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August 10, 2005

TO: Mr. Edmond Wade, Principal  
**Blanche Ely High School**

FROM: Robert J. Krickovich, Coordinator, LEA  
Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment  
FISH 331 and Science Building

On July 28, 2005 and August 4, 2005 the IAQ Assessment Team conducted an assessment of FISH 331 and the Science Building at **Blanche Ely High School**. The evaluation consisted of a walkthrough of the identified areas to assess the current condition of the location with regard to indoor air quality. This assessment included observations of the carpet, floor tile, ceiling tile, interior walls, false ceiling plenum, and accessible ventilation equipment.

Attached are the findings of this assessment along with recommendations for further assessment, remediation, or corrective actions, if needed.

Generally, the IAQ Assessment did not identify any existing conditions significantly impacting IAQ and thereby presenting immediate health and safety concerns 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. Joanne Harrison, Area Superintendent  
Craig Anderson, Area Director  
Jeffrey S. Moquin, Director, Risk Management  
Rigo Zubizarreta, Project Manager II, Facilities and Construction Management  
LaFrances Trotter, 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 Assessment

Blanche Ely High School

Evaluation Requested July 28, 2005

Time of Day 1:00 pm

Evaluation Date July 28, 2005

Outdoor Conditions      Temperature 92.1      Relative Humidity 66.5      Ambient CO2 424

|   |   |   |  |   |   |  |   |
|---|---|---|--|---|---|--|---|
| Fish  | Temperature   | Range   | Relative Humidity  | Range   | CO2   | Range  | # Occupants   |
| <span style="border: 1px solid black; padding: 2px;">331</span> | <span style="border: 1px solid black; padding: 2px;">88.5</span>          | <span style="border: 1px solid black; padding: 2px;">72 - 78</span> | <span style="border: 1px solid black; padding: 2px;">68.8</span> | <span style="border: 1px solid black; padding: 2px;">30% - 60%</span> | <span style="border: 1px solid black; padding: 2px;">442</span> | <span style="border: 1px solid black; padding: 2px;">Max 700 &gt; Ambient</span>     | <span style="border: 1px solid black; padding: 2px;">1</span> |
| Noticeable Odor   |   | Visible water damage / staining?                                    |  | Visible microbial growth?   |   | Amount of material affected  |   |
| <span style="border: 1px solid black; padding: 2px;">No</span>  |   | <span style="border: 1px solid black; padding: 2px;">Yes</span>     |  | <span style="border: 1px solid black; padding: 2px;">No</span>        |   | <span style="border: 1px solid black; padding: 2px;">One stained tile in 330C</span> |   |
| Ceiling Type  | <span style="border: 1px solid black; padding: 2px;">2 x 4 Lay In</span>  |   | <span style="border: 1px solid black; padding: 2px;">Yes</span>  | <span style="border: 1px solid black; padding: 2px;">No</span>        |   | <span style="border: 1px solid black; padding: 2px;">One stained tile in 330C</span> |   |
| Wall Type   | <span style="border: 1px solid black; padding: 2px;">Plaster</span>       |   | <span style="border: 1px solid black; padding: 2px;">No</span>   | <span style="border: 1px solid black; padding: 2px;">No</span>        |   | <span style="border: 1px solid black; padding: 2px;">None</span>                     |   |
| Flooring  | <span style="border: 1px solid black; padding: 2px;">12 x 12 Vinyl</span> |   | <span style="border: 1px solid black; padding: 2px;">No</span>   | <span style="border: 1px solid black; padding: 2px;">No</span>        |   | <span style="border: 1px solid black; padding: 2px;">None</span>                     |   |

|                          | Clean   | Minor Dust / Debris   | Needs Cleaning  | Corrective Action Required  |
|--------------------------|---|---|---|---|
| Ceiling                  | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;"></span>                                |
| Walls                    | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;"></span>                                |
| Flooring                 | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;"></span>                                |
| HVAC Supply Grills       | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Clean with Wexcide disinfectant</span> |
| HVAC Return Grills       | <span style="border: 1px solid black; padding: 2px;"></span>    | <span style="border: 1px solid black; padding: 2px;"></span>    | <span style="border: 1px solid black; padding: 2px;"></span>    | <span style="border: 1px solid black; padding: 2px;">N/A through door</span>                |
| Ceiling at Supply Grills | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">Clean with Wexcide disinfectant</span> |
| Surfaces in Room         | <span style="border: 1px solid black; padding: 2px;">Yes</span> | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;">No</span>  | <span style="border: 1px solid black; padding: 2px;"></span>                                |

