MERCURY SURVEILLANCE REPORT

Hunterdon Central Regional High School
11-12 Field House Gymnasium
9-10 Auxiliary Gymnasium
84 Route 31,
Flemington, New Jersey 08822

PREPARED FOR:
Hunterdon Central Regional High School
84 Route 31,
Flemington, New Jersey 08822

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MONTROSE PROJECT NO. 1124-30

MONTROSE ENVIRONMENTAL

December 2022

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1.0 INTRODUCTION

On December 29, 2022, Montrose Environmental conducted Mercury Periodic Surveillance (hereinafter, the "Surveillance") of the Hunterdon Central Regional High School (HCRHS) 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium located at 84 Route 31, Flemington, New Jersey 08822. Section 2.0 describes methodology; Section 3.0 includes findings of the Investigation; and Section 4.0 describes the conclusions and recommendations for Hunterdon Central Regional High School.

The gymnasiums were constructed in the 1960s, and are used frequently by students both during and after school hours for a variety of activities. It is known that mercury-containing products were used in the construction of the 11-12 Field House Gymnasium, and are suspected to be used in the construction of the 9-10 Auxiliary Gymnasium.

HCRHS has installed a new floor atop the original gymnasium floor in the 11-12 Field House, complete with a vapor barrier. No actions have been taken with regards to the 9-10 Auxiliary Gymnasium, as the observed mercury vapor levels have been well under New Jersey Department of Health (NJDOH) guidelines.

The Surveillance was conducted to evaluate whether or not mercury vapor was present above NJDOH guidelines, and if so, propose mitigation methods.

The Surveillance was completed by Montrose Project Health and Safety Specialist Ms. Jessica Perrini.

2.0 METHODOLOGY

2.1 MERCURY VAPOR SCREENING

Montrose Environmental utilized a Jerome 505 Mercury Meter to collect real-time mercury vapor concentrations within the HCRHS 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium. Vapor screening was conducted randomly across both gymnasiums. Montrose Environmental has previously conducted extensive Mercury Vapor Screening for both gymnasiums, and utilized the grid patterns from those screenings for location identification purposes. The grid layouts used for reference are attached as **Figures 1 and 2**. Readings were biased to areas likely to give off mercury vapors, i.e. areas where the floor was cracked or damaged, or where penetrations and holes or seams were observed.

Montrose Environmental sampled a total of 37 locations with two (2) readings per sample location. The first sample location was approximately six (6) inches off of the floor where the damage/penetration was located, and the second was taken approximately four (4) feet—waist height—off of the ground.

3.0 RESULTS

3.1 MERCURY VAPOR SCREENING

Mercury vapors were detected in low amounts throughout both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium. The range of readings observed went from 1 nanogram per cubic meter (ng/m^3) up to 200 ng/m^3, which equals 0.000200 milligrams per cubic meter (mg/m^3).

The Occupational Safety and Health Administration (OSHA) set a Permissible Exposure Limit (PEL) for mercury at 0.1 mg/m^3 (equal to 100,000 ng/m^3). The American Conference of Governmental Industrial Hygienists (ACGIH) sets a Threshold Limit Value (TLV) at 0.025 mg/m^3 (equal to 25,000 ng/m^3). All readings observed in both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium are well below both of these threshold amounts.

New Jersey Department of Health's (NJDOH) guideline for mercury vapor is 0.8 micrograms per cubic unit of air (800 ng/m^3). Under this state guideline, this reading would be acceptable for a preschool age child to be in the room for eight hours a day for 180 days.

The averaged mercury concentration observed within both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium were below this guideline. Sampling results are provided in **Table 1**. NJDOH's informational guidance document is provided in **Appendix A**.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Site observations showed the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium to be in good condition with minimal damage noted. Flooring seams and designed penetrations are also present within the flooring.

Based on the results of the investigation, Montrose Environmental does not consider the mercury-containing flooring material within either gymnasium to be an immediate health hazard to the building occupants or visitors. Mercury vapor levels detected were below the NJDOH guidelines.

Montrose Environmental continues to recommend six-month periodic surveillances of the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium to assess the condition of the flooring material and existing mercury vapor concentrations until the flooring has been removed.

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Montrose Environmental appreciates the opportunity to assist Hunterdon Central Regional High School with this project. Should you have any questions or comments please feel free to contact us at (609) 890-7277.

