

# managing risk with responsibility

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eJeffrey S. Moquin, Director Risk Management Department

July 31, 2007	Signature on File	For Custodial Supervisor Use Only
TO:	Mr. Michael Breslaw, Principal	Custodial Issues Addressed
10.	Deerfield Beach Elementary School	Custodial Issues Not Addressed

FROM: Edward See, Project Manager Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 107, 108, 109, 114, 122, 123, 125 and 127

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.

Cr. 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.

	Deerfield Be	ach Elementar	y School		Evaluat	ion Requested	June 13, 2007
Time of Day					E	Evaluation Date	June 25, 2007
Outdoor Condi	itions Tem	perature 8	37.5	Relative Humidi	ty 61	Ambier	nt CO2 532
Fish	Temperature R	ange Rela	tive Humidity	Range	CO2	Rang	ge # Occupants
107	79.9 <b>7</b> 2	2 - 78	58.9	30% - 60%	546	Max 700	> Ambient 2
Noticeable Oc	lor Yes	_	/isible water lage / staining	Visible mid? growt		Amount of mate affected	erial
Ceiling Type	2 x 4 Lay I	n	Yes	Yes		1 ce	eiling tile
Wall Type	Plaster		No	No		ı	None
Flooring	Wood		Yes	No		а	t door
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	quired
Ceiling	No	Yes	Yes		Replac	e stained ceilin	g tile
Walls	Yes	No	No				
Flooring	No	Yes	Yes		Rep	air as appropria	ate
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills Yes	No	No				
Ceiling at Sup Grills	ply					N/A	
Surfaces in Ro	oom No	Yes	Yes		Clea	an as appropria	te
bservations							
E							

0011

**Location Number** 

- 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
- 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

	Deerfield Be	each Elementary	School		Evaluat	ion Requested	June 13, 2007
Time of Day					E	Evaluation Date	June 25, 2007
Outdoor Condi	tions Tem	perature 8	7.5	Relative Humi	idity 61	Ambier	nt CO2 532
Fish	Temperature R	Range Relat	ive Humidity	Range	CO2	Ran	ge # Occupants
108	72.8 <b>7</b> 2	2 - 78	65	30% - 60%	546	Max 700 :	> Ambient 2
Noticeable Od	or Yes		isible water age / staining		nicrobial wth?	Amount of mate affected	erial
Ceiling Type	2 x 4 Lay	ln	Yes	Ye	es	4 so	quare feet
Wall Type	Plaster		No	N	0		None
Flooring	Wood		Yes	N	0	V	/arious
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	quired
Ceiling	No	Yes	Yes		Replace	e stained ceilin	g tiles
Walls	Yes	No	No				
Flooring	No	Yes	Yes		Rep	air as appropri	ate
HVAC Supply	Grills Yes	No	No				
HVAC Return (	Grills Yes	No	No				
Ceiling at Supp Grills	oly					N/A	
Surfaces in Ro	oom Yes	No	No				
bservations							

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**Location Number** 

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### 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

	Deerfield Beach Ele	ementary School		<b>Evaluation Requested</b>	June 13, 2007
Time of Day				Evaluation Date	<b>u</b> June 25, 2007
Outdoor Conditions	Temperatu	re 87.5	Relative Humidity	61 Ambi	ient CO2 532
Fish Temp	erature Range	Dalatina Humiditu		<u> </u>	# 0
	77.8 <b>72 - 78</b>	Relative Humidity 57.4	Range 30% - 60%		ange # Occupants 0 > Ambient 2
Noticeable Odor	Yes	Visible water	Visible micro		
		damage / staining		affected	d
Ceiling Type	2 x 4 Lay In	No No	No		None
Wall Type	Plaster	No No	No		None
Flooring	Wood	Yes	No		Various
		Dust Needs bris Cleaning	I	Corrective Action F	Required
Ceiling	Yes	lo No		Replace stained ceil	ing tiles
Walls	Yes	lo No			
Flooring	No	Yes		Repair as approp	riate
HVAC Supply Grills	s Yes N	lo No			
HVAC Return Grills	Yes	lo No			
Ceiling at Supply Grills				N/A	
Surfaces in Room	Yes	o No			
Dbservations					
Findings: - Wood floor is water - Minor leak from ove - Pest droppings on w  Recommendations:  Site Based Maintena - Continue to monitor appropriate  Physical Plant Oper - Evaluate cause of s	erhead A/C unit window sill  ance: this location for an exations: taining and rotting and A/C unit for leaks a		appropriate. Repair	et and debris accumula	
Note - Work orders	issued - EQ00988	and EQ00989			

