

# managing risk with responsibility

Aston A. Henry, Supervisor Telephone: 754 321-1900 Risk Management Department Fax: 754 321-1917

August 27, 2010 Signature on File

TO: Mr. James Neer, Principal

Monarch High School

FROM: Aston A. Henry, Supervisor

Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

FISH 261, 263, 429, 430, 504, 515, 524, 553,

554 and 557

<u>F</u> 0	or Custodial Supervisor Use Only
	Custodial Issues Addressed
	Custodial Issues Not Addressed

On August 19, 2010, I conducted an assessment of FISH 261, 263, 429, 430, 504, 515, 524, 553, 554 and 557 at **Monarch High 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.

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 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 754-321-1900.

cc: Sharon Airaghi, Area Superintendent

Jackie Haywood, Area Director

Jeffrey S. Moquin, Executive Director, Support Operations

Mark Dorsett, Acting Director, Physical Plant Operations Division, Maintenance Dennis DiLeonardo, Project Manager, Facilities and Construction Management

Gary Itzkowitz, Broward Teachers Union

Roy Jarrett, Federation of Public Employees

Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

AH/tc Enc.

	Monar	ch High School		Evaluation	Requested	August 19, 2010			
Time of Day				Eval	uation Date [	August 19, 2010			
Outdoor Conditions	Temperatur	e 93.7	Relative Humidit	62.3	Ambier	nt CO2 371			
	71.2 Range 71.2 72 - 78	Relative Humidity 69.1 Visible water	Range 30% - 60% Visible mic	CO2 422 robial	Rang Max 700 :	> Ambient			
l <u> </u>		damage / staining		i? n	naterial affect	ted			
Ceiling Type Wall Type	2 x 4 Lay In  Drywall	No No	No No	) <u> </u>		None			
Flooring	Tile	No	No	, <u> </u>		None			
Ceiling	Clean Minor / Del	Dust Needs oris Cleaning		Correctiv	e Action Re	quired			
	No Ye			Clean with W	lovcido disi	nfoctant			
Walls				Clean with w	rexcide disi	meciani			
Flooring	Yes	o No							
HVAC Supply Grills	Yes	o No							
HVAC Return Grills	Yes	o No							
Ceiling at Supply Grills	Yes	o No							
Surfaces in Room	Yes	No							
Observations									
Findings - Humidity level was of the based Maintenary with the second se	walls, furniture and ance:	l paper		anare with vis	ble growth				
- Continue to monitor appropriate			-	-	-	tion and clean as			
Physical Plant Operations: - Evaluate HVAC system for proper operation and repair as appropriate to lower humidity level									
NOTE: Work order	EQ01424 generate	ed							

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	Mon	arch High School	Evalua	tion Requested August 19, 2010
Time of Day				Evaluation Date August 19, 2010
Outdoor Condition	s Temperati	ure 93.7	Relative Humidity 62.	3 Ambient CO2 371
Fish Temp 263  Noticeable Odor	70.5 Range 70.5 72 - 78	Relative Humidity 69.4 Visible water	Range CO2 30% - 60% 417 Visible microbial	Range # Occupants  Max 700 > Ambient  Amount of
Ceiling Type	2 x 4 Lay In	damage / staining	growth?	material affected None
Wall Type	Drywall	No	No	None
Flooring	Tile	No	No	None
	/ D	or Dust Needs ebris Cleaning	Corre	ective Action Required
Ceiling	Yes	No No		
Walls	No	Yes Yes	Clean wi	th Wexcide disinfectant
Flooring	Yes	No No		
HVAC Supply Gril	Is Yes	No No		
HVAC Return Grill	Is Yes	No No		
Ceiling at Supply Grills	Yes	No No		
Surfaces in Room	Yes	No No		
Observations				
- Microbial growth o	on walls, furniture an nance:			
-			olution. Discard papers with growth as well as dust and	n visible growth. debris accumulation and clean as
Physical Plant Ope - Evaluate HVAC sy		eration and repair as a	appropriate to lower humidi	ty level
NOTE: Work orde	r EQ01424 genera	ted		

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	Mona	rch High School	E	valuation Requested Augu	st 19, 2010
Time of Day				Evaluation Date Augu	st 19, 2010
Outdoor Condition	ns Temperatu	re 93.7	Relative Humidity	62.3 Ambient CO2	371
429	73.1 Range 72 - 78	Relative Humidity 68.2 Visible water	italige	O2 Range  388 Max 700 > Ambie  al Amount of	# Occupants
Noticeable Odor	No	damage / staining	g? growth?	material affected	
Ceiling Type	2 x 4 Lay In	No No	No	None	
Wall Type Flooring	Drywall Tile		No	None	
Flooring		No	No	None	
		Dust Needs Cleaning		Corrective Action Required	
Ceiling	Yes	No No			
Walls	Yes	No No			
Flooring	Yes	No No			
HVAC Supply Gri	lls Yes N	No No			
HVAC Return Gri	IIs Yes N	No No			
Ceiling at Supply Grills	Yes	No No			
Surfaces in Roon	n Yes N	lo No			
Observations	_				
_	n) on edges of tables as elevated at the tim	e of the assessment			
	s with Wexcide disinf		growth as well as dust	and debris accumulation and	clean as
Physical Plant Op - Evaluate HVAC s		eration and repair as	appropriate to lower h	umidity level	
NOTE: Work orde	er EQ01424 generat	ed			

