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Signature on File

November 17, 2006

TO:	Mr. Charles Radkowski, Principal Sawgrass Elementary School	
FROM:	Aston A. Henry, Jr., Supervisor	

Risk Management Department

SUBJECT:Indoor Air Quality (IAQ) AssessmentFISH 080, 868, 869, 871, 880, 883, 884 and Various A/C Units

On November 15, 2006 Robert Krickovich and I conducted an assessment of FISH 080, 868, 869, 871, 880, 883, 884 and various A/C units in the remainder of Building 80 at **Sawgrass Elementary 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. 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 754-321-3200.

C: Dr. Verda Farrow, Area Superintendent
Jan Beal, Area Director
Jeffrey S. Moquin, Director, Risk Management
James Carballo, Project Manager, Facilities and Construction Management
Gary Itzkowitz, Broward Teachers Union
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

AAH/tc Enc.

		IAQ	Assessment	Locati	ion Number	3401
	Sav	vgrass Elementary		Evalua	tion Requested	November 14, 2006
Time of Day 11	1:47 am				Evaluation Date	November 15, 2006
Outdoor Conditions	5 Tempera	ture 91.2	Relative Hu	midity 51	Ambie	nt CO2 338
Fish Temp	erature Range	e Relative Humi	dity Range	CO2	Ran	ige # Occupants
080	72 - 78	3	30% - 60%		Max 700	> Ambient
Noticeable Odor	No	Visible wa damage / stai		e microbial rowth?	Amount of ma affected	terial
Ceiling Type	2 x 4 Lay In	No	Ľ	No		None
Wall Type	Drywall	Yes	Γ	No	Around a	ind above door
Flooring	12 x 12 Vinyl	No	C	No		None
		or Dust Nee Debris Clear		Corre	ective Action Re	equired
Ceiling	Yes	No				
Walls	No	Yes	s	Repair/	replace as appr	opriate
Flooring	Yes	No				
HVAC Supply Grills	s Yes	No				
HVAC Return Grills	Yes	No				
Ceiling at Supply Grills	Yes	No				
Surfaces in Room	Yes	No				

Findings: (1st floor hallway)

- Bubbling paint and elevated moisture content in wall at the East end of the hallway around and above the door

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 and repair cause of water intrusion at East end of hallway around and above the door. Repair/replace wall material as appropriate.

			IAQ As	sessment	Location N	lumber	3401	
		Sawgrass E	lementary		Evaluation	Requested	Novembe	er 14, 2006
Time of Day	12:13 pm]			Eval	uation Date	Novembe	er 15, 2006
Outdoor Condi	tions Ter	nperature	91.2	Relative Humidity	51	Ambie	ent CO2	338
Fish	Temperature	Range Re	lative Humidity	Range	CO2	Ran	nge #	Occupants
868	77.7	72 - 78	58.4	30% - 60%	1121	Max 700	> Ambient	26
Noticeable Od	or No] da	Visible water mage / staining	Visible micro ? growth?		mount of ma affected	terial	
Ceiling Type	2 x 4 Lay	' In	No	No			None	
Wall Type	Drywal	I	No	No			None	
Flooring	12 x 12 Vi	nyl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correctiv	e Action Re	equired	
Ceiling	Yes	No	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
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:

No signs of water intrusion or visible microbial growth

Air in the classroom was stagnant

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 as appropriate to reduce stagnant air

			IAQ As	sessment	Locatio	on Number	3401	
		Sawgrass Ele	ementary		Evaluati	ion Requested	Novembe	er 14, 2006
Time of Day	12:13 pm				E	Evaluation Date	Novembe	er 15, 2006
Outdoor Cond	itions Terr	perature 9	1.2	Relative Humidi	y 51	Ambie	nt CO2	338
Fish	Temperature	Range Relat	tive Humidity	Range	CO2	Ran	ige #	Occupants
869	75.9 7	2 - 78	39.7	30% - 60%	1109	Max 700	> Ambient	24
Noticeable Oc	dor No		'isible water age / staining	Visible mic growth		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No]		None	
Wall Type	Drywall		No	No]		None	
Flooring	12 x 12 Vir	ıyl	No	No]		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	oply Yes	No	No					
Surfaces in Ro	oom Yes	No	No					

Findings:

No signs of water intrusion or visible microbial growth

HVAC unit is freezing up

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 as appropriate

			IAQ As	sessment	Locati	on Number	3401	
		Sawgrass Ele	mentary		Evaluat	tion Requested	Novembe	er 14, 2006
Time of Day	12:13 pm				l	Evaluation Date	Novembe	er 15, 2006
Outdoor Cond	itions Terr	perature 9	1.2	Relative Humic	lity 51	Ambie	nt CO2	338
Fish	Temperature	Range Relat	tive Humidity	Range	CO2	Ran	nge #	Occupants
871	75.9 7	2 - 78	61.7	30% - 60%	1022	Max 700	> Ambient	t 13
Noticeable Oc	dor No		isible water age / staining	Visible m ? grow		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	12 x 12 Vir	iyl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	oply Yes	No	No					
Surfaces in Ro	oom Yes	Νο	No					

Findings:

- No signs of water intrusion or visible microbial growth

- Humidity level was slightly elevated
- Air in the classroom was stagnant

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 as appropriate to lower humidity level and reduce stagnant air

