



October 9, 2025

TUNKH25003

Tunkhannock Area School District

Attn: Mr. Paul Dougherty, Superintendent
41 Philadelphia Avenue
Tunkhannock PA, 18657

**RE: Indoor Air Quality Assessment – District Wide IAQ 2025-2026 SY
Tunkhannock Area School District
Tunkhannock, PA**

Mr. Dougherty:

Pennoni submits this report to the **Tunkhannock Area School District (District)** to document the Indoor Air Quality (IAQ)/Mold Assessment conducted throughout the Tunkhannock School District including High School, Intermediate School, Administrative Building, Primary Center, and Mehoopany Elementary buildings.

Background

As reported to Pennoni, this is part of an annual review of the district's air quality, Pennoni has previously conducted IAQ's for the District. No known areas of water damage, mold growth or indoor air quality issues were presented to Pennoni prior to the assessment.

Activities

Pennoni representative Robert Pazzaglia (Staff Health and Safety Professional) conducted the assessment of multiple areas within the five referenced buildings above on October 3, 2025. Results of the inspection and all environmental monitoring/air quality testing are representative of the conditions (atmospheric conditions, building usage, etc.) that were present at the time of the inspection. Weather conditions at the time of the assessment were 75°Fahrenheit (°F), 31% relative humidity and no precipitation. The building's ventilation system was operating at typical settings for the time/season. All District buildings were occupied by Teachers and Staff during sampling; students were not present.

Activities completed as part of this project included limited visual/sensory inspections, a limited moisture content survey, monitoring for general air quality parameters, and mold air sampling. Pennoni activities were conducted in accordance with currently recommended practices of the Pennsylvania Department of Health (PA DOH) and the New York City Department of Health and Mental Hygiene, the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and the U.S. Environmental Protection Agency (USEPA).

Visual Inspection

A summary of the visual/sensory inspection is provided below:

- Indications of fungal growth were not seen on accessible finishes in the targeted areas.
- Indications of water damage materials not identified at any location.
- Active sources of water infiltration (leaks, standing water, etc.) were not seen at the time of the assessment.
- Malodors were not identified in any structures.

Air Quality Monitoring

Results of the monitoring for indoor environmental parameters conducted during the assessment are summarized in Table 1, below. Monitoring was performed with a TSI IAQ-CALC Meter (Model No. T7545) used and calibrated in accordance with manufacturer's instructions. Findings, where applicable, have been compared to industry recommendations established by the USEPA, the American Conference of Governmental Industrial Hygienists (ACGIH), and ASHRAE.

- **Relative Humidity/Temperature:** ASHRAE recommends maintaining indoor relative humidity between 30% and 65%. Relative humidity below 30% may contribute to occupant discomfort from dryness. Conversely, humidity more than 65% may support the growth and proliferation of microorganisms. The USEPA recommends schools and commercial buildings maintain relative humidity below 60%, ideally 30 – 50%, if possible.
- **Carbon Dioxide:** ASHRAE identifies carbon dioxide concentrations of less than 700 parts per million (ppm) greater than ambient conditions as an index for acceptable air quality. The concentration is based on comfort (odor) criteria related to the bioeffluents and general contaminant buildup. An indoor air concentration of carbon dioxide more than this guideline is not indicative of an increased risk to human health. This level provides a general indicator of whether air exchange in each indoor space is sufficient to provide comfort to most people in that space.

Table 1- Summary of Indoor Air Quality Monitoring, Tunkhannock Area School District (October 3, 2025)

