ENVIRONMENTAL CONNECTION INC
A Vertical Technologies Corporation

January 7, 2020

Ms. Ann Degnan, CEFM
Facilities Manager
Long Branch Public Schools
540 Broadway
Long Branch, New Jersey 07740

via Email: adegnan@longbranch.k12.nj.us

Re: Mercury Vapor Investigation Report

Facility: Joseph M. Ferraina Elementary School – All-Purpose Room
80 Avenel Boulevard
Long Branch, New Jersey 07740

EC Project #: 19407-02

Section 1.0 Executive Summary

Environmental Connection, Inc. (EC) was contracted by the Long Branch Board of Education (LBBOE) to perform an investigation of the Joseph M. Ferraina Elementary School "All-Purpose Room" for the presence of Mercury Catalyzed Polyurethane Flooring (MCPF). The investigation was a multi-phase study to determine if flooring in the All-Purpose Room (APR) is MCPF and if to measure resultant mercury vapor concentrations in the space. Tasks performed during the investigation included the collection of bulk floor samples to be analyzed for Mercury content and the collection of Mercury Vapor air samples. Air samples were collected utilizing integrated sampling techniques and instantaneous direct read instrumentation. The recorded air sampling results are representative of concentrations present during "normal operating conditions" with the Heating Ventilation and Air Conditioning (HVAC) system active.

Based on the bulk sample analysis results, the flooring in the APR is a MCPF product. Upon receipt and subsequent review of the analytical results with the LBBOE, EC was directed by the LBBOE to collect mercury vapor air samples in the APR. Mercury vapor concentrations were highest when measured within twelve (12) inches of the floor. Breathing zone measurements, collected approximately forty (40) inches above the floor, were considerably lower.

Air sample results were compared to applicable threshold criteria established by Federal, State, and Non-Governmental agencies. Levels detected during the investigation did not rise above the threshold deemed protective of preschool-aged children, 0.8µg/m^3 of air, established by the New Jersey Department of Health (NJDOH) in the document titled *Guidance for New Jersey Schools: Evaluating Mercury in Synthetic Flooring*. Though not regulatorily applicable, the results were also compared to criteria established by the Minnesota Department of Health and the State of California Office of Environmental Health and Hazard Assessment (OEHHA) for reference. Further discussion of the comparison criteria is included in Section 4.0 of this report.

Based on the findings of the investigation, EC recommends engaging a mechanical contractor to evaluate the HVAC systems in the APR. Studies conducted by the Minnesota Department of Health concluded that "After the ventilation is turned on, the mercury vapor concentration decreases relatively rapidly over a 1-2 hour period". Based on this guidance, EC recommends automating the HVAC system to continuously

ventilate the APR or, at minimum, begin ventilation two (2) hours before occupants arrive. The HVAC system should operate continuously while the APR is occupied.

EC recommends periodic air monitoring in the APR and surrounding spaces, until the MCPF is removed. Removal of the MCPF should be completed utilizing engineering controls to prevent mercury vapor migration from the work area.

The following sections document the methodology and findings of the investigation.

Section 2.0 Background

MCPF is a rubber-like polyurethane floor covering commonly installed in gymnasiums as an alternative to hardwood flooring. Installation of MCPF entailed pouring a liquid polyurethane mixture over the sub-floor and allowing it to cure or solidify. Mercury containing compounds were included in the polyurethane mixture as a catalyst to the curing process. Use of the mercury catalyzed curing process began in the 1960s. The practice was largely discontinued in the mid-1980s and 1990s due to concerns regarding mercury vapor emissions and associated adverse health effects. Briefly, mercury vapor emission is a function of surface area, temperature, mercury concentration, and time, among other factors. Studies performed by the Minnesota Department of Health and the United States Environmental Protection Agency (USEPA) in conjunction with the Agency for Toxic Substances and Diseases Registry (ATSDR) have shown that temperature may be the most important factor dictating mercury volatility and resultant vapor pressure and concentration. It should be noted that not all mercury containing floor products emit mercury vapor and that some rubber-like resilient floor coverings do not contain mercury. These non-mercuric floor coverings are visually indistinguishable from MCPF, and as such, bulk sampling and analysis are necessary to determine the presence or absence of mercury.