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		Monarch High	School		⊏vaiuati	on Requested	August 19, 2010
Time of Day					E	valuation Date	August 19, 2010
Outdoor Condi	itions Tem	perature 9	3.7 R	Relative Humidity	62.3	Ambie	nt CO2 371
Fish	Temperature R	Range Relati	ive Humidity	Range	CO2	Ran	ge # Occupants
430		2 - 78		80% - 60%	383		> Ambient
Noticeable Oc	lor No		isible water age / staining?	Visible micro growth?		Amount of material affect	
Ceiling Type	2 x 4 Lay l	ln	No	No	ļ		None
Wall Type	Drywall		No	No			None
Flooring	Tile		No	No			None
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive 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	oply Yes	No	No				
Surfaces in Ro	oom Yes	No	No				
bservations							
Findings (kitcher - Humidity level	<b>en)</b> I was elevated at	the time of the a	assessment				
Site Based Ma - Continue to m appropriate		n for any signs	of microbial gr	owth as well as du	ust and d	lebris accumula	ition and clean as
Physical Plant - Evaluate HVA		per operation ar	nd repair as ap	propriate to lower	r humidity	y level	
NOTE: Work	order EQ01424 g	enerated					

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		Monarch Hig	h School		Evaluati	ion Requested	Augus	st 19, 2010
Time of Day					E	Evaluation Date	Augus	st 19, 2010
Outdoor Conditions	s Temp	perature	93.7 F	Relative Humidity	62.3	Ambie	nt CO2	371
		- 78		Range 30% - 60%	<b>CO2</b> 383	Ran Max 700	> Ambieı	# Occupants
Noticeable Odor	No		/isible water nage / staining?	Visible micro growth?		Amount of material affec		
Ceiling Type	2 x 4 Lay Ir	<u>1</u>	No	Yes		\\	/arious	
Wall Type	Drywall		No	Yes		V	arious	
Flooring	Tile		No	No			None	
	Clean	Minor Dust / Debris	Needs Cleaning		Correc	ctive Action Re	quired	
Ceiling	No	Yes	Yes	Remo	ve and r	replace stained	l ceiling 1	iles
Walls	No	Yes	Yes	С	lean wit	h Wexcide disi	nfectant	
Flooring	Yes	No	No					
HVAC Supply Grill	s Yes	No	No					
HVAC Return Grills	s Yes	No	No					
Ceiling at Supply Grills	Yes	No	No					
Surfaces in Room	Yes	No	No					
bservations								

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**Location Number** 

#### 0

#### **Findings**

- Humidity level was elevated at the time of the assessment
- Multiple ceiling tiles with microbial growth
- Microbial growth on walls, furniture and paper

# Site Based Maintenance:

- Wipe down walls and furniture with Wexcide disinfectant solution. Discard papers with visible growth.
- 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 system for proper operation and repair as appropriate to lower humidity level
- Evaluate for cause of stained ceiling tiles and repair as appropriate. Remove and replace ceiling tiles as necessary.

	Mona	rch High School		Evaluation Rec	quested August 19, 2010
Time of Day				Evaluati	ion Date August 19, 2010
<b>Outdoor Conditions</b>	Temperatu	re 93.7	Relative Humidity	62.3	Ambient CO2 371
Fish Temper	ature Range	Relative Humidity	Range	CO2	Range # Occupants
515 72	2.6 <b>72 - 78</b>	58.4	30% - 60%	388	Max 700 > Ambient
Noticeable Odor	No	Visible water damage / staining	Visible micro? growth?	= :	Amount of erial affected
Ceiling Type	2 x 4 Lay In	Yes	No		Various
Wall Type	Drywall	No	No		None
Flooring	Tile	No	No		None
(	Clean Minor / De			Corrective A	ction Required
Ceiling	No	Yes	Remo	ve and replace	e stained ceiling tiles
Walls	Yes	o No			
Flooring	Yes	o No			
<b>HVAC Supply Grills</b>	Yes	o No			
HVAC Return Grills	Yes	o No			
Ceiling at Supply Grills	Yes	o No			
Surfaces in Room	Yes	o No			
bservations					
Findings - Stained ceiling tiles f	rom previous A/C	leak			
Site Based Maintena - Remove and replace - Continue to monitor tappropriate	stained ceiling til		growth as well as du	ust and debris a	accumulation and clean as