			IAQ As	sessment	Locati	on Number	3401	
		Sawgrass Ele	mentary		Evalua	tion Requested	Novembe	er 14, 2006
Time of Day	11:47 am					Evaluation Date	Novembe	er 15, 2006
Outdoor Condit	ions Tem	perature 9	1.2	Relative Humid	ity 51	Ambie	nt CO2	338
Fish T	emperature F	Range Relat	ive Humidity	Range	CO2	Ran	nge #	Occupants
880	71.4 7	2 - 78	48.2	30% - 60%	817	Max 700	> Ambient	t 3
Noticeable Ode	or No		isible water age / staining	Visible mi ? growt		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No			None	
Flooring	12 x 12 Vin	yl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	Yes	Νο	Νο					
Walls	Yes	Νο	No					
Flooring	Yes	Νο	No					
HVAC Supply (Grills Yes	No	No					
HVAC Return G	Grills Yes	No	No					
Ceiling at Supp Grills	oly Yes	Νο	No					
Surfaces in Ro	om Yes	Νο	No					

Findings:

- No signs of water intrusion or visible microbial growth - Environmental parameters were acceptable

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

			IAQ As	sessment	Locati	on Number	3401	
		Sawgrass Ele	mentary		Evaluat	tion Requested	Novembe	er 14, 2006
Time of Day	11:30 am				I	Evaluation Date	Novembe	er 15, 2006
Outdoor Cond	itions Terr	perature 9	1.2	Relative Humic	dity 51	Ambie	nt CO2	338
Fish	Temperature	Range Relat	tive Humidity	Range	CO2	Ran	ige #	Occupants
883	74 7	2 - 78	61.4	30% - 60%	1131	Max 700	> Ambient	21
Noticeable Oc	dor No		isible water age / staining	Visible m g? grow		Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	No			None	
Wall Type	Drywall		No	No	·		None	
Flooring	12 x 12 Vir	iyl	No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	Yes	Νο	No					
Walls	Yes	No	No					
Flooring	Yes	Νο	No					
HVAC Supply	Grills Yes	No	No					
HVAC Return	Grills Yes	No	No					
Ceiling at Sup Grills	pply Yes	No	No					
Surfaces in Ro	oom Yes	Νο	No					

Findings:

- No signs of water intrusion or visible microbial growth
- HVAC unit is freezing up
- Filter was not installed properly and spacers were not installed (HFSP repaired)
- Humidity level was slightly elevated
- Live plant in room
- 4 stained ceiling tiles in hallway outside of room
- Ceiling above A/C unit is open

Recommendations:

Site Based Maintenance:

- Remove live plant from 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
- Evaluate cause of stained ceiling tiles in hallway outside of room and repair. Remove and replace ceiling tiles as appropriate.

			IAQ As	sessment	Locati	on Number	3401	
		Sawgrass Ele	mentary		Evaluat	ion Requested	Novembe	er 14, 2006
Time of Day	11:47 am				I	Evaluation Date	Novembe	er 15, 2006
Outdoor Condi	tions Tem	perature 9	1.2	Relative Hum	idity 51	Ambie	nt CO2	338
Fish	Temperature F	Range Relat	ive Humidity	Range	CO2	Ran	ge #	Occupants
884	73.9 7	2 - 78	69.4	30% - 60%	873	Max 700	> Ambient	3
Noticeable Od	lor No		isible water age / staining		microbial wth?	Amount of ma affected	terial	
Ceiling Type	2 x 4 Lay	In	No	N	lo		None	
Wall Type	Drywall		No	N	lo		None	
Flooring	12 x 12 Vin	yl	No	Ν	lo		None	
	Clean	Minor Dust / Debris	Needs Cleaning		Corre	ctive Action Re	equired	
Ceiling	Yes	Νο	No					
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 Yes	No	No					
Surfaces in Ro	oom Yes	No	No					

Findings:

No signs of water intrusion or visible microbial growth

- Humidity level was elevated

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 and repair HVAC unit to lower the humidity level

			IAQ As	sessment	Location Numb	per [3401	
		Sawgrass	Elementary		Evaluation Requ	uested	Novembe	er 14, 2006
Time of Day 1	1:30 am				Evaluatio	on Date	Novembe	er 15, 2006
Outdoor Condition	s Terr	perature	91.2	Relative Humidity	51	Ambie	nt CO2	338
	perature	Range F	Relative Humidity	Range	CO2	Ran	ge #	Occupants
Bldg 80	7	2 - 78		30% - 60%	M	lax 700	> Ambient	
Noticeable Odor	No		Visible water damage / staining	Visible micro growth?		nt of mat	erial	
Ceiling Type								
Wall Type								
Flooring								
	Clean	Minor Du / Debris			Corrective Ac	tion Re	quired	
Ceiling								
Walls								
Flooring								
HVAC Supply Gril	ls 📃							
HVAC Return Grill	s							
Ceiling at Supply Grills								
Surfaces in Room								

Observations Findings:

- Bard units throughout building 80. Issues with drain pans overflowing and units freezing up.

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 units in building 80 for proper operation and maintenance items

- Adjust the humidistat settings to maintain humidity levels below 60% and adjust HVAC to maintain temperatures between 72 and 74 degrees.