<i>Building</i>	<i>Location</i>	<i>Temperature</i>	<i>Relative Humidity</i>	<i>Carbon Dioxide</i>
High School	Outside Library	69.2°F	47.3%	625 ppm
High School	Outside Room 201	70.9°F	45.1%	531 ppm
High School	Outside Room 140	68.6°F	46.7%	480 ppm
High School	Outside Room 158	67.1°F	50.2%	496 ppm
High School	Outside Room 164	69.3°F	45.8%	451 ppm
<i>High School</i>	<i>Exterior Background</i>	<i>52.6°F</i>	<i>69.4%</i>	<i>401 ppm</i>
Middle School	Gym Vestibule	73.2°F	43.3%	484 ppm
Middle School	Outside Room 111	72.5°F	45.1%	501 ppm
Middle School	Elevator Vestibule, 2 nd Floor	73.7°F	43.7%	536 ppm
Middle School	Outside Room 232	73.3°F	41.4%	508 ppm
Middle School	Outside A.V. Storage	73.0°F	44.0%	509 ppm
Middle School	<i>Exterior Background</i>	<i>51.8°F</i>	<i>74.5%</i>	<i>388 ppm</i>
Administrative Building	Outside Room 106	79.3°F	36.8%	551 ppm
Administrative Building	Outside Room 202	77.1°F	39.0%	560 ppm
Administrative Building	Maintenance Area	76.0°F	43.1%	599 ppm
<i>Administrative Building</i>	<i>Exterior Background</i>	<i>83.2°F</i>	<i>28.5%</i>	<i>402 ppm</i>
Primary Center	Outside Activity Room	72.6°F	45.5%	503 ppm
Primary Center	Outside Health Suite	72.9°F	46.1%	549 ppm
Primary Center	Outside Room 28	76.0°F	40.7%	437 ppm
<i>Primary Center</i>	<i>Exterior Background</i>	<i>75.7°F</i>	<i>31.6%</i>	<i>409 ppm</i>
Mehoopany Elementary	Outside Conference Room	67.5°F	40.0%	419 ppm
Mehoopany Elementary	Outside Room C-1	68.2°F	41.1%	462 ppm

Mehoopany Elementary

Exterior Background

45.7°F

71.8%

408 ppm

Table Notes:

ppm: Parts per million
°F: degrees Fahrenheit

Mold Air Sampling and Analysis

Bioaerosol samples for total (viable and non-viable) fungal spores were collected according to the American Industrial Hygiene Association (AIHA) and laboratory protocol (EMSL Analytical, Inc.). Specifically, air samples were collected using Micro5™ collection cassettes and a high-volume pump calibrated to 5.0 liters per minute. Samples were delivered via Federal Express to EMSL Analytical, Inc. (EMSL), Cinnaminson, New Jersey, an AIHA Environmental Microbiology Laboratory Accreditation Program certified laboratory (EMLAP No. 100194) for analysis (viable and non-viable spore counts and genus identification). Interior building results were reviewed and compared to exterior background results, which were collected simultaneously. Results are summarized in Tables 2 to 6. The Laboratory Analytical Reports and Chain of Custody forms can be found in Appendix A.

Note 1: While there is no accepted standard for microbiological organisms, the results are best utilized to compare areas within a given building. Interior air sampling results collected in the targeted areas identified fewer/less interior spore counts when compared to exterior results collected concurrently.

Table 2 – Summary of Indoor Air Quality Sampling, High School - 135 Tiger Drive Tunkhannock, PA 18657 (October 3, 2025)							
	Results (all results in species/m ³)						
Predominant Species	Outside Library	Outside Room 201	Outside Room 140	Outside Room 158	Outside Room 164	Exterior Background, High School	Shared Exterior Background, Middle School
Ascospores	*	80	*	80	*	700	800
Aspergillus/ Penicillium++	*	*	880	200	*	80	800
Basidiospores	5,400	2,400	5,000	5,100	1,300	21,500	18,600
Bipolaris++	*	*	*	80	*	*	*
Cladosporium	80	*	600	600	80	4,500	1,500
Curvularia	*	*	*	40	*	*	*
Epicoccum	*	200	*	*	*	80	*
Fasarium++	*	*	*	*	*	80	*
Ganoderma	*	*	*	80	*	600	700
Myxomycetes++	*	40	*	80	*	80	*
Pithomyces++	*	*	40	*	*	300	40
Rust	*	*	*	80	*	*	*
Unidentifiable Spores	*	*	*	*	*	*	80
Arthrinium	*	*	40	*	*	*	*
Cercospora++	80	*	*	*	*	*	80
Paecilomyces++	*	*	*	*	*	200	*
Total	5,560	2,720	6,560	6,340	1,380	28,120	22,600

Table Notes:

Species/m³: species per cubic meter of air
*: no spores detected

Table 3 – Summary of Indoor Air Quality Sampling, Middle School - 200 Franklin Avenue Tunkhannock, PA 18657 (October 3, 2025)							
Predominant Species	Results (all results in species/m ³)						
	Gym Vestibule	Outside Room 111	Elevator Vestibule, 2 nd Floor	Outside Room 232	Outside A.V. Storage	Exterior Background, Middle School	Shared Exterior Background, High School
Ascospores	200	80	80	*	*	800	700
Aspergillus/ Penicillium++	80	200	80	*	300	800	80
Basidiospores	2,600	3,700	3,800	4,200	4,100	18,600	21,500
Cladosporium	300	200	*	880	80	1,500	4,500
Epicoccum	*	*	*	*	80	*	80
Fasarium++	*	*	*	*	*	*	80
Ganoderma	*	*	*	*	*	700	600
Myxomycetes+ +	80	*	*	*	*	*	80
Pithomyces++	40	*	*	40	*	40	300
Rust	*	*	80	*	*	*	*
Unidentifiable Spores	*	*	*	*	*	80	*
Acremonium++	*	*	*	*	600	*	*
Cercospora++	*	*	*	*	*	80	*
Paecilomyces+ +	*	*	*	80	*	*	200
Total	3,300	4,180	4,040	5,200	5,160	22,600	28,120

Table Notes:

Species/m³: species per cubic meter of air
*: no spores detected

Table 4 – Summary of Indoor Air Quality Sampling, Administration Building - 41 Philadelphia Avenue Tunkhannock PA, 18657 (October 3, 2025)

<i>Predominant Species</i>	<i>Results (all results in species/m³)</i>				
	<i>Outside Room 106</i>	<i>Outside Room 202</i>	<i>Maintenance Area</i>	<i>Exterior Background, Admin Building</i>	<i>Shared Exterior Background, Primary Center</i>
Alternaria (Ulocladium)	*	*	80	*	200
Ascospores	80	*	200	*	1,800
Aspergillus/ Penicillium++	80	*	600	200	300
Basidiospores	2,700	500	9,920	17,500	8,880
Bipolaris++	40	*	40	*	*
Cladosporium	200	*	880	1,900	3,800
Curvularia	200	*	*	*	40
Fasarium++	*	*	80	*	*
Ganoderma	*	*	40	80	200
Myxomycetes++	*	80	80	*	80
Pithomyces++	*	*	80	*	40
Rust	80	*	80	*	40
Cercospora++	*	40	*	*	*
Acremonium++	*	*	*	*	200
Total	3,380	620	12,080	19,980	15,580

Table Notes:

Species/m³: species per cubic meter of air
*: no spores detected

Table 5 – Summary of Indoor Air Quality Sampling, Primary Center - 99 Digger Drive Tunkhannock PA, 18657 (October 3, 2025)

<i>Predominant Species</i>	<i>Results (all results in species/m³)</i>				
	<i>Outside Activity Room</i>	<i>Outside Health Suite</i>	<i>Outside Room 28</i>	<i>Exterior Background, Primary Center</i>	<i>Shared Exterior Background, Admin Building</i>
Alternaria (Ulocladium)	*	*	*	200	*
Ascospores	200	80	*	1,800	*
Aspergillus/ Penicillium++	*	200	*	300	200
Basidiospores	4,500	1,600	2,200	8,880	17,500
Bipolaris++	*	40	*	*	*
Cladosporium	800	200	40	3,800	1,900
Curvularia	*	*	*	40	*
Epicoccum	*	80	*	*	*
Ganoderma	*	*	*	200	80
Myxomycetes++	*	40	*	80	*
Pithomyces++	*	40	*	40	*
Rust	*	80	80	40	*
Acremonium++	*	*	*	200	*
Total	5,500	2,360	2,320	15,580	19,980

Table Notes:

Species/m³: species per cubic meter of air

*: no spores detected

Table 6 – Summary of Indoor Air Quality Sampling, Mehoopany Elementary - 400 Scottsville Road, Mehoopany, PA 18629 (October 3, 2025)

<i>Predominant Species</i>	<i>Results (all results in species/m³)</i>			
	<i>Outside Conference Room</i>	<i>Outside Room C-1</i>	<i>Exterior Background</i>	<i>Exterior Background</i>
Alternaria (Ulocladium)	*	*	200	40
Ascospores	*	*	960	1,400
Aspergillus/ Penicillium++	*	80	200	500
Basidiospores	2,600	7,000	24,400	20,600
Bipolaris++	*	*	*	*
Cladosporium	200	300	2300	960
Epicoccum	*	80	80	80
Ganoderma	*	*	500	200
Myxomycetes++	*	*	80	80
Pithomyces++	40	*	*	80
Cercospora++	*	*	80	*
Total	2,840	7,460	28,800	23,940