## Observations

### Findings:

- Visible microbial growth on wall in air handler room (330E)
- HVAC unit was turned off at time of assessment
- One stained ceiling tile in room 330C (outside of 330E)
- Dust and debris on HVAC supply grills
- Dust and debris on ceiling at HVAC supply grills

### Recommendations:

#### Site Based Maintenance:

- Clean HVAC supply grills with Wexcide disinfectant solution
- Clean ceiling at HVAC supply grills
- 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 Division:

- Evaluate and repair cause of stained ceiling tile in room 330C and repair as appropriate and replace ceiling tile
- Evaluate and remove and replace damaged drywall in room 330E
- Evaluate HVAC unit for proper operation and instruct site based staff on proper operation of unit

# IAQ Assessment

Blanche Ely High School

Evaluation Requested

Time of Day

Evaluation Date

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

|                                      |  |                                      |                                   |  |  |   |                                |
|--------------------------------------|--|--------------------------------------|-----------------------------------|--|--|---|--------------------------------|
| Fish                                 | Temperature                                | Range                                | Relative Humidity                 | Range                                  | CO2  | Range   | # Occupants                    |
| <input type="text" value="Science"/> | <input type="text" value="72.1"/>          | <input type="text" value="72 - 78"/> | <input type="text" value="56.3"/> | <input type="text" value="30% - 60%"/> | <input type="text" value="441"/>                 | <input type="text" value="Max 700 &gt; Ambient"/> | <input type="text" value="2"/> |
| Noticeable Odor                      |  | <input type="text" value="No"/>      | Visible water damage / staining?  |  | Visible microbial growth?                        |   | Amount of material affected    |
| Ceiling Type                         | <input type="text" value="2 x 4 Lay In"/>  |                                      | <input type="text" value="Yes"/>  | <input type="text" value="Yes"/>       | <input type="text" value="Around exhaust fans"/> |   |                                |
| Wall Type                            | <input type="text" value="Drywall"/>       |                                      | <input type="text" value="No"/>   | <input type="text" value="No"/>        | <input type="text" value="None"/>                |   |                                |
| Flooring                             | <input type="text" value="12 x 12 Vinyl"/> |                                      | <input type="text" value="Yes"/>  | <input type="text" value="No"/>        | <input type="text" value="Under exhaust fans"/>  |   |                                |

|                          | Clean                            | Minor Dust / Debris              | Needs Cleaning                   | Corrective Action Required                                   |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|--|
| Ceiling                  | <input type="text" value="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/>            |
| Walls                    | <input type="text" value="Yes"/> | <input type="text" value="No"/>  | <input type="text" value="No"/>  | <input type="text" value=""/>                                |
| Flooring                 | <input type="text" value="Yes"/> | <input type="text" value="No"/>  | <input type="text" value="No"/>  | <input type="text" value=""/>                                |
| HVAC Supply Grills       | <input type="text" value="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean with Wexcide disinfectant"/> |
| HVAC Return Grills       | <input type="text" value="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean with Wexcide disinfectant"/> |
| Ceiling at Supply Grills | <input type="text" value="No"/>  | <input type="text" value="Yes"/> | <input type="text" value="Yes"/> | <input type="text" value="Clean as appropriate"/>            |
| Surfaces in Room         | <input type="text" value="Yes"/> | <input type="text" value="No"/>  | <input type="text" value="No"/>  | <input type="text" value=""/>                                |

## Observations

### Findings: Entire Science Building

- Microbial growth on ceiling tiles around and under exhaust fan duct work
- Heavy dust and debris on ceiling and fire sprinklers
- Dust and debris on HVAC supply and return grills
- Heavy dust and debris on ceiling at HVAC supply grills
- One damper actuator not wired
- Building is in negative pressure

### Recommendations:

#### Site Based Maintenance:

- Clean ceiling and fire sprinklers as appropriate
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean ceiling at HVAC supply grills as appropriate
- 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 Division:

- Evaluate HVAC for proper operation and check all controls and repair as appropriate
- Evaluate damper actuators for proper operation and repair as appropriate (one was not wired)
- Insulate duct as necessary and evaluate exhaust ducts for proper operation
- Replace all damaged ceiling tiles and check interlock of all exhaust fans