

Jeffrey S. Moquin, Director  
Risk Management Department

Telephone: 754-321-3200  
Facsimile: 754-321-3290

April 18, 2007

**Signature on File**

TO: Mr. Israel Canales, Manager  
**Administrative Sites**

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

SUBJECT: Indoor Air Quality (IAQ) Assessment  
**FISH 202, 206, 225, 234, 251 and 252**

On March 15 and 28, 2007 various members of the IAQ Assessment Team conducted an assessment of FISH 202, 206, 225, 234, 251 and 252 at TSSC - ETS. 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: Jeffrey S. Moquin, Director, Risk Management  
Henry Verdugo, Project Manager, Facilities and Construction Management  
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1  
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc  
Enc.

# IAQ Assessment

TSSC Building - ETS

Location Number   
 Evaluation Requested   
 Evaluation Date

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="202"/>	<input type="text" value="74.2"/>	<input type="text" value="72 - 78"/>	<input type="text" value="44.1"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1094"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text"/>
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="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
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="Carpet"/>		<input type="text" value="Yes"/>		<input type="text" value="Yes"/>		<input type="text" value="Entire Carpet"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove carpet and replace with tile"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>

## Observations

**Findings:**

- Heavy dust on carpet in corners and under desks. Carpet is heavily stained, rippled and torn.
- Live plants with visible microbial growth
- Minor dust on elevated surfaces

**-Recommendations:**

**Site Based Maintenance:**

- Expedite carpet replacement. Recommend removing carpet and replacing with tile.
- Remove live plants
- Clean elevated surfaces throughout
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

TSSC Building - ETS

Location Number   
 Evaluation Requested   
 Evaluation Date

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="206"/>	<input type="text" value="74.6"/>	<input type="text" value="72 - 78"/>	<input type="text" value="45"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1129"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text"/>
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="No"/>	<input type="text" value="No"/>		<input type="text" value="None"/>		
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="Carpet"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>		<input type="text" value="Entire Carpet"/>		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove carpet and replace with tile"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>

## Observations

**Findings:**

- Heavy dust on carpet in corners and under desks. Carpet is heavily stained, rippled and torn.
- Minor dust on elevated surfaces

**-Recommendations:**

**Site Based Maintenance:**

- Expedite carpet replacement. Recommend removing carpet and replacing with tile.
- Clean elevated surfaces throughout
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

TSSC Building - ETS

Location Number   
 Evaluation Requested   
 Evaluation Date

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="225"/>	<input type="text" value="75.8"/>	<input type="text" value="72 - 78"/>	<input type="text" value="45.7"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1163"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="14"/>
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="No"/>	<input type="text" value="No"/>	<input type="text" value="None"/>			
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="Carpet"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Entire Carpet"/>			

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove carpet and replace with tile"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>

**Observations**

**Findings: (Open Area with cubicles)**

- Heavy dust on carpet in corners and under desks. Carpet is heavily stained, rippled and torn.
- Live plants with visible microbial growth
- HVAC supply grill was blocked with crumpled paper
- Minor dust on elevated surfaces
- Excessive storage in office area - boxes, papers, etc.

**-Recommendations:**

**Site Based Maintenance:**

- Expedite carpet replacement. Recommend removing carpet and replacing with tile.
- Remove live plants
- Remove paper from HVAC supply grill
- Clean elevated surfaces throughout
- Remove excess items - boxes, papers, etc. - from office areas
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

# IAQ Assessment

TSSC Building - ETS

Location Number   
 Evaluation Requested   
 Evaluation Date

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="234"/>	<input type="text" value="74"/>	<input type="text" value="72 - 78"/>	<input type="text" value="43.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1706"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="20"/>
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="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
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="Carpet"/>		<input type="text" value="Yes"/>		<input type="text" value="Yes"/>		<input type="text" value="Entire Carpet"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove carpet and replace with tile"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>

## Observations

### Findings: (Open Area with cubicles)

- Heavy dust on carpet in corners and under desks. Carpet is heavily stained, rippled and torn.
- Live plants with visible microbial growth
- Minor dust on elevated surfaces
- Excessive storage in office area - boxes, papers, etc.
- CO2 level was slightly elevated

### -Recommendations:

#### Site Based Maintenance:

- Expedite carpet replacement. Recommend removing carpet and replacing with tile.
- Remove live plants
- Clean elevated surfaces throughout
- Remove excess items - boxes, papers, etc. - from office areas
- 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 system to lower CO2 level

# IAQ Assessment

TSSC Building - ETS

Location Number   
 Evaluation Requested   
 Evaluation Date

Time of Day

Outdoor Conditions      Temperature       Relative Humidity       Ambient CO2

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
<input type="text" value="251 &amp; 252"/>	<input type="text" value="74.7"/>	<input type="text" value="72 - 78"/>	<input type="text" value="43.8"/>	<input type="text" value="30% - 60%"/>	<input type="text" value="1418"/>	<input type="text" value="Max 700 &gt; Ambient"/>	<input type="text" value="10"/>
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="No"/>		<input type="text" value="No"/>		<input type="text" value="None"/>
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="Carpet"/>		<input type="text" value="Yes"/>		<input type="text" value="Yes"/>		<input type="text" value="Entire Carpet"/>

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Walls	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Flooring	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Remove carpet and replace with tile"/>
HVAC Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
HVAC Return Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Ceiling at Supply Grills	<input type="text" value="Yes"/>	<input type="text" value="No"/>	<input type="text" value="No"/>	<input type="text"/>
Surfaces in Room	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Yes"/>	<input type="text" value="Clean as appropriate"/>

## Observations

### Findings: (Open Area with cubicles)

- Heavy dust on carpet in corners and under desks. Carpet is heavily stained, rippled and torn.
- Live plants with visible microbial growth
- Visible water staining and damage under window sill (center window South wall) and signs of water intrusion at South wall corner window.
- Minor dust on elevated surfaces
- Excessive storage in office area - boxes, papers, etc.
- Heavy dust build up between partitions and walls (2 inch gap)
- Non-approved cleaning chemicals

### Recommendations:

#### Site Based Maintenance:

- Expedite carpet replacement. Recommend removing carpet and replacing with tile.
- Remove live plants
- Remove paper from HVAC supply grill
- Clean elevated surfaces throughout
- Remove excess items - boxes, papers, etc. - from office areas
- Thoroughly clean between partitions and walls
- Remove non-approved chemicals
- 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 windows for proper seal and reseal as appropriate. Repair wall material around windows as appropriate.