Table Notes:

Species/m³: species per cubic meter of air
*: no spores detected

Conclusions and Recommendations

Based upon our site investigation and analytical results from the samples collected in the targeted areas of the five schools/buildings throughout the District on October 3, 2025:

- The visual inspection conducted as part of this assessment did not identify the presence of visible mold in any areas assessed.
- At the time of our inspection, measured temperature and carbon dioxide levels were within acceptable comfort or exposure ranges recommended by industry groups and government agencies. Relative humidity and moisture content of building materials were found to be at levels that are not conducive for mold growth.
- Interior mold air sampling and analysis results collected during the assessment indicated fewer/less concentrations and similar speciation of fungal spores when compared to the exterior/background samples.

Pennonni recommends continuing with the current HVAC system operations and controls and continuing to monitor and maintain occupant temperature and humidity levels within the occupied areas of the building to prevent any future mold growth. Consistent with recommendations of USEPA and other consensus organizations, moisture management and control is the key to preventing mold growth and indoor air quality issues. The identification and mitigation of moisture resulting from plumbing leaks, condensation, and water infiltration will minimize the potential for excess mold growth and indoor air quality issues.

It should be noted that the conditions observed during this investigation are considered to be a "snapshot" of that point in time. With indoor air quality, conditions can change over time in relation to the outdoor environment and other factors.

We trust that the information presented in this report is what you require at this time, and we thank you for the opportunity to assist you with this project. If you have any questions, or if you need any further assistance with this project, please contact this office at your earliest convenience.

Sincerely,

PENNONI ASSOCIATES INC.



Robert Pazzaglia
Associate Health and Safety Professional



Rocco DiPietro CSP
Associate Vice President, Senior OHS Professional

Attachments

Appendix A – Laboratory Report and Chain of Custody



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-0262

<http://www.EMSL.com> / cinnmicrolab@emsl.com

EMSL Order: 372516447

Customer ID: PENN36

Customer PO:

Project ID:

Attention: Rocco DiPietro
Pennoni Associates, Inc.
1337 Veterans Memorial Drive
Jessup, PA 18434

Phone: (570) 291-0030

Fax:

Collected Date: 10/03/2025

Received Date: 10/06/2025

Analyzed Date: 10/07/2025

Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0001 1(3108870) 25 Mehoopany, Outside Conference			372516447-0002 2(3108873) 25 Mehoopany, Outside Room C-1			372516447-0003 3(3108874) 25 Mehoopany, Exterior Background		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	2	200	0.7
Ascospores	-	-	-	-	-	-	12	960	3.3
Aspergillus/Penicillium++	-	-	-	1	80	1.1	3	200	0.7
Basidiospores	32	2600	91.5	88	7000	93.8	111(305)	24400	84.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	2	200	7	4	300	4	29	2300	8
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1	80	1.1	1	80	0.3
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	6	500	1.7
Myxomycetes++	-	-	-	-	-	-	1	80	0.3
Pithomyces++	1	40*	1.4	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	1	80	0.3
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	35	2840	100	94	7460	100	360	28800	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	80	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Liz Hagenbuch, M.S., Microbiology Manager
or other Approved Signatory

EMSL Analytical, Inc. maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. EMSL Analytical, Inc. bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Skin Fragment and Fibrous Particulate ratings are based on the percent of non-fungal material they represent: 1 (1-25%), 2 (26-50%), 3 (51-75%), or 4 (76-100%). Background ratings are based on the total area covered by non-fungal particles: 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-99%), or 5 (100%; overloaded). High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. *** Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts >= 100 are extrapolated based on the percentage analyzed.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100194

Initial report from: 10/07/2025 03:31 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-0262

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Attention: Rocco DiPietro
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1337 Veterans Memorial Drive
Jessup, PA 18434

Phone: (570) 291-0030

Fax:

Collected Date: 10/03/2025

Received Date: 10/06/2025

Analyzed Date: 10/07/2025

Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0004 4(3108872) 25 Mehoopany, Exterior Background			372516447-0005 5(3108884) 25 Highschool, Exterior Background			372516447-0006 6(3108885) 25 High School, Outside Room 158		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	1	40*	0.2	-	-	-	-	-	-
Ascospores	18	1400	5.8	9	700	2.5	1	80	1.3
Aspergillus/Penicillium++	6	500	2.1	1	80	0.3	2	200	3.2
Basidiospores	109(257)	20600	86	114(269)	21500	76.5	64	5100	80.4
Bipolaris++	-	-	-	-	-	-	1	80	1.3
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	12	960	4	56	4500	16	7	600	9.5
Curvularia	-	-	-	-	-	-	1	40*	0.6
Epicoccum	1	80	0.3	1	80	0.3	-	-	-
Fusarium++	-	-	-	1	80	0.3	-	-	-
Ganoderma	3	200	0.8	8	600	2.1	1	80	1.3
Myxomycetes++	1	80	0.3	1	80	0.3	1	80	1.3
Pithomyces++	1	80	0.3	4	300	1.1	-	-	-
Rust	-	-	-	-	-	-	1	80	1.3
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Paecilomyces++	-	-	-	3	200	0.7	-	-	-
Total Fungi	300	23940	100	353	28120	100	79	6340	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Liz Hagenbuch, M.S., Microbiology Manager
or other Approved Signatory

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Initial report from: 10/07/2025 03:31 PM

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Collected Date: 10/03/2025

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Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0007 7(3108887) 25 High School, Outside Room 164			372516447-0008 8(3108886) 25 Highschool, Outside Room 140			372516447-0009 9(3108889) 25 Highschool, Outside Library		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	-	-	-	11	880	13.4	-	-	-
Basidiospores	16	1300	94.2	62	5000	76.2	67	5400	97.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	80	5.8	7	600	9.1	1	80	1.4
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	1	40*	0.6	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	1	40*	0.6	-	-	-
Cercospora++	-	-	-	-	-	-	1	80	1.4
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	17	1380	100	82	6560	100	69	5560	100
Hyphal Fragment	-	-	-	1	40*	-	1	80	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	3	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Liz Hagenbuch, M.S., Microbiology Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100194

Initial report from: 10/07/2025 03:31 PM

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Phone: (570) 291-0030

Fax:

Collected Date: 10/03/2025

Received Date: 10/06/2025

Analyzed Date: 10/07/2025

Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0010 10(3108888) 25 High School, Outside Room 201			372516447-0011 11(3108880) 25 Middle School, Exterior Background			372516447-0012 12(3108881) 25 Middle School, Outside A.V. Storage		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	80	2.9	10	800	3.5	-	-	-
Aspergillus/Penicillium++	-	-	-	10	800	3.5	4	300	5.8
Basidiospores	30	2400	88.2	113(233)	18600	82.3	51	4100	79.5
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	19	1500	6.6	1	80	1.6
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	2	200	7.4	-	-	-	1	80	1.6
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	9	700	3.1	-	-	-
Myxomycetes++	1	40*	1.5	-	-	-	-	-	-
Pithomyces++	-	-	-	1	40*	0.2	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	1	80	0.4	-	-	-
Acremonium++	-	-	-	-	-	-	8	600	11.6
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	1	80	0.4	-	-	-
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	34	2720	100	284	22600	100	65	5160	100
Hyphal Fragment	1	80	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	80	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100194

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Collected Date: 10/03/2025

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Analyzed Date: 10/07/2025

Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0013 13(3108879) 25 Middle School, Outside Room 111			372516447-0014 14(3108871) 25 Middle, Gym Vestibule			372516447-0015 15(3108882) 25 Middle School, 2nd Floor near		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	80	1.9	2	200	6.1	1	80	2
Aspergillus/Penicillium++	2	200	4.8	1	80	2.4	1	80	2
Basidiospores	46	3700	88.5	33	2600	78.8	47	3800	94.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	3	200	4.8	4	300	9.1	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	80	2.4	-	-	-
Pithomyces++	-	-	-	1	40*	1.2	-	-	-
Rust	-	-	-	-	-	-	2	80*	2
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	52	4180	100	42	3300	100	51	4040	100
Hyphal Fragment	1	40*	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Liz Hagenbuch, M.S., Microbiology Manager
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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100194

