

**THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA**

**ENVIRONMENTAL HEALTH & SAFETY DEPARTMENT**

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May 20, 2016

Signature on File

TO: Stephen Frazier, Principal  
**Silver Trail Middle**

FROM: Robert Krickovich, Coordinator, LEA  
Environmental Health & Safety Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

<u>For Custodial Supervisor Use Only</u>	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed
<hr/>	
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On May 18, 2016, I conducted an assessment at **Silver Trail Middle School**. Attached are findings and recommendations for further assessment, remediation, or corrective actions needed.

The IAQ assessment did identify one or more existing conditions impacting IAQ and has generated appropriate work orders to correct deficiencies in systems and maintenance that could contribute to decreased indoor air quality. At the time of the assessment, these concerns were not an immediate health or safety concern to building occupants. However, due to individual sensitivities and predisposing health factors, it is possible that some building occupants may elicit a health response to agents and / or conditions identified during the evaluation. Therefore, to further improve IAQ, prevent development of future IAQ-related problems, and to reduce the potential for IAQ-related complaints by building occupants, the IAQ Assessment Team recommends appropriate follow up of each item identified and listed in the attached evaluation.

*Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. In an attempt to separate IAQ issues from general maintenance items, the attached assessment may contain direction for site based staff to generate a work order through COMPASS. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all site based custodial issues have been appropriately addressed.*

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact us at 754-321-4200.

RK:smn  
Enc.

- cc: Shelley Meloni, Director, Pre-Construction  
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division  
Broward Teachers Union  
Federation of Public Employees  
Gerald Devio, Supervisor II Custodial  
Benjamin Osborne, Supervisor II Custodial  
Rich Volpi, Supervisor II Custodial  
Mark Murray, Supervisor II Custodial  
Sam Bays, Director, Maintenance Operations  
Kurt Wirz, Area Manager Trades

# IAQ Assessment

Silver Trail Middle School

Evaluation Date May 18, 2016

Time of Day 12:00

Outdoor Conditions    Temperature 93.4

Relative Humidity 75.2

Ambient CO2 470

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
139	72.8	72 - 78	53.9	30% - 60%	566	MAX 700 > Ambient	6
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
No		2' X 4' Lay in		Yes		No	
Drywall		No		No		10 Stained	
12" x 12" Vinyl		Yes		No		20Sq Ft Stained	
Ceiling Clean		Walls Clean		Flooring Clean		Room Surfaces Clean	
Yes		Yes		Yes		No	
HVAC Supply Grills Clean		Inside of Supply Duct Clean		Ceiling at Supply Grills Clean		HVAC Return Grills Clean	
Yes		Yes		Yes		No	
Exhaust Fans Working		Drain Traps Wet		Food if Stored in Room is in Sealed Containers		Unapproved Chemicals / Cleaners in Room	
Yes		N/A		N/A		No	
Signs of Pests		Room Cluttered				Air Fresheners in Room	
No		No				No	
Mechanical Equipment Location <span style="border: 1px solid black; padding: 2px;">FISH 203</span>				Mechanical Room Clean			
Yes				Yes			
Filters Installed Properly		Filters Clean		Inside of HVAC Unit Clean			
Yes		Yes		Yes			
Condensate Pan Clean		Cooling Coil Clean		N/A in this section = Not Accessible			
Yes		Yes					
Fresh Air Intake Location <span style="border: 1px solid black; padding: 2px;">Roof top</span>				Fresh Air Intake Free of Obstruction			
Yes				Yes			
Pollutant Sources Near Air Intake <span style="border: 1px solid black; padding: 2px;">None</span>							
None							

**Observations**

**Media Center Heavy dust on shelves - minor dust on books - 10 Stained Ceiling Tiles - 1 missing ceiling tile - Carpet stained center of room due to roof leak - Ongoing roofing problems past 3 years - Ceiling tiles stained / missing throughout facility due to roof leaks.**

**FACILITIES & CONSTRUCTION to expedite roofing replacement project**

**Corrective Actions to be Completed by Site Based Staff**

Thoroughly clean ALL surfaces	▼
Clean HVAC Return Grill with Wexcide	▼
Remove and replace stained ceiling tile	▼
Replace missing ceiling tile	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Provide school with ceiling tiles	▼
Repair roof leaks	▼
	▼
	▼
<b>FACILITIES &amp; CONSTRUCTION DIVISION</b>	▼
expedite roofing replacement project	▼
	▼
	▼