Respectfully submitted,

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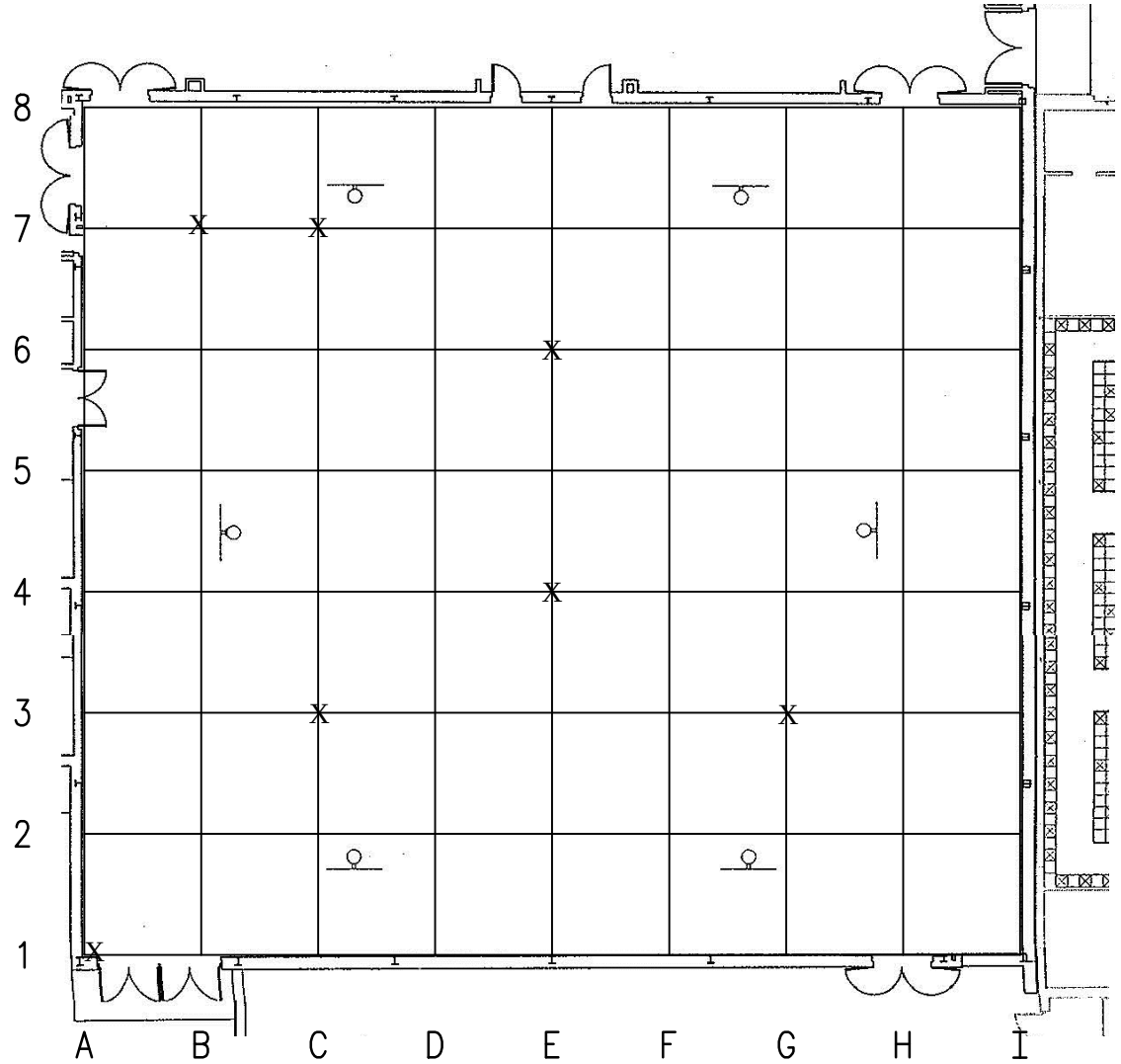


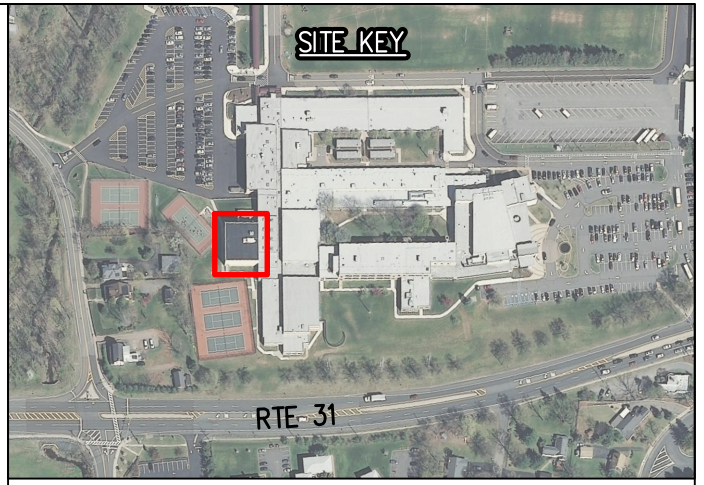


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FIGURE 1
9-10 Auxiliary Gymnasium Sample Grid





