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July 31, 2007

Signature on File

TO: Mr. Michael Breslaw, Principal
Deerfield Beach Elementary School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
FISH 107, 108, 109, 114, 122, 123, 125 and 127

For Custodial Supervisor Use Only	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed
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On June 25, 2007 I conducted a follow-up assessment of FISH 107, 108, 109, 114, 122, 123, 125 and 127 at **Deerfield Beach Elementary School**. The assessment consisted of a reevaluation walkthrough of the previously identified area to assess the current condition of the location with regard to indoor air quality. This assessment included reviewing previously generated work orders as well as observation of the area of concern as stated in the IAQ Assessments performed on August 31, 2005, September 13, 2005 and July 19, 2006. Attached are the findings of this assessment along with recommendations for further assessment, remediation, or corrective actions, if 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. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all 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 me at 754-321-3200.

cc: Dr. Joanne Harrison, Area Superintendent
Craig Anderson, Area Director
Jeffrey S. Moquin, Director, Risk Management
Marshall Washington, Project Manager, Facilities and Construction Management
Lynn Cavall, Broward Teachers Union
Roy Jarrett, National Federation of Public and Private Employees
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc
Enc.

IAQ Assessment

Deerfield Beach Elementary School

Location Number 0011
 Evaluation Requested June 13, 2007
 Evaluation Date June 25, 2007

Time of Day

Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
107	79.9	72 - 78	58.9	30% - 60%	546	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		Yes		1 ceiling tile	
Wall Type		No		No		None	
Flooring		Yes		No		at door	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace stained ceiling tile
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Repair as appropriate
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible microbial growth and staining on 1 ceiling tile
- Wood floor is water stained and rotted
- Dust build up on environmental surfaces throughout the room
- Temperature slightly elevated

Recommendations:

Site Based Maintenance:

- Clean environmental surfaces throughout the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of microbial growth and staining on ceiling tile and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate cause of staining and rotting of floor and repair as appropriate. Repair floor material as necessary.
- Evaluate HVAC for proper operation and repair as appropriate

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

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 Evaluation Date June 25, 2007

Time of Day

Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
108	72.8	72 - 78	65	30% - 60%	546	Max 700 > Ambient	2
Noticeable Odor	Yes		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	Yes	4 square feet		
Wall Type	Plaster		No	No	None		
Flooring	Wood		Yes	No	Various		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace stained ceiling tiles
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Repair as appropriate
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills				N/A
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Visible microbial growth and staining on ceiling - @4 square feet
- Wood floor is water stained and rotted
- Minor leak from overhead A/C unit
- Pest droppings on window sill
- Visible microbial growth on chilled water line

Recommendations:

Site Based Maintenance:

- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of microbial growth and staining on ceiling and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate cause of staining and rotting of floor and repair as appropriate. Repair floor material as necessary.
- Evaluate overhead A/C unit for leaks and repair as appropriate
- Initiate a work order for pest control
- Evaluate cause of microbial growth on chilled water line and repair as appropriate

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

Location Number
 Evaluation Requested
 Evaluation Date

Time of Day

Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="109"/>	<input type="text" value="77.8"/>	<input type="text" value="72 - 78"/>	<input type="text" value="57.4"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="620"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="2"/>
Noticeable Odor	<input type="text" value="Yes"/>		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Wall Type	<input type="text" value="Plaster"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Flooring	<input type="text" value="Wood"/>		<input type="text" value="Yes"/>		<input type="text" value="No"/>		<input type="text" value="Various"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text" value="Replace stained ceiling tiles"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Repair as appropriate"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="N/A"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:
 - Wood floor is water stained and rotted
 - Minor leak from overhead A/C unit
 - Pest droppings on window sill

Recommendations:

Site Based Maintenance:
 - Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:
 - Evaluate cause of staining and rotting of floor and repair as appropriate. Repair floor material as necessary.
 - Evaluate overhead A/C unit for leaks and repair as appropriate
 - Initiate a work order for pest control

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

Location Number 0011
 Evaluation Requested June 13, 2007
 Evaluation Date June 25, 2007