Section 3.0 Bulk Sampling

On December 5, 2019, EC collected two (2) bulk samples of the polyurethane floor covering from the All-Purpose Room. The samples encompassed all flooring layers present down to the concrete substrate. The samples were submitted to EMSL Analytical, Inc. in Cinnaminson, New Jersey for analysis. EMSL is a National Environmental Laboratory Accreditation Program (NELAP) and American Industrial Hygiene Association (AIHA) accredited laboratory. Bulk sample analysis was performed via USEPA Test Method 7471B. The analytical results are summarized in Table 1 below.

Table 1 - Bulk Sample Analytical Results Summary
Joseph M. Ferraina School – All Purpose Room

Location	Results (mg/kg)
Northeast Side of All-Purpose Room	46
Southwest Side of All-Purpose Room	20

mg/kg - milligrams/kilogram

Analysis of the samples revealed the presence of Mercury. Currently, the New Jersey Department of Health does not offer recommendations regarding subsequent steps following the discovery of mercury in flooring. However, the Minnesota Department of Health (MDH) guidance document titled *Mercury Flooring Testing and Mitigation: Guidance for Environmental Professionals* states:

> "If the floor contains less than 20 ppm (parts per million) mercury, it is unlikely that exposure to mercury vapor in the gym could reach levels of concern …
> If the floor contains 20 ppm mercury or more, the mercury vapor concentration in the gym may approach or exceed levels of health concern under some conditions. Therefore, MDH recommends testing the mercury vapor concentration in these gyms under a variety of conditions …"

The MDH guidance document references parts per million (ppm). Milligrams per kilogram (mg/kg) and ppm are equivalent units (1 mg/kg = 1 ppm). Therefore, the results of the bulk sampling could also be reported at 46 ppm and 20 ppm respectively.

The Laboratory Analytical Certificates are included in Attachment I of this report. Based on the results of the bulk floor sampling and in accordance with the LBBOE's directive, EC proceeded to collect mercury vapor air samples in the APR.

Section 4.0 Mercury Vapor Air Sampling

Mercury vapor air sampling was performed in accordance with National Institute of Occupational Safety and Health (NIOSH) Method 6009. Method 6009 is the USEPA accepted post-mercury cleanup clearance sampling method. Samples were collected utilizing sorbent tubes and calibrated sampling pumps at a height of approximately 40 inches above the floor, the approximate breathing zone of the target population. Samples were collected under conditions representative of "normal operating conditions" with the HVAC active. The analytical results are summarized in Table 2 below.

Table 2 – Mercury Vapor Analytical Results Summary
Joseph M. Ferraina School – All-Purpose Room

Sample Location	Results (µg/m^3)	NJDOH* (µg/m^3)	ATSDR (µg/m^3)	OSHA Ceiling PEL (µg/m^3)	NIOSH REL (µg/m^3)	ACGIH TLV (µg/m^3)
Northwest Corner of APR	0.12	0.8	≤3	100	50	25
Northeast Stage	0.13					
Center of APR Floor	0.12					
Southwest Corner adj. to Kitchen	ND					

ND – None Detected

*Per NJDOH, the 0.8 ug/m^3 threshold is "based on the exposure scenario in the risk model that is protective of pre-school aged children."

The analytical results were compared to the threshold criteria established by the New Jersey Department of Health (NJDOH), Agency for Toxic Substances and Diseases Registry (ATSDR)), Occupational Safety and Health Administration (OSHA), National Institute of Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH). Each entity has established its own threshold criteria representative of acceptable/permissible mercury exposure levels. All samples collected during the investigation contained lower mercury concentrations than the threshold criteria referenced in Table 2.

