EFI Global Inc.
5024 Campbell Blvd, Suite F
White Marsh, MD 21236

Mercury Vapor Assessment Report

Project Location:

Northfield Elementary School
9125 Northfield Rd,
Ellicott City, MD 21042

Prepared For:

Howard County Public School System
10910 Clarksville Pike
Ellicott City, MD 21042

EFI Global File No.: 048.04596

August 27, 2024

August 27, 2024

Christopher Madden, CIH
Office of the Environment
Howard County Public School System
10910 Clarksville Pike, Ellicott City, MD 21042

RE: **Mercury Vapor Assessment Report**
Northfield Elementary School
9125 Northfield Rd, Ellicott City, MD
EFI Project No. 048.04596

Dear Mr. Madden,

EFI Global, Inc. (EFI) was retained by HCPSS to conduct mercury vapor testing at the referenced location where a mercury-containing gym floor had been removed. The testing was to confirm mercury vapor has been sufficiently removed or controlled.

ASSESSMENT METHOD

Mercury Vapor Sampling

EFI conducted air sampling on August 14, 2024, for approximately 8 hours in three locations in the gym. Sampling was conducted at breathing zone height using filter tubes specifically designed for mercury vapor and calibrated low volume pumps. The samples were submitted to SGS Galson and analyzed in accordance with NIOSH Method 6009. SGS Galson is accredited by the American Industrial Hygiene Association (AIHA). Sample locations included the center, the south side, and the northeast corner of the gym. Ventilation or air conditioning equipment were not operating during the sampling, and all doors and windows were closed to avoid outdoor air intrusion.

Mercury generally evaporates slowly from building materials, and the rate of evaporation increases when temperatures rise. Temperatures above 70° F are ideal for mercury vapor monitoring: therefore, sampling was conducted when outdoor temperatures were expected to be greater than 80° F. Indoor temperature measurements were collected during the monitoring period.

There are no federal or Maryland state regulations regarding rubberized gym flooring containing mercury. The HCPSS has adopted widely accepted guidelines from the Minnesota Department of Health and New Jersey Department of Health which indicate that indoor air concentrations below 750 nanograms per cubic meter (ng/m^3) or 0.75 $\mu g/m^3$ are protective of preschool-aged children, and thus also deemed safe for older children and adults. The Agency for Toxic Substances and Disease Registry (ATSDR) has established 1 $\mu g/m^3$ as an acceptable concentration for normal occupancy for most sensitive persons regardless of age.

RESULTS

Temperature measurements in the gym were collected using a TSI QTrak 7585 Monitor and ranged from 75.6 to 77.6° F on the day of sampling. These temperatures were considered sufficiently above room temperature for mercury vapor investigation purposes. Mercury vapor was not detected in the samples collected in the gym. Laboratory analytical data is provided in **Attachment A** and summarized in **Table 1** below.

CONCLUSIONS AND RECOMMENDATIONS

Mercury vapor was not detected in the air samples collected and estimated airborne concentrations were below the target concentration (0.75 µg/m^3) and the limit of detection for the analytical method (0.34 – 0.37 µg/m^3). No further action is recommended.

LIMITATIONS

EFI provided these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. This report is intended for the sole use of the client.

CLOSING

EFI appreciates this opportunity to provide environmental services for HCPSS. If you require additional information or have questions regarding the contents of this report, please contact either of the undersigned.

Sincerely,
EFI Global, Inc.

Julie Barth, CIH, CSP, LEED Green Associate
Senior Industrial Hygienist-CIH/Project Manager

Danielle Schaefer, CMI
District Environmental Principal

Attachments: Attachment A –Laboratory Analytical Report and Chain of Custody

ATTACHMENT A

LABORATORY ANALYTICAL REPORT AND CHAIN OF CUSTODY

SGS GALSON

Julie Barth
EFI Global
926 Slash Pine CT
Sykesville, MD 21784

August 21, 2024

Account# 39857

Login# L634740

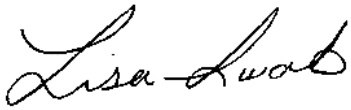
Dear Julie Barth:

Enclosed are the analytical results for the samples received by our laboratory on August 16, 2024. All samples on the chain of custody were received in good condition unless otherwise noted. Any additional observations will be noted on the chain of custody.

Please contact client services at (888) 432-5227 if you would like any additional information regarding this report. Thank you for using SGS Galson.

Sincerely,

SGS Galson



Lisa Swab
Laboratory Director

Enclosure(s)

Terms and Conditions & General Disclaimers

- This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

- Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Analytical Disclaimers

- Unless otherwise noted within the report, all quality control results associated with the samples were within established control limits or did not impact reported results.

- Note: The findings recorded within this report were drawn from analysis of the sample(s) provided to the laboratory by the Client (or a third party acting at the Client's direction). The laboratory does not have control over the sampling process, including but not limited to the use of field equipment and collection media, as well as the sampling duration, collection volume or any other collection parameter used by the Client. The findings herein constitute no warranty of the sample's representativeness of any sampled environment, and strictly relate to the samples as they were presented to the laboratory. For recommended sampling collection parameters, please refer to the Sampling and Analysis Guide at www.sgsgalson.com.

- Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

- The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

- Unless otherwise noted within the report, results have not been blank corrected for any field blank or method blank data.