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Collected Date: 10/03/2025

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Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0016 16(3108883) 25 Middle School, Outside Room 232			372516447-0017 17(3108891) 25 Admin. Building, Exterior Background			372516447-0018 18(3108890) 25 Admin. Building, Outside Room 106		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	1	80	2.4
Aspergillus/Penicillium++	-	-	-	3	200	1	1	80	2.4
Basidiospores	52	4200	80.8	106(219)	17500	87.6	34	2700	79.9
Bipolaris++	-	-	-	-	-	-	1	40*	1.2
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	11	880	16.9	24	1900	9.5	2	200	5.9
Curvularia	-	-	-	-	-	-	2	200	5.9
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	80	0.4	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	1	40*	0.8	-	-	-	-	-	-
Rust	-	-	-	-	-	-	1	80	2.4
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Paecilomyces++	1	80	1.5	4	300	1.5	-	-	-
Total Fungi	65	5200	100	251	19980	100	42	3380	100
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

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Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0019 19(3108892) 25 Admin. Building, Outside Room 202			372516447-0020 20(3108893) 25 Admin. Building, Maintenance Area			372516447-0021 21(3108875) 25 Primary Center, Exterior Background		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	1	80	0.7	2	200	1.3
Ascospores	-	-	-	2	200	1.7	23	1800	11.6
Aspergillus/Penicillium++	-	-	-	7	600	5	4	300	1.9
Basidiospores	6	500	80.6	105(124)	9920	82.1	108(111)	8880	57
Bipolaris++	-	-	-	1	40*	0.3	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	11	880	7.3	48	3800	24.4
Curvularia	-	-	-	-	-	-	1	40*	0.3
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	1	80	0.7	-	-	-
Ganoderma	-	-	-	1	40*	0.3	3	200	1.3
Myxomycetes++	1	80	12.9	1	80	0.7	1	80	0.5
Pithomyces++	-	-	-	1	80	0.7	1	40*	0.3
Rust	-	-	-	1	80	0.7	1	40*	0.3
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	3	200	1.3
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	1	40*	6.5	-	-	-	-	-	-
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	8	620	100	151	12080	100	198	15580	100
Hyphal Fragment	1	80	-	-	-	-	1	80	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

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Project: TUNKH25003- District Wide IAQ

Test Report: Micro-5(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number: Client Sample ID: Volume (L): Sample Location:	372516447-0022 22(3108875) 25 Primary Center, Outside Room 28			372516447-0023 23(3108877) 25 Primary Center, Activity Room			372516447-0024 24(3108878) 25 Primary Center, Outside Health Suite		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	2	200	3.6	1	80	3.4
Aspergillus/Penicillium++	-	-	-	-	-	-	3	200	8.5
Basidiospores	27	2200	94.8	56	4500	81.8	20	1600	67.8
Bipolaris++	-	-	-	-	-	-	1	40*	1.7
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40*	1.7	10	800	14.5	3	200	8.5
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	1	80	3.4
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40*	1.7
Pithomyces++	-	-	-	-	-	-	1	40*	1.7
Rust	1	80	3.4	-	-	-	1	80	3.4
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Acremonium++	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Paecilomyces++	-	-	-	-	-	-	-	-	-
Total Fungi	29	2320	100	68	5500	100	32	2360	100
Hyphal Fragment	1	80	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	80	-	-	80	-	-	80	-
Analyt. Sensitivity 300x	-	40*	-	-	40*	-	-	40*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

No discernable field blank was submitted with this group of samples.

Liz Hagenbuch, M.S., Microbiology Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100194

Initial report from: 10/07/2025 03:31 PM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com



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TESTING LABS • PRODUCTS • TRAINING

Microbiology Chain of Custody Form

EMSL Order Number / Lab Use Only

372516447

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Cinnaminson, NJ 08077

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Customer Information	Customer ID	PENN36		Billing Information	Billing ID:				
	Company Name:	Pennoni			Company Name:	SAME			
	Contact Name:	Rocco DiPietro			Billing Contact:				
	Street Address:	1337 Veterans Memorial Dr.			Street Address:				
	City, State, Zip Code:	Jessup, PA, 18434	Country:		USA	City, State, Zip Code:		Country:	
	Phone:	5702910030			Phone:				
	Email(s) for Report:	rdipietro@pennoni.com			Email(s) for Invoice:				