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		Monarch	High School		Evaluati	ion Requested	Augu	st 19, 2010
Time of Day		]			E	Evaluation Date	Augu	st 19, 2010
Outdoor Condi	tions Te	mperature	93.7	Relative Humidi	ty 62.3	Ambie	nt CO2 [	371
	Temperature		Relative Humidity	Range	CO2	Ran	•	# Occupants
524 Noticeable Od		72 - 78 <u> </u>	63.2 Visible water	30% - 60% Visible mid	479 robial	Max 700 :		nt
Noticeable Ou		<u> </u>	damage / staining	? growth	າ?	material affec	ted	
Ceiling Type	2 x 4 Lay	/ In	No	Yes	]	\	/arious	
Wall Type	Drywa	II	No	Yes		V	arious	
Flooring	Tile		No	No	]		None	
	Clean	Minor Du / Debris			Correc	ctive Action Re	quired	
Ceiling	No	Yes	Yes	Rem	nove and i	replace stained	ceiling	tiles
Walls	No	Yes	Yes		Clean wit	h Wexcide disi	nfectant	,
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					
bservations								

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#### 0

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			Monard	h High	School			Evaluati	on Requ	ested	Augu	ıst 19, 20	10
Time of Day								E	valuatio	n Date	Augu	ıst 19, 20	10
Outdoor Condi	itions	Te	emperature	9:	3.7	Relative Hu	umidity	62.3		Ambie	nt CO2	371	
Fish	Tempe	rature	Range	Relati	ve Humidity	Range		CO2		Ran	ge	# Occu	oants
553			72 - 78			30% - 60%			Ma	ax 700	> Ambie	ent	
Noticeable Od	lor [	No			isible water age / staining		Visible microbial Amount of growth? material affected						
Ceiling Type		2 x 4 La	ıy In		No		Yes	[		\	/arious		
Wall Type		Drywa	all		No		Yes	[		V	arious		
Flooring		Tile			No	[	No				None		
		Clean	Minor I / Deb		Needs Cleaning			Correc	tive Act	tion Re	quired		
Ceiling		No	Yes	<b>S</b>	Yes		Remo	ve and r	eplace :	stained	l ceiling	tiles	
Walls		No	Yes	3	Yes		С	lean witl	h Wexci	ide disi	nfectan	t	
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								
bservations													
E													

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			Monarc	h High	School			Evaluation	on Reques	sted	Augu	st 19, 20	10
Time of Day [			]					E	valuation l	Date [	Augu	st 19, 20	10
Outdoor Condi	itions	Те	mperature	93	3.7	Relative Hu	midity	62.3	A	mbier	nt CO2 [	371	
Fish 554  Noticeable Od Ceiling Type Wall Type				Vi	ve Humidity sible water ge / staining No		e micro rowth? Yes	CO2 bial		unt of affect	> Ambie	# Occup	pants
Flooring		Tile			No	Γ	No	Ī			None		
Ceiling Walls Flooring HVAC Supply HVAC Return Ceiling at Sup Grills Surfaces in Ro	Grills Grills		Minor D / Debr  Yes  No  No  No	is ] ] ] ]	Needs Cleaning Yes  Yes  No  No  No  No			ve and r	tive Action	ained	ceiling		
bservations													
Findings													

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			Monard	ch High	School		Evaluat	ion Requested	Augus	st 19, 2010
Time of Day			]				E	Evaluation Date	Augus	st 19, 2010
Outdoor Condi	itions	Ter	nperature	93	3.7	Relative Humi	dity 62.3	3 Ambie	nt CO2	371
557	Tempe	7	Range 72 - 78		ve Humidity	Range 30% - 60%	Max 700 > Ambier			# Occupants
Noticeable Od Ceiling Type	lor [	No 2 x 4 Lay	] In		ge / staining		vth?	material affec		
Wall Type		Drywal			No	Ye	<u> </u>		arious	
Flooring		Tile			No	No	<u> </u>		None	
	(	Clean	Minor I / Deb		Needs Cleaning		Corre	ctive Action Re	quired	
Ceiling		No	Yes	s	Yes	Re	move and	replace stained	l ceiling t	iles
Walls		No	Yes	s	Yes		Clean wit	th Wexcide disi	nfectant	
Flooring		Yes	No	•	No					
HVAC Supply	Grills	Yes	No	<u> </u>	No					
HVAC Return	Grills	Yes	No	<u> </u>	No					
Ceiling at Sup Grills	ply	Yes	No		No					
Surfaces in Ro	oom	Yes	No	]	No					
bservations										
I										

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