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November 7, 2006

Signature on File

# TO: Mr. Ronald Forsman, Principal Rickards Middle School

- FROM: Robert J. Krickovich, Coordinator, LEA Facilities and Construction Management, Environmental Division
- SUBJECT: Indoor Air Quality (IAQ) Assessment FISH 106B, 106D, 106E, 163 and 220

On September 25, 2006 I conducted an assessment of FISH 106B, 106D, 106E. 163 and 220 at **Rickards Middle School**. This evaluation included observations of the flooring system, ceiling tiles, false ceiling plenum, environmental surfaces, interior and exterior walls, and the accessible ventilation equipment. Additionally, environmental parameter measurements were taken to include temperature, relative humidity, and carbon dioxide. The detailed findings, along with the recommended corrective action can be found on the attached IAQ Assessment Worksheets.

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.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-1638.

cc: Dr. Harry LaCava, Area Superintendent Toni Weissberg, Area Director Jeffrey S. Moquin, Director, Risk Management Robert Goode, Project Manager, Facilities and Construction Management Dane Ramson, Broward Teachers Union Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1 Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc Enc.

			IAQ As	sessment	Locatio	on Number	2121	
	I	Rickards Middle	e School		Evaluat	ion Requested	Septemb	er 22, 2006
Time of Day	1:00 pm				E	Evaluation Date	Septemb	er 25, 2006
Outdoor Condi	itions Tem <sub>l</sub>	perature 9	2.6	Relative Humid	ty 46.8	Ambie	nt CO2	479
Fish	Temperature R	ange Relat	ive Humidity	Range	CO2	Ran	ige #	Occupants
106B	71.2 72	2 - 78	64.2	30% - 60%	633	Max 700	> Ambien	t 1
Noticeable Od	lor Yes		isible water age / staining	Visible mi ? growt		Amount of ma affected	terial	
Ceiling Type	Plaster		Νο	No			None	
Wall Type	Plaster		No	No			None	
Flooring	Carpet		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	Νο	No					
Flooring	Yes	No	No			Carpet rippled		
HVAC Supply	Grills Yes	Νο	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	ply					N/A		
Surfaces in Ro	oom Yes	No	No					

# Observations Findings:

- Humidity level was elevated at the time of the assessment

### 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 HVAC for proper operation and repair to lower humidity level

			IAQ As	sessment	Locati	on Number	2121	
		Rickards Midd	le School		Evaluat	tion Requested	Septembe	er 22, 2006
Time of Day	1:00 pm	]			I	Evaluation Date	Septembe	er 25, 2006
Outdoor Condi	tions Ter	nperature	92.6	Relative Hum	idity 46.8	B Ambie	nt CO2	479
Fish	Temperature	Range Rela	tive Humidity	Range	CO2	Ran	ige #	Occupants
106D	73.3	72 - 78	66.1	30% - 60%	566	Max 700	> Ambient	2
Noticeable Od	lor Yes		/isible water nage / staining		microbial wth?	Amount of mat affected	terial	
Ceiling Type	Plaster		Νο	Y	es	8 s	quare feet	
Wall Type	Plaster		No	N	lo		None	
Flooring	Bare Conc	rete	No	N	lo		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	No	Yes	Yes		Clean wit	th Wexcide disi	infectant	
Walls	Yes	Νο	No					
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	Νο	No					
HVAC Return	Grills Yes	Νο	No					
Ceiling at Sup Grills	ply					N/A		
Surfaces in Ro	oom Yes	No	No					