The referenced OSHA Ceiling PEL is applicable to adult workers that may be exposed to mercury vapor. Workers are not permitted to be exposed above the Ceiling PEL for any amount of time. By contrast the NIOSH REL and ACGIH TLV are time weighted averages that may be exceeded periodically throughout the measurement period as long as the average remains below the threshold value. The REL and TLV are the levels below which workers can be exposed for the length of their career without experiencing adverse health effects, according to NIOSH and ACGIH. The ATSDR threshold is the spill cleanup guidance standard for schools and suggests that after a mercury spill and subsequent remediation airborne concentrations of mercury vapor be equal to or less than 3 µg/m^3 prior to "resuming normal operations".

Similar to the ATSDR, the Minnesota Department of Health (MDOH) has developed a guidance standard specifically for schools based on long-term exposure. MDOH recommends that student exposure be limited to 0.75µg/m^3 for 16 hours or less per week averaged over the school year.

Finally, the California Office of Environmental Health and Hazard Assessment references Recommended Exposure Limit of 0.06µg/m^3 averaged over an 8-hour period. The OEHHA promulgated threshold criteria is ten (10) times lower than the State of New Jersey preschool standard and more than one hundred times lower than the lowest non-governmental agency standard.

The Laboratory Analytical Certificates are included in Attachment II of this report.

Section 5.0 Direct Reading Mercury Vapor Analyzer

Real-time mercury vapor measurements were collected during the investigation. Measurements were collected utilizing a direct read handheld Lumex RA 915M mercury vapor analyzer. The Lumex detects mercury vapor concentrations as low as 2 nanograms per cubic meter (ng/m^3) or 0.002µg/m^3 utilizing Zeeman Atomic Absorption Spectrometry. Measurements were collected in the breathing zone and approximately twelve (12) inches above the All-Purpose Room floor. Unlike the results of the Method 6009 sampling, the Lumex results are not averaged over a time interval and therefore are not representative of prolonged exposure levels. The results of the Lumex mercury vapor analyzer survey are summarized in Table 3 below.

Table 3 – Mercury Vapor Analyzer Measurements
Joseph M. Ferraina School – All-Purpose Room

Time	Location	Hg Reading (µg/m^3)
Morning	Exterior	0.001
	Northeast Corner of All-Purpose Room	0.030 / 0.032*
	In Front of Stage	0.037
	Corner of Room adj. to Exterior Door A2	0.033
	Center of Room	0.043 / 0.056*
	Corner adj. to Kitchen Entrance	0.039
	Main Entrance to All-Purpose Room	0.059 / 0.083*
	Northwest Corner	0.040
	Northeast Corner Storage Room	0.009
	Stage	0.018
	Air Handler Unit/Mechanical Room	0.011
	Kitchen adj. to Walk-in Freezer	0.042
	Room 302 adj. to All-Purpose Room	0.023
	Hall adj. to All-Purpose Room	0.024

Table 3 – Mercury Vapor Analyzer Measurements Joseph M. Ferraina School – All-Purpose Room		
Time	**Location**	**Hg Reading ($\mu g/m^3$)**
Mid-Morning	Exterior	0.007
	Northeast Corner of All-Purpose Room	0.050 / 0.048*
	In Front of Stage	0.051
	Corner of Room adj. to Exterior Door A2	0.055
	Center of Room	0.057 / 0.055*
	Corner adj. to Kitchen Entrance	0.054
	Main Entrance to All-Purpose Room	0.067 / 0.075*
	Northwest Corner	0.067
	Northeast Corner Storage Room	0.006
	Stage	0.035
	Air Handler Unit/Mechanical Room	0.009
	Kitchen adj. to Walk-in Freezer	0.061
	Room 302 adj. to All-Purpose Room	0.023
	Hall adj. to All-Purpose Room	0.024
Afternoon	Exterior	0.003
	Northeast Corner of All-Purpose Room	0.043 / 0.040*
	In Front of Stage	0.052
	Corner of Room adj. to Exterior Door A2	0.058
	Center of Room	0.049 / 0.063*
	Corner adj. to Kitchen Entrance	0.067
	Main Entrance to All-Purpose Room	0.071 / 0.102*
	Northwest Corner	0.057
	Northeast Corner Storage Room	0.003
	Stage	0.038
	Air Handler Unit/Mechanical Room	0.002
	Kitchen adj. to Walk-in Freezer	0.063
	Room 302 adj. to All-Purpose Room	0.020
	Hall adj. to All-Purpose Room	0.024

