

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

PREPARED BY:

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PARS PROJECT NO. 1124-19



July 2021



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1.0 INTRODUCTION

On July 20, 2021, PARS Environmental, Inc. (PARS) 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 HCRHS.

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 PARS Project Industrial Hygienist Ms. Jessica Perrini.



2.0 METHODOLOGY

2.1 MERCURY VAPOR SCREENING

PARS utilized a Jerome 550 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. PARS 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.

PARS collected a total of 37 readings, 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—chest 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 $400 \text{ ng}/\text{m}^3$, which equals 0.000400 milligrams per cubic meter (mg/m^3).

The Occupational Safety and Health Administration (OSHA) set a Permissible Exposure Limit (PEL) for mercury at $0.1 \text{ mg}/\text{m}^3$ (equal to $100,000 \text{ ng}/\text{m}^3$). The American Conference of Governmental Industrial Hygienists (ACGIH) sets a Threshold Limit Value (TLV) at $0.025 \text{ mg}/\text{m}^3$ (equal to $25,000 \text{ ng}/\text{m}^3$). 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 ($800 \text{ ng}/\text{m}^3$). 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**.



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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, PARS 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.

PARS 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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PARS 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,

PARS ENVIRONMENTAL, INC.

Jessica Perrini
Project Manager

Julian Fernandez-Obregon
Project Industrial Hygienist



**Mercury Surveillance Report
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**FIGURE 1
9-10 Auxiliary Gymnasium Sample Grid**

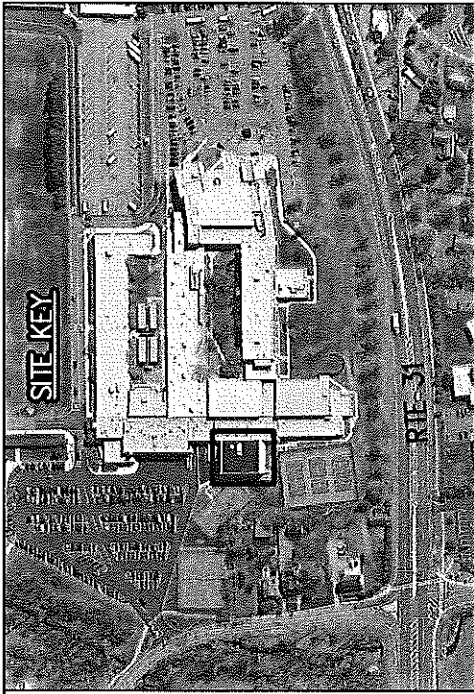
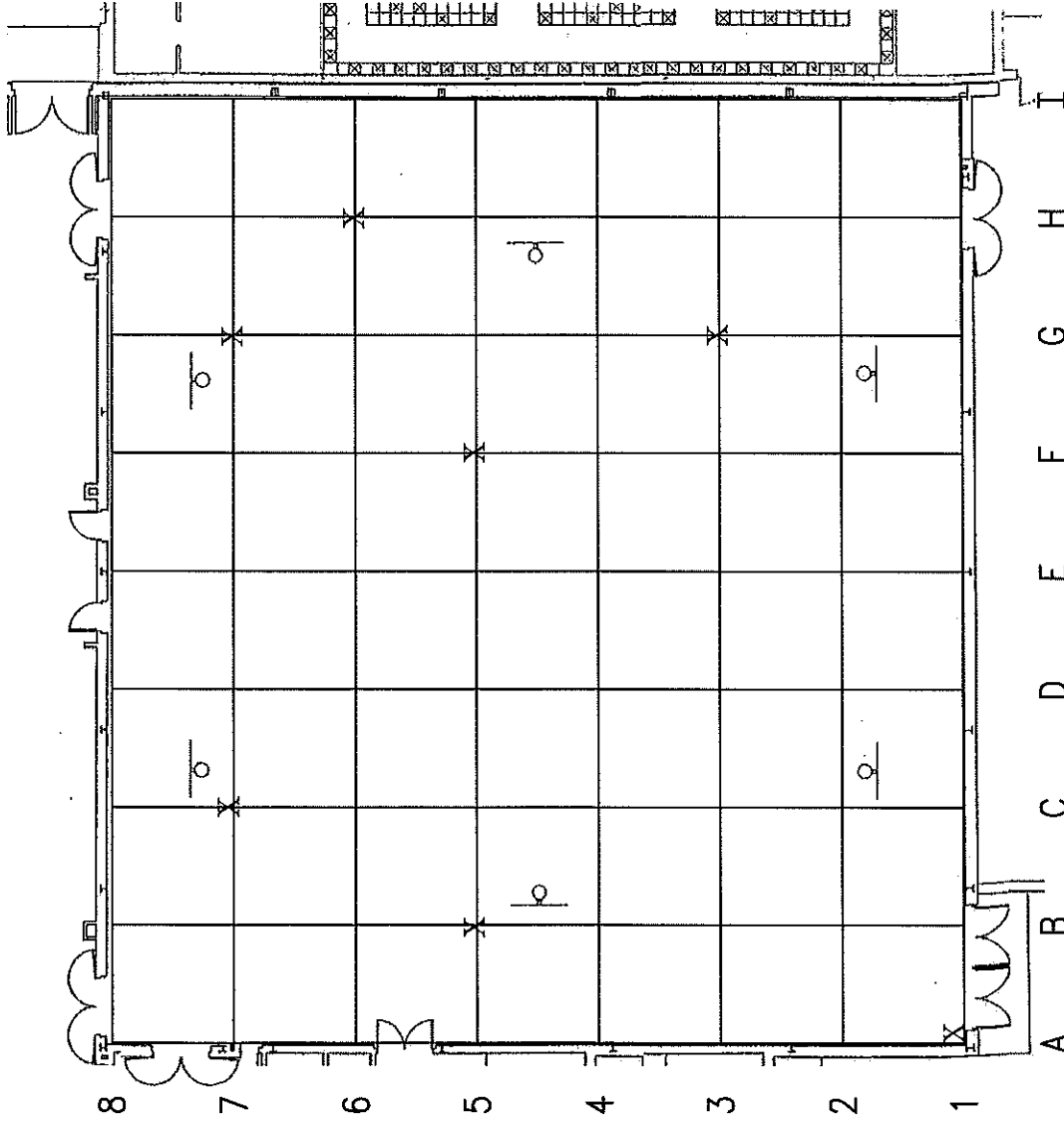