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Relative Humidity 75.2

Ambient CO2 470

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">183</span>	<span style="border: 1px solid black; padding: 2px;">72.4</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">64.4</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">1108</span>	<b>MAX 700 &gt; Ambient</b>	<span style="border: 1px solid black; padding: 2px;">21</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">3 Stained</span>	
Ceiling	<span style="border: 1px solid black; padding: 2px;">2' X 4' Lay in</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;"></span>		
Walls	<span style="border: 1px solid black; padding: 2px;">Drywall</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;"></span>		
Floor	<span style="border: 1px solid black; padding: 2px;">12" x 12" Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;"></span>		

Ceiling Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Return Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Walls Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Supply Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Return Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Flooring Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Ceiling at Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">No</span>		
Room Surfaces Clean	<span style="border: 1px solid black; padding: 2px;">No</span>				

Trash Removed	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Exhaust Fans Working	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Unapproved Chemicals / Cleaners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Signs of Pests	<span style="border: 1px solid black; padding: 2px;">No</span>	Drain Traps Wet	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Air Fresheners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Room Cluttered	<span style="border: 1px solid black; padding: 2px;">No</span>	Food if Stored in Room is in Sealed Containers	<span style="border: 1px solid black; padding: 2px;">N/A</span>		

Mechanical Equipment Location	<span style="border: 1px solid black; padding: 2px;">FISH 178</span>			Mechanical Room Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Filters Installed Properly	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Filters Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of HVAC Unit Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Condensate Pan Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Cooling Coil Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	N/A in this section = Not Accessible	

Fresh Air Intake Location	<span style="border: 1px solid black; padding: 2px;">Roof top</span>	Fresh Air Intake Free of Obstruction	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Pollutant Sources Near Air Intake	<span style="border: 1px solid black; padding: 2px;">None</span>		

**Observations**

3 stained ceiling tiles - Minor dust on environmental surfaces - Ceiling tiles at HVAC Supply grills dusty - Humidity Slightly Elevated - CO2 Levels slightly elevated.

Ceiling tiles stained / missing throughout facility due to roof leaks. FACILITIES & CONSTRUCTION to expedite roofing replacement project

**Corrective Actions to be Completed by Site Based Staff**

Thoroughly clean horizontal surfaces	▼
Clean ceilings around HVAC supply grills	▼
Remove and replace stained ceiling tile	▼
	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Repair HVAC to Reduce Humidity Levels	▼
Repair HVAC to reduce CO2	▼
Evaluate and repair HVAC system as needed	▼
Repair roof leaks	▼
	▼
	▼
FACILITIES & CONSTRUCTION DIVISION	▼
expedite roofing replacement project	▼

# IAQ Assessment

Silver Trail Middle School

Evaluation Date May 18, 2016

Time of Day 12:00

Outdoor Conditions    Temperature 93.4

Relative Humidity 75.2

Ambient CO2 470

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">184</span>	<span style="border: 1px solid black; padding: 2px;">73.6</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">57.7</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">1004</span>	<b>MAX 700 &gt; Ambient</b>	<span style="border: 1px solid black; padding: 2px;">14</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">2 Stained - 1 Missing</span>	
Ceiling	<span style="border: 1px solid black; padding: 2px;">2' X 4' Lay in</span>		<span style="border: 1px solid black; padding: 2px;">Yes</span>	<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"></span>	
Walls	<span style="border: 1px solid black; padding: 2px;">Drywall</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"></span>	
Floor	<span style="border: 1px solid black; padding: 2px;">12" x 12" Vinyl</span>		<span style="border: 1px solid black; padding: 2px;">No</span>	<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"></span>	

Ceiling Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Return Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Walls Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Supply Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Return Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Flooring Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Ceiling at Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">No</span>		
Room Surfaces Clean	<span style="border: 1px solid black; padding: 2px;">No</span>				

Trash Removed	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Exhaust Fans Working	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Unapproved Chemicals / Cleaners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Signs of Pests	<span style="border: 1px solid black; padding: 2px;">No</span>	Drain Traps Wet	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Air Fresheners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Room Cluttered	<span style="border: 1px solid black; padding: 2px;">No</span>	Food if Stored in Room is in Sealed Containers	<span style="border: 1px solid black; padding: 2px;">N/A</span>		

Mechanical Equipment Location	<span style="border: 1px solid black; padding: 2px;">FISH 178</span>		Mechanical Room Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	
Filters Installed Properly	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Filters Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of HVAC Unit Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Condensate Pan Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Cooling Coil Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	N/A in this section = Not Accessible	