* - Measurement Collected Approximately 12” above Floor

The aforementioned mercury vapor analyzer measurements are not intended for use as average exposure levels. It is notable that all of the measurements recorded are below the NJDOH established criteria. While not directly comparable because the standard is a time weighted average, the direct read results support the integrated sampling findings.

Section 6.0 Conclusions and Recommendations

Based on the results of the investigation, the flooring in the All-Purpose Room is a MCPF product. Levels detected during the investigation did not rise above the threshold deemed protective of preschool-aged children, 0.8$\mu g/m^3$ of air, established by the New Jersey Department of Health (NJDOH) or established Federal and Non-Governmental Agency threshold criteria.

Based on the findings of the investigation, EC recommends automating the HVAC system to continuously ventilate the All-Purpose Room or, at minimum, begin ventilation two (2) hours before occupants arrive. The HVAC system should operate continuously while the All-Purpose Room is occupied.

EC also recommends periodic air monitoring in the All-Purpose Room and surrounding spaces, until the MCPF is removed. Removal of the MCPF should be completed utilizing engineering controls to prevent mercury vapor migration from the work area.

Should you have any questions or require additional information, please contact the undersigned at your convenience.

Respectfully Submitted:
ENVIRONMENTAL CONNECTION, INC.

Jordan Reed
Project Manager

Roland C. Jones, CIH
Vice President

Attachment 1: Analytical Report and Chain of Custody for Bulk Mercury Testing
Attachment 2: Analytical Report and Chain of Custody for Airborne Mercury Testing

ATTACHMENT 1

Analytical Report and Chain of Custody for Bulk Mercury Testing

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Jordan Reed** 12/12/2019
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608
Phone: (609) 392-4200
Fax:

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 12/6/2019. The results are tabulated on the attached data pages for the following client designated project:

Long Branch JMF Mercury

The reference number for these samples is EMSL Order #011915435. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry
Laboratory Director

The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 011915435
CustomerID: ENVI65
CustomerPO:
ProjectID:

Attn: **Jordan Reed**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Received: 12/06/19 9:00 AM

Project: **Long Branch JMF Mercury**

Analytical Results

Client Sample Description Hg JR 01-120519 ***Collected:*** 12/5/2019 7:15:00 AM ***Lab ID:*** *011915435-0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
7471B	Mercury	46		3.2 mg/Kg	12/11/2019 PV	12/11/19 0:00 PV

Client Sample Description Hg JR 02-120519 ***Collected:*** 12/5/2019 7:30:00 AM ***Lab ID:*** *011915435-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
7471B	Mercury	20		2.6 mg/Kg	12/11/2019 PV	12/11/19 0:00 PV

Definitions:

MDL - method detection limit
J - Result was below the reporting limit, but at or above the MDL
ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)
D - Dilution

Environmental Chemistry
Chain of Custody

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

EMSL Order Number (*Lab Use Only*): 011915435

PHONE:
FAX:

