April 10, 2019

Monroe County Board of Education
205 Oak Grove Road
Madisonville, Tennessee 37354

Attention:

Reference: **Report of Potable Water Sampling and Analysis for Lead**
Madisonville Middle School
175 Oak Grove Road
Madisonville, Monroe County, Tennessee
S&ME Project No. 4143-19-030

S&ME, Inc. (S&ME) is pleased to submit this letter report of potable water sampling and analysis services. The sampling was conducted under Purchase Order No. 84193 dated March 25, 2019.

Methods

S&ME conducted limited potable water sampling and analysis for lead in the drinking water supplied to the Madisonville Middle School, 175 Oak Grove Road, Madisonville, Tennessee. Monroe County has previously indicated to S&ME that the Monroe County Schools is equipped with approximately 73 total fixtures (drinking fountains) requiring drinking water lead sampling. During the sampling, Monroe County School personnel identified fixtures in each school facility to be sampled by S&ME personnel. A total of nine fixtures were sampled and tested for total lead at this school.

The purpose of this sampling and analysis effort is to gather analytical data to comply with the January 1, 2019 implementation of the State of Tennessee Public Chapter No. 977, which describes a directive for schools to test lead levels in drinking water sources in facilities constructed before January 1, 1998. A copy of this Bill is included as an attachment to this report for reference.

S&ME's Ms. Sarah Klasek collected water samples from the nine fixtures on March 28, 2019. Monroe County School personnel provided escort. The sampling was conducted after the water had been standing in plumbing components overnight as directed in the State of Tennessee Public Chapter No. 977. The sampling was conducted in a manner consistent with the Environmental Protection Agency (EPA) *3Ts: Training, Testing, Taking Action recommended tap sampling procedures* for purposes of testing for lead in the outlet (e.g., faucet, fixture, or water fountain) or behind the wall (e.g., in the interior plumbing) at schools. The EPA guidance specifies sampling fixtures after an 8 to 18-hour stagnation period for water to remain in pipes, sampling first from the fixture located closest to the main water service source, moving outward, then to upper floors, where present. The sampling was conducted during Spring Break when students were not present as to allow the specified stagnation period.

A first-draw sample was collected for chemical laboratory analysis from each potable water fixture identified in the table below. The approximate locations of the sampled fixtures is shown on the attached Figure. The water

samples were collected in wide-mouthed laboratory-prepared 250 milliliter (mL) sterile screw-capped polypropylene bottles from each selected fixture. The samples were properly labeled, stored, and submitted under chain-of-custody to Pace Analytical for chemical laboratory analysis. The samples were analyzed for total lead using *EPA Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) Method 200.8, Rev. 5.4 (1994) for lead in drinking water* in the Mount Juliet, Tennessee laboratory. Laboratory accreditation documentation is included in Attachment 1. The State of Tennessee list of laboratories approved for drinking water analyses can be found at https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/drinking-water-redirect/lab-certification-program.html.

Results

The analytical results are compared to the US EPA Primary Drinking Water Standard Action Level for lead of 15 parts per billion (ppb) and the 20 ppb threshold limit stated in the State of Tennessee Public Chapter 977.

The laboratory-reported lead concentrations, summarized in Table 1 below, identify two (2) fixtures which exceeds the EPA lead Action Level of 15 ppb and the Public Chapter 977 threshold of 20 ppb. The laboratory analytical report is attached.

Table 1 – Summary of Potable Water Sampling for Lead Results

Sample Number	Sample ID/ Location	Date Collected	Time Collected	Fixture	Result (ppb)
1	01/ENTRANCE/WC6	03/28/2019	10:15	Drinking Fountain	<1.00
2	02/CAFETERIA/WC8	03/28/2019	10:18	Drinking Fountain	<1.00
3	03/CAFETERIA/WC5	03/28/2019	10:21	Drinking Fountain	<1.00
4	**04/OUTSIDE LIBRARY/WC4**	**03/28/2019**	10:24	Drinking Fountain	**98.3**
5	**05/OUTSIDE SPECIAL ED**	**03/28/2019**	10:28	Drinking Fountain	**49.1**
6	06/OUTSIDE NURSERY/WC2	03/28/2019	10:30	Drinking Fountain	6.68
7	07/OUTSIDE GYM/WC10	03/28/2019	10:34	Drinking Fountain	<1.00
8	08/OUTSIDE SRO/WC11	03/28/2019	10:38	Drinking Fountain	<1.00
9	09/OUTSIDE RM 25B/WC12	03/28/2019	10:40	Drinking Fountain	<1.00

Notes: Reported concentrations compared to EPA Drinking Water Standard Action Level = 15 ppb
Shaded Dark Gray/Bold: ≥20 ppb
<= Below Method Detection Limit, not detected at Estimated Quantitation Limit (EQL)

The analytical results derived from the fixtures sampled indicate total lead concentrations ranging from <1.00 ppb to 98.3 ppb.

Lead concentrations in water from two of the sampled fixtures [04/OUTSIDE LIBRARY/WC4 and 05/OUTSIDE SPECIAL ED] exceeds the EPA Action Level for lead of 15 ppb and the State lead threshold of 20 ppb.

State of Tennessee Public Chapter No. 977 states that:

> *"(3) If the result of a lead level test conducted under subdivision (a)(1) is equal to or exceeds twenty parts per billion (20 ppb), the school shall:*
>
> *(A) Immediately remove the drinking water source from service. The drinking water source shall remain unavailable for use until subsequent retesting under subdivision (a)(3)(C) confirms the lead level of water from the source does not exceed twenty parts per billion (20 ppb);*
>
> *(B) Notify:*
>
> *(i) The commissioner of environment and conservation, the commissioner of health, the local department of health, the local governing body, and the department of education within twenty-four (24) hours of the test result; and*
>
> *(ii) The parents and guardians of students enrolled at the school, in accordance with a notification policy developed by the local board of education, within five (5) business days of the test result; and*
>
> *(C) Retest the lead level of the drinking water source within ninety (90) days of any corrective action."*

In accordance with the statute, Section 1 (a)(1) of Tennessee Code Annotated, Title 49, Chapter 2, Part 1, indicates that the remaining fixtures with total lead concentrations less than 15 ppb, should be subjected to *"...at a minimum, periodic, not to exceed biennial, testing of lead levels in drinking water sources..."*

We appreciate the opportunity to provide our services. Please feel free to contact us if you have questions or need additional information.

Sincerely,
S&ME, Inc.

Jessica J. Hussey, PG
Project Scientist

Eric M. Solt, PG
Area Manager

Attachment 1: Figure 1 - Potable Water Fixture Sample Locations
Laboratory Analytical Report
Attachment 2: State of Tennessee Public Chapter No. 977