Accreditations SGS Galson holds a variety of accreditations and recognitions. Our quality management system conforms with the requirements of ISO/IEC 17025. Where applicable, samples may also be analyzed in accordance with the requirements of ELAP, NELAC, or LELAP under one of the state accrediting bodies listed below. Current Scopes of Accreditation can be viewed at http://www.sgsgalson.com in the accreditations section of the "About" page. To determine if the analyte tested falls under our scope of accreditation, please visit our website or call Client Services at (888) 432-5227.

National/International	Accreditation/Recognition	Lab ID#	Program/Sector
AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP	ISO/IEC 17025 and USEPA NLLAP	Lab ID 100324	Industrial Hygiene, Environmental Lead, Environmental Microbiology

State	Accreditation/Recognition	Lab ID#	Program/Sector
New York (NYSDOH)	ELAP and NELAC (TNI)	Lab ID: 11626	Air Analysis, Solid and Hazardous Waste
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials

Legend

< - Less than	mg - Milligrams	MDL - Method Detection Limit	ppb - Parts per Billion
> - Greater than	ug - Micrograms	NA - Not Applicable	ppm - Parts per Million
l - Liters	m3 - Cubic Meters	NS - Not Specified	ppbv - ppb Volume
LOQ - Limit of Quantitation	kg - Kilograms	ND - Not Detected	ppmv - ppm Volume
ft2 - Square Feet	cm2 - Square Centimeters	in2 - Square Inches	ng - Nanograms

SGS GALSON

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

LABORATORY ANALYSIS REPORT

Client : EFI Global
Site : NORTHFIELD ES
Project No. : NORTHFIELD ES GYM
Date Sampled : 14-AUG-24
Date Received : 16-AUG-24

Account No.: 39857
Login No. : L634740

Date Analyzed : 21-AUG-24
Report ID : 1442837

Mercury, Vapor

Sample ID	Lab ID	Air Vol liter	Total ug	Conc mg/m3
NES-01	L634740-1	82.1	<0.030	<0.00037
NES-02	L634740-2	87	<0.030	<0.00034
NES-03	L634740-3	87	<0.030	<0.00034

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.030 ug
Analytical Method : mod. NIOSH 6009; CVAA TUBE
Collection Media : 226-17-1A

Submitted by: CAW
Date : 21-AUG-24
Supervisor : JJL

Approved by: JJL

SGS GALSON

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

LABORATORY FOOTNOTE REPORT

Client Name : EFI Global
Site : NORTHFIELD ES
Project No. : NORTHFIELD ES GYM

Date Sampled : 14-AUG-24
Date Received: 16-AUG-24
Date Analyzed: 21-AUG-24

Account No.: 39857
Login No. : L634740

L634740 (Report ID: 1442837):
For applicable NYS sampling events, laboratory accreditation through NYSDOH applies only to Lead results.
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: im-hgair(32), MT-SOP-20(22)

L634740 (Report ID: 1442837):
Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Parameter	Accuracy	Mean Recovery
Mercury, Vapor	+/-17.7%	102%

278337688551
Date:08/16/24
Shipper:FEDEX
Initials:BMC
Prep:UNKNOWN

L634740

39

CHAIN OF CUSTODY

Turn Around Time (TAT)	surcharge
☒ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same Day	200%

Client Acct No.: 39857

Original Prep No.: PSY750595

Online COC No.: 303407

Report To: Julie Barth
Company Name: EFI Global
Address 1: 926 Slash Pine CT
Address 2:
City, State Zip: Sykesville, MD 21784
Phone No.: 443-725-6425
Cell No.:
Email reports to: julie.barth@efiglobal.com
Email EDD to: julie.barth@efiglobal.com
Comments:

Invoice To: Carolyn Verb
Company Name: EFI Global
Address 1: 5024 Campbell Blvd
Address 2: Suite F
Company Name: Nottingham, MD 21236
Phone No.: 443-613-6654
Email Address: carolyn.verb@efiglobal.com,julie.barth@efiglobal.com
Comments:
P.O. No.:
Payment info.: ☐ I will call SGS to provide credit card info
☐ Card on File (enter the last five digits on the line below)

Comments:

State Sampled: MD ☐ MSHA

Site Name: Northfield ES
Project: ~~OCLC~~ Northfield ES Gym
Sampled By: JB
List description of industry or Processes/Interfaces present in sampling area: post gym floor removal

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume / Sample Time / Sample Area	Liters / Minutes / in², cm², ft²	Analysis Requested	Method Reference	Internal Notes
NGS-01	08-14-24	226-17-1A	0.17 lpm	82.1	Mercury, Vapor	mod. NIOSH 6009; CVAA TUBE	
NGS-02	↓	226-17-1A	0.18 lpm	87.0	Mercury, Vapor	mod. NIOSH 6009; CVAA TUBE	
NGS-03	↓	226-17-1A	0.18 lpm	87.0	Mercury, Vapor	mod. NIOSH 6009; CVAA TUBE	

☐ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time		Print Name / Signature	Date	Time
Relinquished By:	Julie Barth	8/15/24		Received By:	Brian Caruso	8/16/24	1102
Relinquished By:				Received By:			

Samples received after 3pm will be considered as next day's business.

Online COC No. :303407
Prep No. :PSY750595
Account No. :39857
Finalized :08/09/2024 13:29:41

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/en/Terms-and-Conditions.aspx

SGS North America Inc. | 6601 Kirkville Road E. Syracuse, NY 13057, USA t +1 888 432 5227 | +1 315 432 5227 | www.galsonlabs.com | www.sgs.com