THE SCHOOL BOARD OF BROWARD COUNTY, FLORIDA

ENVIRONMENTAL HEALTH & SAFETY DEPARTMENT

TELEPHONE (754) 321-4200 **FACSIMILE: (754) 321-4285**

October 27, 2015 Signature on File

TO: Criag Saddler, Principal
Markham, Robert C. Elementary

FROM: Daniel Meyer, Project Manager
Environmental Health & Safety Department

SUBJECT: Indoor Air Quality (IAQ) Assessment

For Custodial Supervisor Use Only

☐ Custodial Issues Addressed

☐ Custodial Issues Not Addressed

On October 21, 2015, I conducted an assessment at **Markham, Robert C. Elementary School.** Attached are findings and recommendations for further assessment, remediation, or corrective actions 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. 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 site based custodial 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 us at 754-321-4200.

cc: Shelley Meloni, Director, Pre-Construction
Mark Dorsett, Manager, Zone 1, Physical Plant Operations Division
Broward Teachers Union
Federation of Public Employees
Gerald Devio, Supervisor II Custodial
Benjamin Osborne, Supervisor II Custodial
Rich Volipi, Supervisor II Custodial
Mark Murray, Supervisor II Custodial
Sam Bays, Director, Maintenance Operations
Kurt Wirz, Area Manager Trades

DM/je
Enc.

IAQ Assessment

Markham, Robert C. Elementary | Evaluation Date: October 21, 2015 | Time of Day: 10:00 AM

Outdoor Conditions Temperature: 82.1 | Relative Humidity: 68.4 | Ambient CO2: 415

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
134	71.0	72 - 78	57.6	30% - 60%	1564	MAX 700 > Ambient	5

Noticeable Odor: No

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Ceiling	2' X 4' Lay in	No		
Walls	Plaster	No		
Floor	12" x 12" Vinyl	No		

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	Yes				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 105			Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	Yes	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Ducted to roof-top	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	No		

Observations

High co2 levels in classroom.

Corrective Actions to be Completed by Site Based Staff	Corrective Actions to be Completed by PPO
	Repair HVAC to reduce CO2 level in classroom
	Set Temperature to 72 - 78 degrees

IAQ Assessment

Markham, Robert C. Elementary | Evaluation Date: October 21, 2015 | Time of Day: 10:00 AM

Outdoor Conditions Temperature: 82.1 | Relative Humidity: 68.4 | Ambient CO2: 415

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
133	71.1	72 - 78	68.1	30% - 60%	1608	MAX 700 > Ambient	2

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No		
Walls	Plaster	No		
Floor	12" x 12" Vinyl	No		

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	Yes				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 105			Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	Yes	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Ducted to roof-top	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	No		

Observations

High co2 levels in classroom.

Corrective Actions to be Completed by Site Based Staff	Corrective Actions to be Completed by PPO
	Repair HVAC to reduce CO2 level in classroom
	Set Temperature to 72 - 78 degrees

IAQ Assessment

Markham, Robert C. Elementary | Evaluation Date: October 21, 2015 | Time of Day: 10:00 AM

Outdoor Conditions Temperature: 82.1 | Relative Humidity: 68.4 | Ambient CO2: 415

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
132	70.6	72 - 78	68.1	30% - 60%	1610	MAX 700 > Ambient	22

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No		
Walls	Plaster	No		
Floor	12" x 12" Vinyl	No		

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	Yes				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH 105			Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	Yes	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Ducted to roof-top	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	No		

Observations

High co2 levels in classroom.

Corrective Actions to be Completed by Site Based Staff	Corrective Actions to be Completed by PPO
	Repair HVAC to reduce CO2 level in classroom
	Set Temperature to 72 - 78 degrees

IAQ Assessment

Markham, Robert C. Elementary | **Evaluation Date** October 21, 2015 | **Time of Day** 10:00 AM

Outdoor Conditions **Temperature** 82.1 **Relative Humidity** 68.4 **Ambient CO2** 415

Fish	Temperature	Range	Relative Humidity	Range	CO^2	Range	# Occupants
131	73.2	72 - 78	56.2	30% - 60%	1805	MAX 700 > Ambient	28

		Visible water damage / staining?	Visible microbial growth?	Amount of material affected
Noticeable Odor	No			
Ceiling	2' X 4' Lay in	No		
Walls	Plaster	No		
Floor	12" x 12" Vinyl	No		

Ceiling Clean	Yes	HVAC Supply Grills Clean	Yes	HVAC Return Grills Clean	Yes
Walls Clean	Yes	Inside of Supply Duct Clean	Yes	Inside of Return Duct Clean	Yes
Flooring Clean	Yes	Ceiling at Supply Grills Clean	Yes		
Room Surfaces Clean	No				

Trash Removed	Yes	Exhaust Fans Working	N/A	Unapproved Chemicals / Cleaners in Room	No
Signs of Pests	No	Drain Traps Wet	Yes	Air Fresheners in Room	No
Room Cluttered	No	Food if Stored in Room is in Sealed Containers	N/A		

Mechanical Equipment Location	FISH #105			Mechanical Room Clean	Yes
Filters Installed Properly	Yes	Filters Clean	Yes	Inside of HVAC Unit Clean	Yes
Condensate Pan Clean	Yes	Cooling Coil Clean	Yes		

Fresh Air Intake Location	Ducted to roof-top	Fresh Air Intake Free of Obstruction	Yes
Pollutant Sources Near Air Intake	No		

Observations

Book shelf dusty. Tops of books need to be dusted. 1 Supply and Return vent for large classroom. High CO2 levels. Wipe microbial growth from ceiling in mechanical room.

Corrective Actions to be Completed by Site Based Staff

- Clean all surfaces in classroom HVAC closet
- Wipe ceiling stain w/wexcide and monitor

Corrective Actions to be Completed by PPO

- Repair HVAC to reduce CO2 level in classroom
- Evaluate supply air in classroom
- Evaluate ceiling in Fish #105