FIGURE 1
 SAMPLE LOCATION MAP
 HUNTERDON CENTRAL HIGH SCHOOL
 RARITAN, NJ

PARS ENVIRONMENTAL, INC.
 500 HORIZON DRIVE SUITE 540 ROBBINSVILLE, NEW JERSEY

DRAWN BY:	MN	JOB NUMBER:	1124-14
CHECKED BY:	JFO	DATE:	9/5/19



SCALE IN FEET
 2.5 0 5 10 15





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11-12 Field House and 9-10 Auxiliary Gymnasiums**

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**FIGURE 2
11-12 Field House Gymnasium Sample Grid**

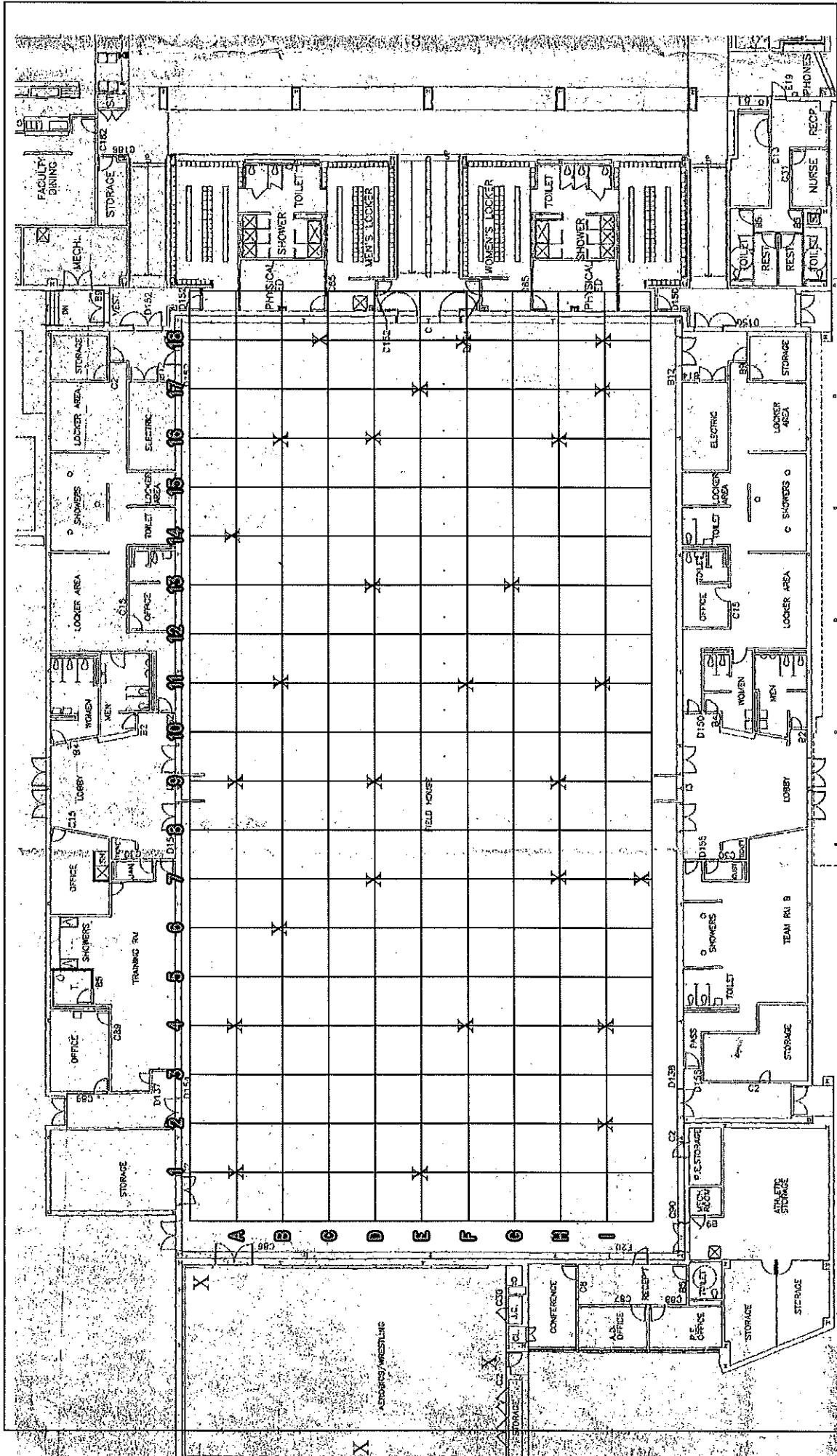
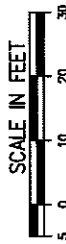


FIGURE 1
 SAMPLING GRID
 HUNTERDON CENTRAL REGIONAL HIGH SCHOOL
 84 ROUTE 31
 FLEMINGTON, NJ



PARS ENVIRONMENTAL, INC.
 500 HORIZON DRIVE SUITE 540 ROBBINSVILLE, NEW JERSEY



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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 (Chest Height)
11-12 Field House Gymnasium				
7/20/2021	1	A1	100	200
7/20/2021	2	E1	200	200
7/20/2021	3	I2	200	200
7/20/2021	4	I4	200	100
7/20/2021	5	F4	300	200
7/20/2021	6	A4	200	200
7/20/2021	7	B6	400	200
7/20/2021	8	D7	200	200
7/20/2021	9	H7	100	200
7/20/2021	10	J7	200	200
7/20/2021	11	H9	200	400
