following the receipt of results from the First Draw Lead in Water sampling event, the Somerset County Vocational and Technical School conducted a second draw sampling on the outlet that exceeded the Regulatory Action Level (AL). Karl Environmental Group Collected the following number of samples at each Facility during the second draw sampling event:

Building C

- One (1) Field Blank Sample
- One (1) Second Draw Sample

4.0 DRINKING WATER ANALYSIS RESULTS

The analytical lead in drinking water results for each first draw sample are listed in Tables 1-6, below:

Table 1: Analytical Lead Results for First Draw Water Samples Collected from Building A

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC-A101	Water Cooler	<1.00	No
SVT-WC-A103	Water Cooler	<1.00	No
SVT-WC-A102	Water Cooler	*	*Out of Service
SVT-WC-A104	Water Cooler	1.03	No
SVT-WC-A106	Water Cooler	*	*Out of Service
SVT-WC-A105	Water Cooler	<1.00	No
SVT-BF-A105	Bottle Filler	<1.00	No
SVT-FB-A105	Fountain Bubbler	*	*Out of Service
SVT-WC-A107	Water Cooler	<1.00	No
SVT-BLANK-BLDG A	Field Blank	<1.00	No

 **Sample could not be collected**

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling, no samples were above the Regulatory Action Level.

Samples were not collected at Building B due to all the outlets being out of service and not under use. These outlets should be tested before putting back under use.



Table 2: Analytical Lead Results for First Draw Water Samples Collected from Building C

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK-BLDG C	Field Blank	<1.00	No
SVT-WC-C100	Water Cooler	*	*Out of Service
SVT-SO1-CUL.ART.KIT	Sink	<1.00	No
SVT-SO2-CUL.ART.KIT	Sink	<1.00	No
SVT-SO3-CUL.ART.KIT	Sink	2.07	No
SVT-SK2-CUL.ART.KIT	Sink	1.64	No
SVT-SK3-CUL.ART.KIT	Sink	1.19	No
SVT-SO4-CUL.ART.KIT	Sink	1.36	No
SVT-SO1-CUL.ART	Sink	<1.00	No
SVT-IM-CUL.ART	Sink	<1.00	No
SVT-IM-PREP.KIT	Sink	5.30	No
SVT-CM2-PREP.KIT	Washer 21	22.2	Yes
SVT-SK1-CUL.ART.KIT	Sink	<1.00	No
SVT-SO2-CUL.ART	Sink	<1.00	No
SVT-WC-HEADHOUSE-C4	Water Cooler	<1.00	No
SVT-BF-BUILD-C-LOBBY	Bottle Filler	<1.00	No

 Results above regulatory action level  Sample could not be collected

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw water samples indicated that at the time of the sampling event, one (1) sample collected from Building C was above the Regulatory Action Level, denoted in orange highlight above. One outlet within the Facility could not be sampled as they were not operational and should be sampled prior to being put into service.



Table 3: Analytical Lead Results for First Draw Water Samples Collected from Building D

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK-BLDG D	Field Blank	<1.00	No
SVT-WC1-HALLD121	Water Cooler	*	*Out of service
SVT-WC2-HALLD121	Water Cooler	*	*Out of service
SVT-WC-HALLD100	Water Cooler	*	*Out of service
SVT-FB-HALLD100	Bottle Filler	<1.00	No
SVT-HALLD224-Sink	Sink	<1.00	No
SVT-HALLD224-WC1	Water Cooler	<1.00	No
SVT-WC-BUILDD-132	Water Cooler	<1.00	No

 Sample could not be collected

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling, no samples were above the Regulatory Action Level.

Table 4: Analytical Lead Results for First Draw Water Samples Collected from Building E & Admin

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK-BLDG ADMIN	Field Blank	<1.00	No
SVT-BLANK-BLDG E	Field Blank	<1.00	No
SVT-S-ADMIN.KIT	Sink	<1.00	No
SVT-BLDGADMIN-BF	Bottle Filler	<1.00	No
SVT-WC-ADMIN.KIT	Water Cooler	<1.00	No
SVT-WC-HALLE107	Water Cooler	<1.00	No

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling, no samples were above the Regulatory Action Level.