## Findings:

Humidity level was elevated at the time of the assessment

Spotty microbial growth on ceiling

# Recommendations:

# Site Based Maintenance:

Clean ceiling with Wexcide disinfectant solution

- 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 to lower humidity level

			IAQ As	sessment	Locati	on Number	2121	
		Rickards Middl	e School		Evaluat	ion Requested	Septemb	er 22, 2006
Time of Day	1:00 pm				I	Evaluation Date	Septemb	er 25, 2006
Outdoor Condi	tions Ten	nperature	92.6	Relative Humic	lity 46.8	B Ambie	nt CO2	479
Fish	Temperature	Range Rela	tive Humidity	Range	CO2	Ran	nge #	Occupants
106E	72.7	/2 - 78	64.8	30% - 60%	586	Max 700	> Ambient	2
Noticeable Od	lor Yes		/isible water age / staining	Visible m 9? grow		Amount of ma affected	terial	
Ceiling Type	Plaster		Νο	Yes	5	Spotty th	roughout r	oom
Wall Type	Plaster		No	Yes	5	Bac	k of door	
Flooring	Bare Concr	ete	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	No	Yes	Yes		Clean wit	h Wexcide dis	infectant	
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	Νο	No					
HVAC Return	Grills Yes	Νο	No					
Ceiling at Sup Grills	ply					N/A		
Surfaces in Ro	oom Yes	No	No					

## Findings:

Humidity level was elevated at the time of the assessment

Spotty microbial growth on ceiling and on the back of the door

# Recommendations:

# Site Based Maintenance:

Clean ceiling and door with Wexcide disinfectant solution

- 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 to lower humidity level

			IAQ As:	sessment	Location Nur	mber	2121	
		Rickards Mid	dle School		Evaluation Re	equested	Septembe	er 22, 2006
Time of Day	1:00 pm	]			Evalua	tion Date	Septembe	er 25, 2006
Outdoor Condi	itions Ter	nperature	92.6	Relative Humidity	46.8	Ambien	t CO2	479
		Range Re	lative Humidity	Range	CO2	Rang	je #	Occupants
163	74.1	72 - 78	51.7	30% - 60%	775	Max 700 >	- Ambient	2
Noticeable Oc	lor No	]da	Visible water amage / staining	Visible micro g? growth?		ount of mate affected	erial	
Ceiling Type	2 x 4 Lay	' In	No	No		Ν	None	
Wall Type	Plaste	ſ	Νο	Yes		Entir	re room	
Flooring	Carpet		No	No		1	None	
	Clean	Minor Dust / Debris	t Needs Cleaning		Corrective /	Action Req	quired	
Ceiling	Yes	No	No					
Walls	No	Yes	Yes	C	lean with We	xcide disin	nfectant	
Flooring	No	Yes	Yes		Remove and	replace wi	th tile	
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	ply Yes	No	No					
Surfaces in Ro	oom Yes	No	No					

## Findings:

- Visible microbial growth on walls surfaces throughout the room and on wood furniture. Walls are skim coat plaster on solid block.

- Carpet is heavily stained and rippled

### Recommendations:

#### Site Based Maintenance:

- Clean furniture with Wexcide disinfectant solution and remove from the room temporarily until repairs are completed. If growth returns, discard furniture.

- 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:

- Clean all wall surfaces and paint with anti-microbial paint
- Remove carpet and replace with tile

			IAQ As	sessment	Location N	umber	2121	
	F	Rickards Mid	Idle School		Evaluation F	Requested	Septembe	er 22, 2006
Time of Day	1:00 pm				Evalu	uation Date	Septembe	er 25, 2006
Outdoor Conditior	ıs Temp	perature	92.6	Relative Humidity	46.8	Ambie	nt CO2	479
		ange Re	elative Humidity	Range	CO2	Ran	ge #	Occupants
220	72.2 <b>72</b>	2 - 78	50.3	30% - 60%	759	] Max 700	> Ambient	1
Noticeable Odor	No	da	Visible water amage / staining	Visible micro growth?	obial Am	nount of mat affected	terial	
Ceiling Type	2 x 4 Lay li	n	No	No			None	
Wall Type	Drywall		Νο	No			None	
Flooring	12 x 12 Viny	/I	No	No			None	
	Clean	Minor Dust / Debris	t Needs Cleaning		Corrective	e Action Re	quired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply Gri	lls Yes	No	No					
HVAC Return Gril	Is Yes	No	No					
Ceiling at Supply Grills	Yes	No	No					
Surfaces in Room	Yes	No	No					

## Findings:

- Complaint of spauling plaster on wall over door, West wall and upper East wall. Walls are dry. There are tape marks on the walls and bad drywall patches from repairs, but no signs of spauling plaster. - No signs of water intrusion or microbial growth

- No signs of water initiation of microbial gr

## 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