

June 29, 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 June 21st- 22nd routine mercury air monitoring of the South Harrison Elementary School Gym. This assessment was conducted by Mr. Richard A. Lynch, MBA, CIH. 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 summer season thermostat settings and outdoor air introduction rates.

Executive Summary of Findings

At the time of our inspection, one of the two gym air handlers was observed to be running. Airborne mercury levels within the South Harrison Elementary School gym during the June 21-22, 2022, averaged 0.37 $\mu\text{g}/\text{m}^3$ during school hours; below the NJ Department of Health Guideline of 0.8 $\mu\text{g}/\text{m}^3$, and averaged 0.88 $\mu\text{g}/\text{m}^3$ during after-hours evening and nighttime un-occupied periods. The afterhours levels are above the NJ Department of Health Guidelines. Based upon these findings, it is our professional opinion that the gym's HVAC system settings should be modified to ensure both HVAC systems are running simultaneously to better control temperatures when occupancy is expected during the summer months. Specific recommendations are contained at the end of this report.

I. Methods

Evaluation criteria were previously described and will not be repeated herein. The following methods were observed during our June 21st – 22nd, 2022 monitoring period.

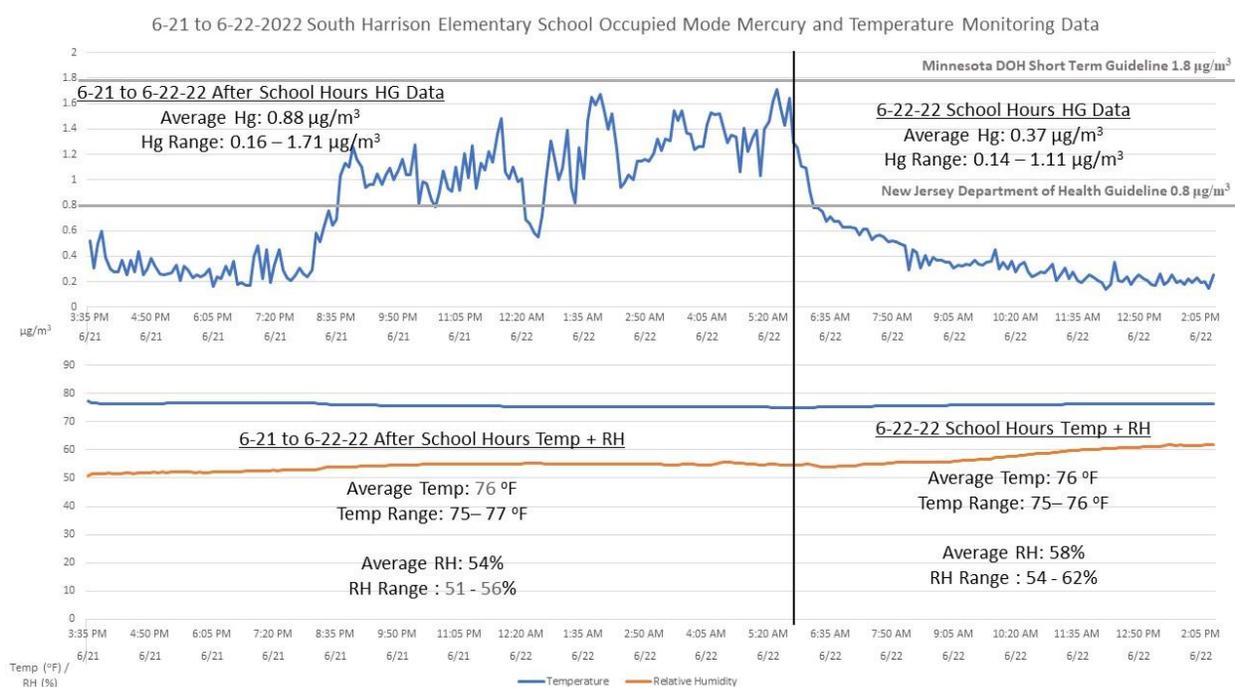
- Continuous air monitoring was conducted within the gym over an approximate 23-hour period between approximately 3:35 PM on June 21st and 2:20 PM on June 22nd, 2022.
- All mercury air monitoring was conducted using a calibrated Jerome J505 Mercury Vapor Analyzer with a reported detection limit of 0.05 $\mu\text{g}/\text{m}^3$ 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:

- During the inspection, only 1 of the 2 gym air handling units was operating. The unit closest to the stage was deactivated. This is not typical of past observations during inspections.
- Outdoor airborne mercury was at approximately 0.03 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Outdoor temperature ranged from 64 to 81 °F during the duration of the monitoring period.
- Airborne mercury levels measured during occupied periods (between 6:00 AM to 2:20 PM on 6-22, **averaged 0.37 $\mu\text{g}/\text{m}^3$** (range 0.14 - 1.11 $\mu\text{g}/\text{m}^3$) respectively; below the NJDOH Guideline of 0.8 $\mu\text{g}/\text{m}^3$.
- Airborne mercury levels during non-occupied evening nighttime periods between 3:35 PM on 6-21 to 6:00 AM on 6-22-22, **averaged 0.88 $\mu\text{g}/\text{m}^3$** (range 0.16 – 1.71 $\mu\text{g}/\text{m}^3$). Gym temperature averaged 76°F (range 75- 77 °F) during this period.

Continuous air monitoring findings over the 23-hour monitoring period are shown in the Figure below:



IV. Conclusions and Recommendations

Airborne mercury levels within the South Harrison Elementary School gym during the June 21-22, 2022, averaged 0.37 $\mu\text{g}/\text{m}^3$ during school hours; below the NJ Department of Health Guideline of 0.8 $\mu\text{g}/\text{m}^3$, and averaged 0.88 $\mu\text{g}/\text{m}^3$ during after-hours evening and nighttime un-occupied periods. The afterhours levels are above the NJ Department of Health Guidelines, and may be related to one of the 2 air handlers not running during the assessment.

Based upon these findings, it is our professional opinion that the gym's HVAC system should be

inspected to ensure proper function and settings should be modified to ensure both HVAC systems are running simultaneously to better control temperatures when occupancy is expected during the summer months.

Recommendations

Based upon these findings, the following recommendations should be considered

1. Ensure both HVAC systems are running during occupied periods during the summer months.
2. The occupied period duration interval should be increased as described in our May 2022 report.
3. Continue to perform non-abrasive cleaning of gym floors and other surfaces to reduce dust accumulation.

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

Sincerely,

Richard A. Lynch

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Reviewed and Authorized:

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