SCALE IN FEET

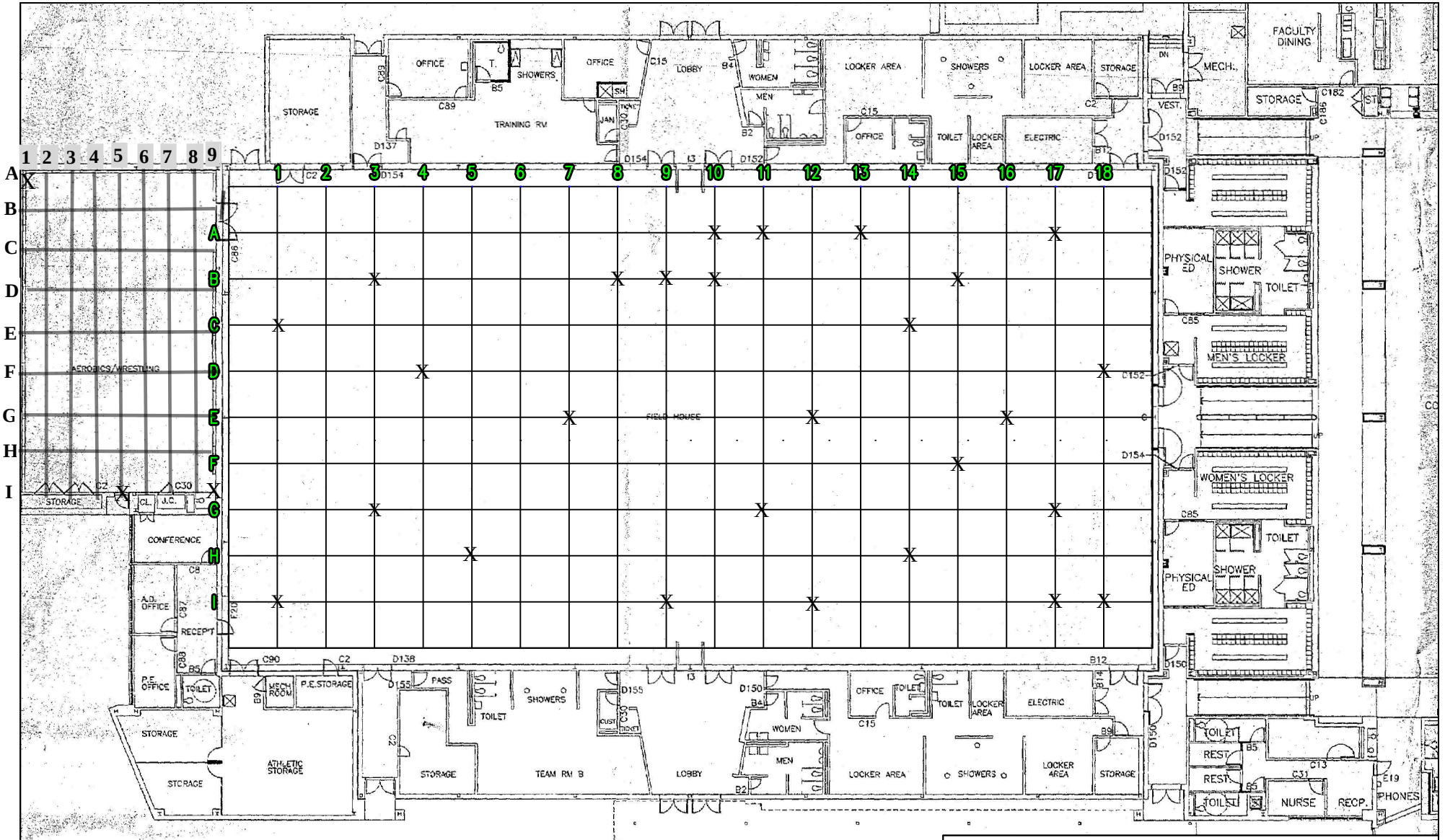
2.5 0 5 10 15

FIGURE 1
SAMPLE LOCATION MAP
HUNTERDON CENTRAL HIGH SCHOOL
RARITAN, NJ

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FIGURE 2
11-12 Field House Gymnasium Sample Grid