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**Location Number** 

	Deeffield Be	ach Elementary	/ School		Evaluatio	n Requested	June 13, 2007
Time of Day					Ev	/aluation Date	June 25, 2007
Outdoor Condi	tions Tem	perature 8	7.5 Re	lative Humidity	61	Ambient	CO2 532
Fish	Temperature R	lange Relat	ive Humidity	Range	CO2	Range	e # Occupants
114	87.4 <b>7</b> 2	2 - 78	60.1 30	% - 60%	620	Max 700 >	Ambient 2
Noticeable Od	lor Yes		isible water age / staining?	Visible micro growth?		Amount of mater affected	rial
Ceiling Type	2 x 4 Lay l	n	Yes	Yes		6 ceil	ing tiles
Wall Type	Concrete		Yes	Yes		Воо	kshelf
Flooring	Wood		Yes	No		Va	rious
	Clean	Minor Dust / Debris	Needs Cleaning		Correct	ive Action Req	uired
Ceiling	No	Yes	Yes		Replace	stained ceiling	tiles
Walls	No	Yes	Yes	С	lean with	Wexcide disinf	fectant
Flooring	No	Yes	Yes		Repai	ir as appropriat	te
HVAC Supply	Grills No	Yes	Yes	С	lean with	Wexcide disinf	fectant
HVAC Return	Grills No	Yes	Yes	С	lean with	Wexcide disinf	fectant
Ceiling at Sup Grills	ply					N/A	
Surfaces in Ro	oom No	Yes	Yes		Clear	n as appropriat	е

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**Location Number** 

### **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

	Deerfield Beach Ele	mentary School		Evaluation Requested	June 13, 2007
Time of Day				Evaluation Date	June 25, 2007
<b>Outdoor Conditions</b>	Temperatur	e 87.5	Relative Humidity	61 Ambie	ent CO2 532
l	erature         Range           78         72 - 78	Relative Humidity	Range 30% - 60%		nge # Occupants 0 > Ambient 2
Noticeable Odor	Yes	Visible water damage / staining	Visible micro growth?		
Ceiling Type	2 x 4 Lay In	No	No		None
Wall Type	Plaster	No	No		None
Flooring	Wood	No	No		None
	Clean Minor / Del			Corrective Action R	equired
Ceiling	Yes	o No			
Walls	Yes	o No			
Flooring	Yes	o No			
HVAC Supply Grills	Yes	No			
HVAC Return Grills	Yes	No			
Ceiling at Supply Grills				N/A	
Surfaces in Room	Yes	No			
Dbservations					
Findings: - A/C was off at the tir - Pest droppings on w - Dust and debris on r	vindow sill	ent			
Recommendations: Site Based Maintena - Ensure that the A/C - Thoroughly clean rule - Continue to monitor appropriate	remains on g or discard	signs of microbial g	rowth as well as dus	st and debris accumulat	ion and clean as
Physical Plant Opera - Initiate a work order					
Note - Work orders i	ssued - EQ00988 a	and EQ00989			