7/20/2021	12	D9	200	200
7/20/2021	13	A9	200	300
7/20/2021	14	B11	300	100
7/20/2021	15	F11	200	100
7/20/2021	16	I11	300	100
7/20/2021	17	G13	200	200
7/20/2021	18	D13	200	300
7/20/2021	19	A14	300	100
7/20/2021	20	B16	300	200
7/20/2021	21	D16	200	200
7/20/2021	22	H16	100	200
7/20/2021	23	I17	200	300
7/20/2021	24	E17	100	200
7/20/2021	25	C18	200	0
7/20/2021	26	F18	200	0
7/20/2021	27	I18	200	100
7/20/2021	28	Wrestling Rm Rt Corner	0	0
7/20/2021	29	Wrestling Rm Lt Middle	100	0
7/20/2021	30	Wrestling Rm Ctr Back	100	0
7/20/2021	Average Reading		190	163.3333333
Combined Average (Low & High Readings)				176.6666667
9-10 Auxiliary Gymnasium				
7/20/2021	1	C7	230	180
7/20/2021	2	G7	210	220
7/20/2021	3	H6	140	110
7/20/2021	4	B5	160	110
7/20/2021	5	F5	100	110
7/20/2021	6	G3	120	160
7/20/2021	7	A1	110	130
7/20/2021	Average Reading		152.8571429	145.7142857
Combined Average (Low & High Readings)				149.2857143



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**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 $0.8\mu\text{g}/\text{m}^3$ 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



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