Table 5: Analytical Lead Results for First Draw Water Samples Collected from Building F & Building G

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK-BLDG F	Field Blank	<1.00	No
SVT-HALLF202-BF	Bottle Filler	<1.00	No
SVT-WC-HALLF207	Water Fountain	*	*Out of service
SVT-WC-HALLG101B	Water Fountain	*	*Out of service
SVT-FB-HALLG101B	Water Fountain	*	*Out of service
SVT-WC-HALLF103	Water fountain	*	*Out of service
SVT-WC-HALLF109A	Water Fountain	*	*Out of service
SVT-WC-HALLF207	Water Fountain	*	*Out of service
SVT-S-TRAININGRM	Sink	1.15	No
SVT-IM-TRAININGRM	Ice Machine	<1.00	No
SVT-WC-WOMEN.LOCKER	Water Fountain	5.04	No
SVT-WC-GYMLOBBY	Water Fountain	2.24	No
SVT-F103-SINK46	Sink	<1.00	No
SVT-WC-F103	Water Fountain	<1.00	No
SSVT-WC-BOYSLOCKER	Water Fountain	<1.00	No

 Sample could not be collected

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling, no samples were above the Regulatory Action Level.

Table 6: Analytical Lead Results for First Draw Water Samples Collected from Building H

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK-BLDG G	Field Blank	<1.00	No
SVT-HORTICULTURE	Sink	<1.00	No

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling, no samples were above the Regulatory Action Level.



Table 7, below, illustrates the result of the second draw sampling conducted on May 27, 2022.

Table 7: Analytical Lead Results for Second Draw Water Samples Collected from Building C

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-BLANK	Field blank	<1.00	No
SVT-CM2-PREP.KIT	Washer 21	364	Yes

Results above regulatory action level

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb for lead. Analysis of lead in the second draw water samples indicated that at the time of the sampling event, one (1) sample collected from Building C was above the Regulatory Action Level, denoted in orange highlight above. This outlet has been removed from service.

5.0 CONCLUSIONS & RECOMMENDATIONS

Karl Environmental collected thirty-eight (38) first draw samples, and one (1) second draw from drinking water sources throughout the Somerset County Vocational & Technical School Facilities. Second draw sample results indicated that one (1) of the samples collected exhibited lead levels above the Regulatory Action Level of 15 ppb. This outlet has been turned off and taken off of service. The the following recommendations at this time:

- Outlets that exceeded the regulatory action level should be retested after remediations have been made and prior to putting back in service.
- Any outlets not sampled during the sampling event should be tested prior to being used. This includes newly installed outlets.
- Continue to monitor lead in drinking water levels as part of a regular sampling and maintenance plan, as per New Jersey State regulations. District-wide sampling is required every three (3) years. Within that three (3) years, sampling of individual outlets should also be conducted after the replacement of any drinking water outlet or any other alteration to plumbing or service lines that may impact lead levels at the outlet.
- Use only cold water for food and beverage preparation. Hot water is more likely to contribute to the corrosion of plumbing materials and therefore contain a greater level of contaminants from the plumbing system.



6.0 LIMITATIONS

This investigation focused on lead in drinking water only. No other heavy metals or additional contaminants were sampled for or analyzed. Lead concentrations can change as water continues to move through the water system.

Each sample was a grab sample and represents lead concentrations only at the specific time of collection and may vary based on the water usage in the Facility. Interpretation of these results is only valid if the facility is serviced by a municipal water supplier or water utility.

This lead sampling event was in response to the amendments to N.J.A.C. 6A:26, Educational Facilities dated July 13, 2016, which requires testing for lead in the drinking water of public school districts.

7.0 CLOSING

Thank you for using Karl to assist you with this project. Please do not hesitate to call if you have any questions relating to this report or for any other environmental health and safety concerns.

Respectfully submitted,
Karl Environmental Group

A handwritten signature in black ink, appearing to read "Varsha", enclosed within a circular scribble.

Varsha Swaminathan
Industrial Hygienist
Karl Environmental Group
Office: (610)-856-7700
Fax: (610)-856-5040
Cell: 484-269-7870
Email: vswaminathan@karlenv.com



Attachment A

Laboratory Analysis Results and Chains of Custody