Project Information

Project Name/No:	TUNKH25003 - District Wide IAQ			Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)	State Samples Collected:	Zip Code Samples Collected:	State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-taxable)		
Sampled By Name:	Sampled By Signature:	Sampler ID# (If applicable)	No. of Samples in Shipment		
Robert Pazzaglia	<i>RL-Paz</i>		24		
Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ Biocide Used in Source (specify)					
Public Water Supply Samples: ☐ Note: All results may automatically be reported to DOH if required by State.					
Turn-Around-Time (TAT) ☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 32* Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week					

MICROBIOLOGY TEST CODES

M001 Air-O-Cell	M174 MoldSnap	M009 Bacteria Culture Gram Stain & Count	M115 Sewage Screen - Water (P/A**)
M030 MICRO 5	M032 Allergenco-D	M010 Bacteria Count & ID - 3 Most Prominent	M116 Sewage Screen - Water (MPN**)
M041 Fungal Direct Examination		M011 Bacteria Count & ID - 5 Most Prominent	M117 Sewage Screen - Swab (P/A**)
M169 Pollen ID & Enumeration			M013 Sewage Screen - Swab (MFT*)
M005 Viable Fungi-Air Samples (Genus ID & Count)		M012 <i>Pseudomonas aeruginosa</i> (P/A**)	M730 Methicillin-resistant <i>Staph. aureus</i> (MRSA)
M006 Viable Fungi-Air Samples (Includes <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count)		M024 <i>Pseudomonas aeruginosa</i> (MFT*)	M031 Rapid-growing non-IB <i>Mycobacteria</i> Detection & Enumeration
M007 Culturable Fungi-Surface Samples (Genus ID & Count)		M015 Heterotrophic Plate Count	M014 Endotoxin Analysis
M008 Culturable Fungi-Surface Samples (Includes <i>Penicillium</i> , <i>Aspergillus</i> , <i>Cladosporium</i> , <i>Stachybotrys</i> Species ID & Count)		M017 Total Coliform & <i>E. Coli</i> (Colilert P/A**)	M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
M280 Dust Characterization Level-1		M018 Total Coliform & <i>E. Coli</i> (MFT*)	M095 Bacteroides
M281 Dust Characterization Level-2		M114 Total Coliform & <i>E. Coli</i> Enumeration (Colilert MPN**)	Other - See Analytical Price Guide for Test Code
Add On to Spore Trap & M041 Analyses *available at certain lab locations*		M019 Fecal Coliform (MFT*)	Legionella Analysis Please use EMSL Legionella COC
M280A Dust Characterization Level-1		M020 Fecal <i>Streptococcus</i> (MFT*)	
M281A Dust Characterization Level-2		M029 Enterococci (MFT*)	
		M129 Enterococci (Enterolert P/A**)	
		M180 Real Time qPCR-ERMI 36 Panel	
		M025 Sewage Screen - Water (MFT*)	

*MFT= Membrane Filtration Technique
**MPN = Most Probable Number
***P/A = Presence/Absence

Sample #	Sample Location/Description	Sample Type (Matrix)	Potable / Non-Potable (Only for Water)	Test Code	Volume/Area	Date / Time Collected	Temperature (Lab Use Only)
Example: Sample 1	Kitchen	Water	Potable	M017	1,000 ml	1/1/2024 3:30pm	
1 (3108870)	Mehoopany, Outside Conferences Room	Air		M030	25 L	10-3-25 / 0719AM	
2 (3108873)	Mehoopany, Outside Room C-1	Air		M030	25 L	10-3-25 / 0726AM	
3 (3108874)	Mehoopany, Exterior Background	Air		M030	25 L	10-3-25 / 0735AM	
4 (3108872)	Mehoopany, Exterior Background	Air		M030	25 L	10-3-25 / 0742AM	
5 (3108884)	High School, Exterior Background	Air		M030	25 L	10-3-25 / 0815AM	
6 (3108885)	High School, Outside Room 158	Air		M030	25 L	10-3-25 / 0836AM	

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:	Sample Condition Upon Receipt:	Received on Ice? Check if Yes: ☐
Relinquished by: <i>RL-Paz</i>	Date/Time: 10-3-25/1700	Received by: <i>SB ET</i>
Relinquished by:	Date/Time:	Date/Time: 10/6/25
		Date/Time: 11/15

Controlled Document - COC-34 Micro R17 07/16/2025

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

EMSL Order Number / Lab Use Only

EMAIL: CinnMicroLab@emsl.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

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AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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