Report To Contact Name: JORDAN REEO		**Bill To Company:** ENVIRONMENTAL CONNECTION INC	
Company Name: ENVIRONMENTAL CONNECTION INC		**Attention To:** B. HARTMANN	
Street: 120 N WARREN ST.		**Street:**	
City: TRENTON	**State/Province:** NJ	**Zip/Postal Code:**	**City:**	**State/Province:**	**Zip/Postal Code:**
Phone: 609-392-4200	**Fax:**		**Phone:**	**Fax:**	
Project Name: LONG BRANCH JHF MERCURY		**Email Results To:** JREEO@VTIHQ.COM		**Purchase Order:**	
U.S. State where Samples Collected: NJ		**Number of Samples in Shipment:** 2		**Date of Shipment:**	
Sample for Compliance? Yes ☐ No ☒	**If yes, NPDES?** ☐	**Other (Specify):**	**PWS ID #:**	**State Reporting Required? (Y/N)** N	
Samples Collected by: EMSL ☐ Client ☒ check one		**Sampled By (Signature):**		**Samples Received Chilled? (Y/N)** N	
Standard Turnaround Time: ☐ 2 Weeks		**The following TATs are subject to lab approval:** ☒ 1 Week ☐ 4 Days ☐ 3 Days ☐ 2 Days ☐ 1 Day			

Failure to complete will hinder processing of samples				Matrix	Preservative	List Test(s) Needed								
Client Sample ID	**Comp**	**Grab**	**Collect Date/Time**	W=Water S=Soil A=Air SL=Sludge O= Other	1=HCL 2=HNO3 3=H2SO4 4=ICE 5=Other					Field pH	Field pH Test Time	Field Temp. Deg C	Field Temp. Test Time	**Comments**
1 Hg JR 01-120519	☐	☐	12.05.19 / 7:15	O	N/A	MERCURY								
2 Hg-JR 02-120519	☐	☐	12.05.19 / 7:30	O	N/A	MERCURY								
	☐	☐												
	☐	☐												
	☐	☐												

Released By (Signature)	Date & Time	Received By	Date & Time
	12.05.19		12/5/19 555
			12/6 9am

Please indicate reporting requirements: ☐ Results Only ☐ Results and QC ☐ Reduced Deliverables ☐ Disk Deliverable ☐ Other _____

Instructions or Comments:

Note: Field pH and Field Temperature are tested on the same day as the date of sample collection.

(Lab) Received Temperature: 21 °C

ZRH

ATTACHMENT 2

Analytical Report and Chain of Custody for Airborne Mercury Testing

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Mike Moore** 1/2/2020
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608
Phone: (609) 392-4200
Fax:

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 12/30/2019. The results are tabulated on the attached data pages for the following client designated project:

Long Branch Board of Education Mercury Vapor Analysis Project
19407-02 Joseph M. Ferraina Elementary School

The reference number for these samples is EMSL Order #011916187. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry Laboratory Director

AIHA LAP, LLC
ACCREDITED LABORATORY
INDUSTRIAL HYGIENE
ISO/IEC 17025:2005
www.aihaaccreditedlabs.org

AIHA-LAP, LLC-IHLAP Lab # 100194
NELAP Certification: NJ 03036; NY 10872

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 011916187
CustomerID: ENVI65
CustomerPO:
ProjectID:

Attn: **Mike Moore**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Received: 12/30/19 9:00 AM

Project: **Long Branch Board of Education Mercury Vapor Analysis Project 19407-02 Joseph M. Ferraina Elementary School**

Analytical Results

Client Sample Description 01MM122719 NW Gym Corner — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	0.00012	0.00010	mg/m³	1/2/2020 SW	1/2/2020 SW

Client Sample Description 02MM122719 NE Stage — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	0.00013	0.00010	mg/m³	1/2/2020 SW	1/2/2020 SW

Client Sample Description 03MM122719 Center of Gym Flloor — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	0.00012	0.00010	mg/m³	1/2/2020 SW	1/2/2020 SW

Client Sample Description 04MM122719 SW Gym Corner Adm. To Snack S — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0004*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	ND	0.00010	mg/m³	1/2/2020 SW	1/2/2020 SW

Client Sample Description 04MM122719 Field Blank — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0005*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	ND	0.000010	mg/tube	1/2/2020 SW	1/2/2020 SW

Client Sample Description 06MM122719 Field Blank — ***Collected:*** 12/27/2019 — ***Lab ID:*** *011916187-0006*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 011916187
CustomerID: ENVI65
CustomerPO:
ProjectID:

Attn: **Mike Moore**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Received: 12/30/19 9:00 AM

Project: **Long Branch Board of Education Mercury Vapor Analysis Project 19407-02 Joseph M. Ferraina Elementary School**

Analytical Results

Client Sample Description 06MM122719 Field Blank ***Collected:*** 12/27/2019 ***Lab ID:*** *011916187-0006*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	ND	0.000010	mg/tube	1/2/2020 SW	1/2/2020 SW

Client Sample Description 07MM122719 Field Blank ***Collected:*** 12/27/2019 ***Lab ID:*** *011916187-0007*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	ND	0.000010	mg/tube	1/2/2020 SW	1/2/2020 SW

Client Sample Description 08MM122719 Field Blank ***Collected:*** 12/27/2019 ***Lab ID:*** *011916187-0008*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
METALS						
NIOSH 6009	Mercury	ND	0.000010	mg/tube	1/2/2020 SW	1/2/2020 SW

Definitions:
MDL - method detection limit
J - Result was below the reporting limit, but at or above the MDL
ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)
D - Dilution

011916187

ENVIRONMENTAL CONNECTION INC

A Vertical Technologies Corporation

Client	:	Long Branch Board of Education	**Date**	:	December 27, 2019
Project	:	Mercury Vapor Analysis	**Tech.**	:	M. Moore
Building	:	Joseph M. Ferraina Elementary School	**Project #**	:	19407-02

AIR SAMPLE DATA COLLECTION AND ANALYSIS/ METHOD: NIOSH 6009 – Mercury

	SAMPLE IDENTIFICATION	SAMPLE LOCATION	TIME			FLOW RATE			TOTAL VOLUME
			START	END	TOTAL	S	E	A	
1	01mm122719	NW Gym Corner	0934	1734	480	0.2	0.2	0.2	96 L
2	02mm122719	NE. Stage.	0937	1737	480	0.2	0.2	0.2	96L
3	03mm122719	Center of Gym Floor.	0942	1742	480	0.2	0.2	0.2	96L
4	04mm122719	SW Gym Corner Adj. to Snack stnd.	0945	1745	480.	0.2	0.2	0.2	96L
5	05mm122719	Field Blank							
6	06mm122719	Field Blank							

CHAIN OF CUSTODY RECORD (CCR)

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	TURN AROUND TIME
[signature]	12/27/19	[signature]	12/27/19 7:45	~~1~~ Day Turn Around Time

12/30 gam

COMMENTS:

Air Sampling C-O-C.NIOSH Method 6009

Email to change TAT to 2 days. 12/30 ME

120 North Warren Street • Trenton, New Jersey 08608 • tel: 609-392-4200 • fax: 609-392-1216
5 Penn Plaza, • Suite 1972 New York, NY 10001 • tel: 212-952-7300

011916187

ENVIRONMENTAL CONNECTION INC

A Vertical Technologies Corporation

Client	:	Long Branch Board of Education	**Date**	:	December 27, 2019
Project	:	Mercury Vapor Analysis	**Tech.**	:	M. Moore
Building	:	Joseph M. Ferraina Elementary School	**Project #**	:	19407-02

AIR SAMPLE DATA COLLECTION AND ANALYSIS/ METHOD: NIOSH 6009 – Mercury

	SAMPLE IDENTIFICATION	SAMPLE LOCATION	TIME			FLOW RATE			TOTAL VOLUME
			START	END	TOTAL	S	E	A	
7	07mm122719	Field Blank							
8	08mm122719	Media Blank							

CHAIN OF CUSTODY RECORD (CCR)

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	TURN AROUND TIME
	12/27/19			1 Day Turn Around Time

COMMENTS:

Air Sampling C-O-C.NIOSH Method 6009

120 North Warren Street • Trenton, New Jersey 08608 • tel: 609-392-4200 • fax: 609-392-1216
5 Penn Plaza, • Suite 1972 New York, NY 10001 • tel: 212-952-7300