Fresh Air Intake Location	<span style="border: 1px solid black; padding: 2px;">Roof top</span>		Fresh Air Intake Free of Obstruction	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Pollutant Sources Near Air Intake	<span style="border: 1px solid black; padding: 2px;">None</span>			

**Observations**

2 stained ceiling tiles - 1 ceiling tile missing - Garbage cans on top of bookcases to catch water from roof leaks - Minor dust on environmental surfaces - Ceiling tiles at HVAC Supply grills dusty

Ceiling tiles stained / missing throughout facility due to roof leaks. **FACILITIES & CONSTRUCTION** to expedite roofing replacement project

**Corrective Actions to be Completed by Site Based Staff**

Thoroughly clean horizontal surfaces	▼
Clean ceilings around HVAC supply grills	▼
Remove and replace stained ceiling tile	▼
	▼
	▼
	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Repair roof leaks	▼
	▼
	▼
	▼
	▼
	▼
<b>FACILITIES &amp; CONSTRUCTION DIVISION</b>	▼
expedite roofing replacement project	▼
	▼

# IAQ Assessment

Silver Trail Middle School

Evaluation Date May 18, 2016

Time of Day 12:00

Outdoor Conditions    Temperature 93.4

Relative Humidity 75.2

Ambient CO2 470

Fish	Temperature	Range	Relative Humidity	Range	CO <sup>2</sup>	Range	# Occupants
<span style="border: 1px solid black; padding: 2px;">159</span>	<span style="border: 1px solid black; padding: 2px;">72.2</span>	<span style="border: 1px solid black; padding: 2px;">72 - 78</span>	<span style="border: 1px solid black; padding: 2px;">62.4</span>	<span style="border: 1px solid black; padding: 2px;">30% - 60%</span>	<span style="border: 1px solid black; padding: 2px;">1425</span>	<b>MAX 700 &gt; Ambient</b>	<span style="border: 1px solid black; padding: 2px;">22</span>
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling		Walls		Floor			
<span style="border: 1px solid black; padding: 2px;">2' X 4' Lay in</span>		<span style="border: 1px solid black; padding: 2px;">Drywall</span>		<span style="border: 1px solid black; padding: 2px;">12" x 12" Vinyl</span>			
<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;">No</span>		<span style="border: 1px solid black; padding: 2px;"></span>	

Ceiling Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	HVAC Return Grills Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Walls Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Supply Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Inside of Return Duct Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Flooring Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Ceiling at Supply Grills Clean	<span style="border: 1px solid black; padding: 2px;">No</span>		
Room Surfaces Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>				

Trash Removed	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Exhaust Fans Working	<span style="border: 1px solid black; padding: 2px;">N/A</span>	Unapproved Chemicals / Cleaners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Signs of Pests	<span style="border: 1px solid black; padding: 2px;">No</span>	Drain Traps Wet	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Air Fresheners in Room	<span style="border: 1px solid black; padding: 2px;">No</span>
Room Cluttered	<span style="border: 1px solid black; padding: 2px;">No</span>	Food if Stored in Room is in Sealed Containers	<span style="border: 1px solid black; padding: 2px;">N/A</span>		

Mechanical Equipment Location	<span style="border: 1px solid black; padding: 2px;">FISH 151</span>	Mechanical Room Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Filters Installed Properly	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Filters Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Condensate Pan Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>	Cooling Coil Clean	<span style="border: 1px solid black; padding: 2px;">Yes</span>
N/A in this section = Not Accessible			

Fresh Air Intake Location	<span style="border: 1px solid black; padding: 2px;">Roof top</span>	Fresh Air Intake Free of Obstruction	<span style="border: 1px solid black; padding: 2px;">Yes</span>
Pollutant Sources Near Air Intake	<span style="border: 1px solid black; padding: 2px;">None</span>		

**Observations**

Science Lab 10 sinks - Traps wet at time of assessment - Humidity elevated - CO2 levels slightly elevated.

Ceiling tiles stained / missing throughout facility due to roof leaks. **FACILITIES & CONSTRUCTION** to expedite roofing replacement project

**Corrective Actions to be Completed by Site Based Staff**

Clean ceilings around HVAC supply grills	▼
Run water in sinks and floor drains monthly	▼
	▼
	▼
	▼
	▼
	▼
	▼

**Corrective Actions to be Completed by PPO**

Repair HVAC to Reduce Humidity Levels	▼
Repair HVAC to reduce CO2	▼
Evaluate and repair HVAC system as needed	▼
	▼
	▼
	▼
	▼