Time of Day

Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
114	87.4	72 - 78	60.1	30% - 60%	620	Max 700 > Ambient	2
Noticeable Odor	Yes		Visible water damage / staining?	Visible microbial growth?	Amount of material affected		
Ceiling Type	2 x 4 Lay In		Yes	Yes	6 ceiling tiles		
Wall Type	Concrete		Yes	Yes	Bookshelf		
Flooring	Wood		Yes	No	Various		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace stained ceiling tiles
Walls	No	Yes	Yes	Clean with Wexcide disinfectant
Flooring	No	Yes	Yes	Repair as appropriate
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- A/C was off at the time of the assessment
- Visible microbial growth and staining on 6 ceiling tiles
- Visible microbial growth and staining on bookshelf
- Wood floor is water stained and rotted
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces
- Minor leak from overhead A/C unit
- Wood on outside window is rotting

Recommendations:

Site Based Maintenance:

- Ensure that the A/C remains on
- Clean bookshelf with Wexcide disinfectant solution
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces throughout the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of microbial growth and staining on ceiling and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate cause of staining and rotting of floor and repair as appropriate. Repair floor material as necessary.
- Evaluate overhead A/C unit for leaks and repair as appropriate
- Evaluate exterior wood on window and repair as appropriate to prevent water intrusion

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

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Outdoor Conditions Temperature Relative Humidity Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="122"/>	<input type="text" value="78"/>	<input type="text" value="72 - 78"/>	<input type="text" value="59.2"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="548"/>	<input type="text" value="Max 700 > Ambient"/>	<input type="text" value="2"/>
Noticeable Odor	<input type="text" value="Yes"/>		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	<input type="text" value="2 x 4 Lay In"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Wall Type	<input type="text" value="Plaster"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
Flooring	<input type="text" value="Wood"/>		<input type="text" value="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="N/A"/>
Surfaces in Room	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>

Observations

Findings:

- A/C was off at the time of the assessment
- Pest droppings on window sill
- Dust and debris on rug

Recommendations:

Site Based Maintenance:

- Ensure that the A/C remains on
- Thoroughly clean rug or discard
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Initiate a work order for pest control

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

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Deerfield Beach Elementary School

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Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
123	78.9	72 - 78	58.3	30% - 60%	531	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		No		No		None	
Wall Type		No		No		None	
Flooring		No		No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	Clean with Wexcide disinfectant
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Temperature was slightly elevated
- Dust and debris on HVAC supply and return grills
- Dust build up on floor
- Dust build up on environmental surfaces

Recommendations:

Site Based Maintenance:

- Ensure that the A/C remains on
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean and sanitize floor
- Thoroughly clean environmental surfaces throughout the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate HVAC for proper operation and repair as appropriate

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

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Time of Day

Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
125	75.5	72 - 78	56.8	30% - 60%	559	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		Yes		3 ceiling tiles	
Ceiling Type	2 x 4 Lay In		Yes	Yes	3 ceiling tiles		
Wall Type	Plaster		No	No	None		
Flooring	Wood		Yes	No	Various		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace stained ceiling tiles
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Repair as appropriate
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible microbial growth and staining on 3 ceiling tiles at overhead A/C unit
- Wood floor is water stained and rotted
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces
- Minor leak from overhead A/C unit and condensation on pipes

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean environmental surfaces throughout the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of microbial growth and staining on ceiling and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate cause of staining and rotting of floor and repair as appropriate. Repair floor material as necessary.
- Evaluate overhead A/C unit for leaks and repair as appropriate

Note - Work orders issued - EQ00988 and EQ00989

IAQ Assessment

Deerfield Beach Elementary School

Location Number 0011
 Evaluation Requested June 13, 2007
 Evaluation Date June 25, 2007

Time of Day

Outdoor Conditions Temperature 87.5 Relative Humidity 61 Ambient CO2 532

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
127	83.7	72 - 78	50.1	30% - 60%	575	Max 700 > Ambient	2
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Ceiling Type		Yes		Yes		2 ceiling tiles	
Wall Type		No		No		None	
Flooring		No		No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Replace stained ceiling tiles
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible microbial growth and staining on 2 ceiling tiles
- Dust build up on floor
- Dust and debris on HVAC supply and return grills
- Dust build up on environmental surfaces
- Dust and debris on rug
- Temperature was elevated
- Minor leak from overhead A/C unit

Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean and sanitize floor
- Thoroughly clean environmental surfaces throughout the room
- Thoroughly clean rug or discard
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of microbial growth and staining on ceiling and repair as appropriate. Remove and replace ceiling tiles as necessary.
- Evaluate HVAC for proper operation and repair as appropriate
- Evaluate overhead A/C unit for leaks and repair as appropriate

Note - Work orders issued - EQ00988 and EQ00989