SCALE IN FEET

5 0 10 20 30

FIGURE 1
SAMPLING GRID
HUNTERDON CENTRAL REGIONAL HIGH SHCOOL
84 ROUTE 31
FLEMINGTON, NJ

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TABLE 1
Sampling Results

Table 1
Jerome Sampling Results
Hunterdon Central Regional High School
11-12 Field House and 9-10 Auxiliary Gymnasiums
84 Route 31
Flemington, New Jersey

Date	Reading	Location on Grid	Low Reading (6" Off Floor)	High Reading (Waist Height)
11-12 Field House Gymnasium				
12/29/2022	1	1C	270	140
12/29/2022	2	1I	80	110
12/29/2022	3	3B	250	170
12/29/2022	4	3G	130	160
12/29/2022	5	4D	210	170
12/29/2022	6	5H	140	170
12/29/2022	7	7E	160	130
12/29/2022	8	8B	390	160
12/29/2022	9	9B	170	200
12/29/2022	10	9I	260	230
12/29/2022	11	10A	880	210
12/29/2022	12	10B	240	270
12/29/2022	13	11A	260	190
12/29/2022	14	11G	240	190
12/29/2022	15	12E	190	150
12/29/2022	16	12I	151	190
12/29/2022	17	13A	210	110
12/29/2022	18	14C	190	200
12/29/2022	19	14H	170	180
12/29/2022	20	15B	250	220
12/29/2022	21	15F	190	150
12/29/2022	22	16E	190	170
12/29/2022	23	17A	420	140
12/29/2022	24	17G	160	200
12/29/2022	25	17I	280	35
12/29/2022	26	18D	220	170
12/29/2022	27	18I	170	150
12/29/2022	28	Wrestling 1A	70	60
12/29/2022	29	Wrestling 5I	60	60
12/29/2022	30	Wrestling 9I	70	60
	Average Reading		**222.3666667**	**158.1666667**
			Combined Average (Low & High Readings)	**190.2666667**
9-10 Auxiliary Gymnasium				
12/29/2022	1	1A	0	0
12/29/2022	2	3C	100	0
12/29/2022	3	3G	0	0
12/29/2022	4	4E	0	0
12/29/2022	5	6E	0	0
12/29/2022	6	7B	0	0
12/29/2022	7	7C	0	100
	Average Reading		**14.28571429**	**14.28571429**

Table 1
Jerome Sampling Results
Hunterdon Central Regional High School
11-12 Field House and 9-10 Auxiliary Gymnasiums
84 Route 31
Flemington, New Jersey

Date	Reading	Location on Grid	Low Reading (6" Off Floor)	High Reading (Waist Height)
			Combined Average (Low & High Readings)	14.28571429

Appendix A
NJDOH Mercury Flooring Guidance



Guidance for New Jersey Schools: Evaluating Mercury in Synthetic Flooring

The New Jersey Department of Health is providing this fact sheet to New Jersey school districts concerned about mercury exposure from synthetic flooring.

What types of floors contain mercury?

The types of floors that may contain mercury are solid, rubber-like synthetic flooring manufactured from about 1960 until the 1990s. Not all synthetic flooring contains mercury. Flooring made using a catalyst known as "phenyl mercuric acetate" may release mercury vapors into the air under certain conditions. Not all flooring that contains mercury emit mercury vapors into the air.

What should you do if your school has a synthetic floor?

- Check to see if you can determine if the flooring contains mercury by contacting the manufacturer/installer or reviewing the Safety Data Sheet (SDS).
- If you are able to determine that the flooring contains mercury or you suspect it contains mercury, work with a qualified environmental consultant to evaluate the flooring and determine next steps.
- If indoor air sampling is recommended, it should be done under normal school operating conditions.

What levels of mercury are considered safe for school children and staff?

The New Jersey Department of Health (NJDOH) has adopted Standards for Indoor Environment Certification and for Licensure of Indoor Environmental Consultants (N.J.A.C. 8:50). These regulations provide a risk assessment model that can be used to evaluate indoor air contaminants for school children and staff. Your indoor environmental consultant can use this risk model to determine a Maximum Contaminant Level (MCL) for mercury in your school. Alternatively, your consultant may evaluate the indoor air data to ensure that mercury levels are below 0.8µg/m^3 which is based on the exposure scenario in the risk model that is protective of preschool-aged children.

N.J.A.C. 8:50 is available on the NJDOH website at:
http://www.nj.gov/health/ceohs/documents/eohap/njac_850_adoption.pdf