



*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 #: 20-0779**

October 27, 2020

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

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Supervisor of Buildings & Grounds
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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 #: 20-0779**

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 October 1.

1.0 PROJECT BACKGROUND

Karl Environmental was contacted 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 determine if any sampled drinking water sources exhibit 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).

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 October 12, 2020:

A Building:

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

B Building:

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

C Building:

- One (1) Field Blank Sample
- Nineteen (19) First Draw Samples

D Building:

- One (1) Field Blank Sample
- Seven (7) First Draw Samples

E Building & Admin Building (Same Supply):

- One (1) Field Blank Sample
- Five (5) First Draw Samples

F Building & G Building (Same Supply):

- One (1) Field Blank Sample
- Twelve (12) First Draw Samples

H Building:

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



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4.0 DRINKING WATER ANALYSIS RESULTS

The analytical lead in drinking water results for each first draw sample are listed in Tables 1-7, below:

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

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	33.8	Yes
SVT-WC-A104	Water Cooler	2.29	No
SVT-WC-A106	Water Cooler	1.30	No
SVT-WC-A105	Water Cooler	<1.00	No
SVT-FB-A105	Bottle Filler	<1.00	No
SVT-WC-A107	Water Cooler	<1.00	No
SVT-FB-A107	Bottle Filler	<1.00	No
SVT-WC-A110	Water Cooler	4.16	No
SVT-WC-A109	Water Cooler	3.37	No
SVT-WC-A112	Water Cooler	<1.00	No
SVT-WC-A108	Water Cooler	<1.00	No
SVT-WC-A111	Water Cooler	<1.00	No
SVT-BLANK-BLDG A	Field Blank	<1.00	No

*Bold indicates the sample exceeded the regulatory action level

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

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC-HALLB108C	Water Cooler	9.97	No
SVT-WC-HALLB102	Water Cooler	<1.00	No
SVT-S-B100	Sink	<1.00	No
SVT-WC-HALLB211	Water Cooler	<1.00	No
SVT-FB-HALLB211	Bottle Filler	<1.00	No
SVT-KS-B100	Kitchen Sink	2.40	No
SVT-BLANK-BLDG B	Field Blank	<1.00	No



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

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC-BUILDC-LOBBY	Water Cooler	<1.00	No
SVT-FB-BUILDC-LOBBY	Bottle Filler	<1.00	No
SVT-CM1-PREP.KIT.20	Coffee Machine	12.7	No
SVT-IM-PREP.KIT	Ice Machine	<1.00	No
SVT-CM2-PREP.KIT	Coffee Machine	<1.00	No
SVT-SK1-CUL.ART.KIT	Kitchen Sink	6.04	No
SVT-SO1-CUL.ART.KIT28	Sink Outlet	9.43	No
SVT-SO2-CUL.ART.KIT21	Sink Outlet	<1.00	No
SVT-SO3-CUL.ART.KIT26	Sink Outlet	102	Yes
SVT-SK2-CUL.ART.KIT22	Kitchen Sink	20.3	Yes
SVT-SK3-CUL.ART.KIT23	Kitchen Sink	1.05	No
SVT-SO4-CUL.ART.KIT24	Sink Outlet	1.59	No
SVT-SO1-CUL.ART.INSTR30	Sink Outlet	2.20	No
SVT-IM-CUL.ART.INSTR29	Ice Machine	<1.00	No
SVT-SO2-CUL.ART.INSTR31	Sink Outlet	19.2	Yes
SVT-CUST-BLDGC	Outlet	<1.00	No
SVT-SO1-32	Sink Outlet	16.2	Yes
SVT-CM-01	Coffee Machine	23.2	Yes
SVT-WC-CAFE34	Water Cooler	11.4	No
SVT-BLANK-BLDG C	Field Blank	<1.00	No

*Bold indicates the sample exceeded the regulatory action level

Table 4: Analytical Lead Results for First Draw Water Samples Collected from D Building

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC1-HALLD121-35	Water Cooler	<1.00	No
SVT-WC2-HALLD121-36	Water Cooler	<1.00	No
SVT-WC-HALLD100	Water Cooler	<1.00	No
SVT-FB-HALLD100	Bottle Filler	<1.00	No
SVT-WC1-HALLD224-38	Water Cooler	<1.00	No
SVT-WC2-HALLD224-39	Water Cooler	<1.00	No
SVT-WC-HALLD132	Water Cooler	<1.00	No
SVT-BLANK-BLDG D	Field Blank	<1.00	No



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Table 5: Analytical Lead Results for First Draw Water Samples Collected from E Building & Admin

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-S-ADMIN.KIT	Sink	<1.00	No
SVT-WC-ADMIN.KIT	Water Cooler	<1.00	No
SVT-WC-HALL-AD202	Water Cooler	<1.00	No
SVT-WC-HALL-E107	Water Cooler	1.98	No
SVT-WC-E109	Water Cooler	<1.00	No
SVT-BLANK-BLDG E/ADMIN	Field Blank	<1.00	No

Table 6: Analytical Lead Results for First Draw Water Samples Collected from F Building & G Building

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC-HALLF103-45	Water Cooler	<1.00	No
SVT-WC-F103	Water Cooler	<1.00	No
SVT-WC-HALLF109A-47	Water Cooler	8.31	No
SVT-WC-HALLF207-48	Water Cooler	47.6	Yes
SVT-WC-HALLF202-49	Water Cooler	<1.00	No
SVT-S-F103-46	Sink	<1.00	No
SVT-WC-HALLG101B	Water Cooler	<1.00	No
SVT-FB-HALLG101B	Bottle Filler	<1.00	No
SVT-S-TRAININGRM-51	Sink	4.41	No
SVT-IM-TRAININGRM-52	Ice Machine	<1.00	No
SVT-WC-WOMEN.LOCKER	Water Cooler	3.52	No
SVT-WC-GYMLOBBY-54	Water Cooler	<1.00	No
SVT-BLANK-BLDG F/G	Field Blank	<1.00	No

*Bold indicates the sample exceeded the regulatory action level

Table 5: Analytical Lead Results for First Draw Water Samples Collected from H Building

Sample I.D.	Type of Collection Point	Lead Concentration (ppb)	Above Regulatory Action Level?
SVT-WC-HEADHOUSE	Water Cooler	2.02	No
SVT-BLANK-BLDG H	Field Blank	<1.00	No

All laboratory analytical results were compared to the Regulatory Action Level of 15 ppb (µg/L) for lead. Analysis of lead in the first draw drinking water samples indicated that at the time of the sampling event, seven (7) outlets from the Facilities exhibited lead levels above the Action Level. Laboratory analysis results and chains of custody are included in Attachment A.



5.0 CONCLUSIONS & RECOMMENDATIONS

Karl Environmental collected seventy-one (71) first draw samples from drinking water sources throughout the Somerset County Vocational & Technical School Facilities. First draw sample results indicated that seven (7) of the samples collected exhibited lead levels above the Regulatory Action Level of 15 ppb. The the following recommendations at this time:

- Outlets that exceeded the regulatory action level should be retested via follow-up flush draw sampling.
- 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 "Jake Edwards".

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Attachments:

A – Laboratory Analysis Results and Chains of Custody