

February 28, 2022

Ms. Sarah Bell
Business Administrator/Board Secretary
Kingsway Regional &
South Harrison Twp. Elem. School Districts
213 Kings Highway
Woolwich Twp., NJ 08085

Dear. Ms. Bell,

This report summarizes the results of the February 23 – 24, 2022 routine mercury air monitoring of the South Harrison Elementary School Gym. This assessment was conducted by Mr. Richard A. Lynch, MBA, CIEC. The objectives of this assessment were to determine if the gym's overhead air handling systems are effective at controlling airborne mercury levels during the winter season thermostat settings and outdoor air introduction rates.

Executive Summary of Findings

Airborne mercury levels within the South Harrison Elementary School gym during the February 23-24, 2022, averaged $0.22 \mu\text{g}/\text{m}^3$ during after hour (unoccupied) periods, and $0.12 \mu\text{g}/\text{m}^3$ during school hours: both well below the NJ Department of Health Guideline of $0.8 \mu\text{g}/\text{m}^3$. No mercury inhalation hazard is suggested.

I. Methods

Evaluation criteria were previously described and will not be repeated herein. The following methods were observed during our January 26-27, 2022 monitoring period.

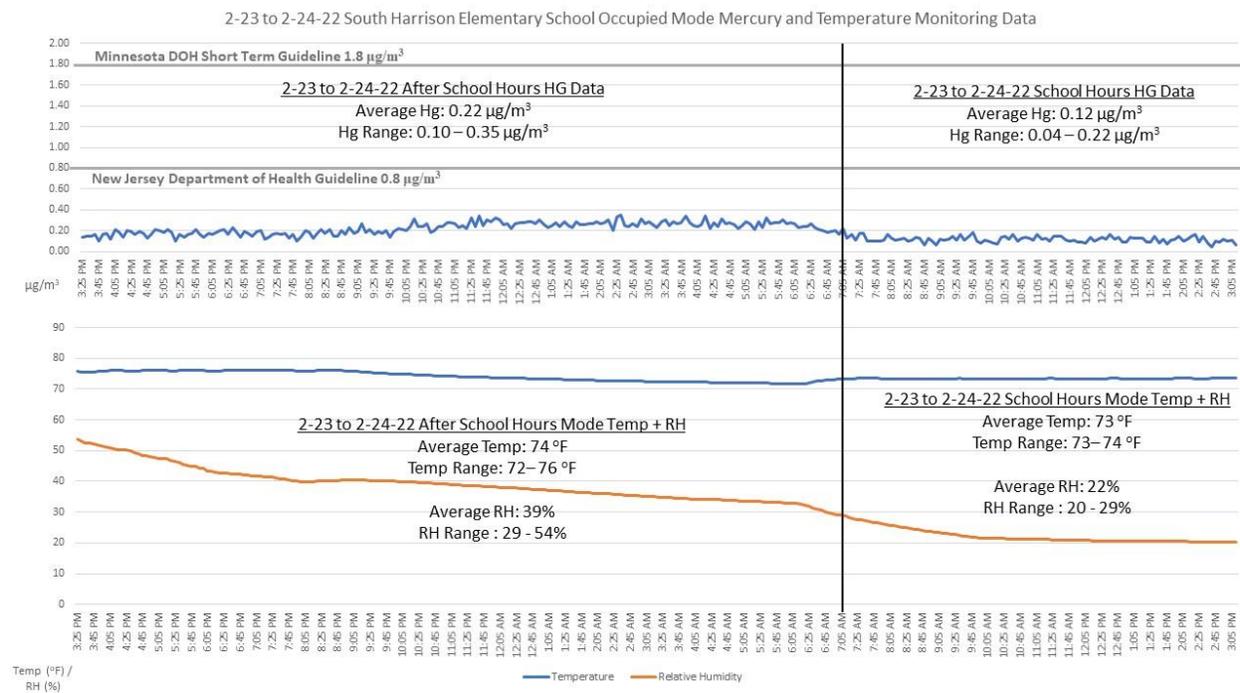
- Spot air measurements were collected within the gym and surrounding hallways and offices on February 24, 2022.
- Continuous air monitoring was conducted within the gym over an approximate 24-hour period between approximately 3:25 PM on February 23 and 3:10 PM on February 24, 2022.
- All mercury air monitoring was conducted using a calibrated Jerome J505 Mercury Vapor Analyzer with a reported detection limit of $0.05 \mu\text{g}/\text{m}^3$ which reads as low as $0.00 \mu\text{g}/\text{m}^3$ with a resolution of 0.01.
- Temperature and humidity were monitored over the same period using a TSI Q-Trak 7575 IAQ monitor.

II. Observations and Mercury Air Monitoring Findings

Findings revealed the following:

- Outdoor airborne mercury was at approximately 0.01 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Outdoor temperature ranged from 34 to 70 °F during the duration of the monitoring period.
- Spot air mercury measurements in the gym averaged 0.12 $\mu\text{g}/\text{m}^3$ (range 0.06 – 0.23 $\mu\text{g}/\text{m}^3$)
- Airborne mercury levels in the surrounding hallways and offices averaged 0.02 $\mu\text{g}/\text{m}^3$ (range 0.00 – 0.05 $\mu\text{g}/\text{m}^3$)
- Airborne mercury levels measured at the gym/stage area between 3:25 PM on 2-23 to 7:00 AM on 2-24, representing after hour exposure, **averaged 0.22 $\mu\text{g}/\text{m}^3$** (range 0.10 - 0.35 $\mu\text{g}/\text{m}^3$); below the NJDOH Guideline of 0.8 $\mu\text{g}/\text{m}^3$. Gym temperature averaged 74°F (range 72- 76 °F) during this unoccupied period. Relative humidity averaged 39%.
- Airborne mercury levels measured at the gym/stage area between 7:00 AM to 3:10 PM on 2-24, representing school hour exposure, **averaged 0.12 $\mu\text{g}/\text{m}^3$** (range 0.04 - 0.22 $\mu\text{g}/\text{m}^3$); below the NJDOH Guideline of 0.8 $\mu\text{g}/\text{m}^3$. Gym temperature averaged 73°F (range 73- 74 °F) during this monitoring period at 22% relative humidity.

Continuous air monitoring findings over the 24-hour monitoring period are shown in the Figure below:



III. Conclusions and Recommendations

Airborne mercury levels within the South Harrison Elementary School gym during the February 23-24, 2022, averaged $0.22 \mu\text{g}/\text{m}^3$ during the unoccupied evening and nighttime period, and $0.12 \mu\text{g}/\text{m}^3$ during school hours; both well below the NJ Department of Health Guideline of $0.8 \mu\text{g}/\text{m}^3$. Based upon these findings, it is our professional opinion that the gym's HVAC systems were effective at controlling airborne mercury concentrations.

Recommendations

Based upon these findings, the following recommendations should be considered

1. Continue to operate the HVAC systems on their current schedule.
2. Continue to perform non-abrasive cleaning of gym floors and other surfaces to reduce dust accumulation.

Our next monitoring will be scheduled for April 2022. Thank you for the opportunity to assist you with the evaluation. Please contact me with any questions.

Sincerely,

Richard A. Lynch

Richard A. Lynch, MBA, CIEC

Industrial Hygienist

NJ Licensed Indoor Environmental Consultant

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Reviewed and Authorized:

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