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**Location Number** 

	Deerfield Be	each Elementa	ry School		Evaluat	ion Requested	June 13, 2007
Time of Day					I	Evaluation Date	June 25, 2007
Outdoor Condi	tions Tem	perature 2	87.5	Relative Humid	ity 61	Ambier	nt CO2 532
Fish	Temperature R	Range Rela	ative Humidity	Range	CO2	Ran	ge # Occupants
123	78.9 <b>7</b> 2	2 - 78	58.3	30% - 60%	531	Max 700	> Ambient 2
Noticeable Od	or No		Visible water nage / staining	Visible mi g? growt		Amount of mate affected	erial
Ceiling Type	2 x 4 Lay I	n	No	No			None
Wall Type	Plaster		No	No			None
Flooring	Wood		No	No			None
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	quired
Ceiling	Yes	No	No				
Walls	Yes	No	No		Clean wit	h Wexcide disi	nfectant
Flooring	No	Yes	Yes		Cl	ean and sanitiz	e
HVAC Supply	Grills No	Yes	Yes		Clean wit	h Wexcide disi	nfectant
HVAC Return (	Grills No	Yes	Yes		Clean wit	h Wexcide disi	nfectant
Ceiling at Support Grills	ply					N/A	
Surfaces in Ro	oom No	Yes	Yes		Cle	an as appropria	te
bservations							
Findings:	una aliabthu alayat	e a d					

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**Location Number** 

- 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

	ט	eemeid E	beach Elen	lentary School		Lva	liuation Nequesteu	Julie 13, 2007
Time of Day			]				Evaluation Date	June 25, 2007
Outdoor Condi	tions	Tei	mperature	87.5	Relative Hu	midity	61 Ambier	nt CO2 532
Fish	Tempe	rature	Range	Relative Humidity	/ Range	CO2	2 Ranç	ge # Occupants
125	75	5.5	72 - 78	56.8	30% - 60%	559	9 Max <b>700</b> >	> Ambient 2
Noticeable Od	lor [	No		Visible water damage / stainin		e microbial rowth?	Amount of mate affected	erial
Ceiling Type		2 x 4 Lay	/ In	Yes		Yes	3 ce	iling tiles
Wall Type		Plaste	r	No		No	1	None
Flooring		Wood		Yes		No	V	arious
	(	Clean	Minor D		9	Со	orrective Action Rec	quired
Ceiling		No	Yes	Yes		Rep	olace stained ceiling	g tiles
Walls		Yes	No	No				
Flooring		No	Yes	Yes		F	Repair as appropria	ate
HVAC Supply	Grills	No	Yes	Yes		Clean	with Wexcide disir	nfectant
HVAC Return	Grills	No	Yes	Yes		Clean	with Wexcide disir	nfectant
Ceiling at Support Grills	ply						N/A	
Surfaces in Ro	oom	No	Yes	Yes		(	Clean as appropria	te
<u> </u>					·		<u> </u>	

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Location Number

### **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

	Deerfield	Beach Eleme	entary School		Evaluati	on Requested	June 13, 2007
Time of Day					E	valuation Date	June 25, 2007
Outdoor Condi	itions Te	emperature	87.5	Relative Humidity	61	Ambien	at CO2 532
Fish	Temperature	Range	Relative Humidity	Range	CO2	Rang	ge # Occupants
127	83.7	72 - 78	50.1	30% - 60%	575	Max 700 >	- Ambient 2
Noticeable Oc	lor No		Visible water damage / staining	Visible micro growth?	bial	Amount of mate affected	
Ceiling Type	2 x 4 La	y In	Yes	Yes		2 cei	iling tiles
Wall Type	Plaste	er	No	No	[	N	None
Flooring	Wood	b	No	No			None
	Clean	Minor Du / Debri			Correc	tive Action Rec	quired
Ceiling	No	Yes	Yes		Replace	stained ceiling	g tiles
Walls	Yes	No	No				
Flooring	No	Yes	Yes		Cle	ean and sanitize	9
HVAC Supply	Grills No	Yes	Yes	CI	ean with	n Wexcide disir	nfectant
HVAC Return	Grills No	Yes	Yes	CI	ean with	n Wexcide disir	nfectant
Ceiling at Sup Grills	ply					N/A	
Surfaces in Ro	oom No	Yes	Yes		Clea	ın as appropria	te
bservations							

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**Location Number** 

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### 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