

# managing risk with responsibility

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Jeffrey S. Moquin, Director Risk Management Department

March 2, 2007

Signature on File

TO: Tom Lindner, Director

**Physical Plant Operations** 

FROM: Robert J. Krickovich, Coordinator, LEA

Facilities and Construction Management, Environmental Division

SUBJECT: Indoor Air Quality (IAQ) Assessment

Call Center - FISH 010, 262, 263, 264, 270 and 272

On February 16, 2007 I conducted an assessment of FISH 010, 262, 263, 264, 270 and 272 at **Physical Plant Operations Call Center**. 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
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division

RK/tc Enc.

	Physical Pla	nt Operations	s - Call Center		Evaluati	on Requested	February	9, 2007
Time of Day	1:00 pm		_		E	Evaluation Date	February 1	6, 2007
Outdoor Cond	litions T	emperature	76.7	Relative Humidity	53.6	Ambie	nt CO2 4	64
Fish	Temperature	Range	Relative Humidity	Range	CO2	Ran	ige # O	ccupants
010	70.1	72 - 78	47.2	30% - 60%	667	Max 700	> Ambient	1
Noticeable O	dor No		Visible water damage / staining	Visible micro g? growth?		Amount of ma affected	terial	
Ceiling Type	2 x 2 L	ay In	Yes	No		2 c	eiling tiles	
Wall Type	Dryw	/all	No	No			None	
Flooring	Carp	et	No	No			None	
	Clean	Minor D / Debr	is Cleaning		Correc	ctive Action Re	equired	
Ceiling	No	Yes	Yes	Remo	ve and r	eplace stained	d ceiling tiles	3
Walls	Yes	No	No					
Flooring	Yes	No	No					
HVAC Supply	Grills No	Yes	Yes	С	lean witl	h Wexcide dis	infectant	
HVAC Return	Grills No	Yes	Yes	С	lean witl	h Wexcide dis	infectant	
Ceiling at Sup Grills	oply Yes	No	No					
Surfaces in R	oom Yes	No	No					
Observations								
Findings, Co.	ridor							

**Location Number** 

- Occupants advised that there is an odor first thing in the morning
- 2 stained ceiling tiles over fire alarm panel
- Heavy dust and debris on HVAC supply and return grills and on ceiling at HVAC supply grills
- A/C filters were packed solid with dust and dirt and were being pulled into the return box allowing bypass of filtration
- Dust build up on HVAC coils

# Recommendations:

# Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Remove and replace A/C filters and ensure that they are changed regularly
- 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 cause of stained ceiling tiles over fire alarm panel and replace ceiling tiles as appropriate
- Clean HVAC coils

	Physical Plant	Operations - Ca	III Center		Evaluation	n Requested	February 9, 2007
Time of Day	1:00 pm	]			Eva	aluation Date	February 16, 2007
Outdoor Condi	tions Ten	nperature	<b>'6.7</b>	Relative Humidity	53.6	Ambie	nt CO2 464
Fish	Temperature	Range Rela	tive Humidity	Range	CO2	Ran	ge # Occupants
262	74.6 <b>7</b>	<b>72 - 78</b>	55.9	30% - 60%	841	Max 700	> Ambient 2
Noticeable Od		dam	/isible water lage / staining	Visible micro growth?		Amount of mat affected	
Ceiling Type	2 x 4 Lay	In	Yes	No		1 c	eiling tile
Wall Type	Drywall		Yes	No		32 s	quare feet
Flooring	Carpet		Yes	No		16 s	quare feet
	Clean	Minor Dust / Debris	Needs Cleaning		Correcti	ve Action Re	quired
Ceiling	No	Yes	Yes	Remo	ove and re	place staine	d ceiling tile
Walls	No	Yes	Yes	Rei	move and	replace as a	opropriate
Flooring	No	Yes	Yes	Rei	move and	replace as a	opropriate
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills				N/A -	through doo	or
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom No	Yes	Yes		Clean	as appropria	ate
bservations							

**Location Number** 

# 0

# Findings:

- One stained ceiling tile in the corner of the room
- · Wall (32 square feet) and carpet (16 square feet) stained from water intrusion under stained ceiling tile. Water intrusion possibly from where the stairs are attached to the exterior of the building - bad patch around attachment.
- Heavy dust build up on environmental surfaces throughout the room

# Recommendations:

# Site Based Maintenance:

- Thoroughly clean all surfaces throughout the room to remove dust and debris
- 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 cause of water intrusion and repair as appropriate. Possibly from where the stairs are attached to the exterior of the building - bad patch around attachment.
- Remove and replace ceiling tile, wall material and carpet as appropriate.

	Physical Pla	nt Operations	s - Call Center		Evaluatio	n Requested	February 9, 2007
Time of Day	1:00 pm				Ev	aluation Date	February 16, 2007
Outdoor Condi	tions T	emperature	76.7	Relative Humidi	ty 53.6	Ambier	nt CO2 464
Fish	Temperature	Range	Relative Humidity	/ Range	CO2	Ran	ge # Occupants
263	74.2	72 - 78	57.2	30% - 60%	941	Max 700 :	> Ambient 2
Noticeable Od	lor No		Visible water damage / staining	Visible mid g? growth	_	Amount of mat affected	erial
Ceiling Type	2 x 4 L	ay In	No	No	] L		None
Wall Type	Dryw	/all	No	No	] [		None
Flooring	Carp	et	Yes	No	] [	Let	ft of door
	Clean	Minor D / Debri		]	Correct	ive Action Re	quired
Ceiling	Yes	No	No				
Walls	Yes	No	No				
Flooring	Yes	No	No				
HVAC Supply	Grills Yes	No	No				
HVAC Return	Grills		]		N/A	- through doc	or
Ceiling at Sup Grills	ply Yes	No	No				
Surfaces in Ro	oom No	Yes	Yes		Clean	n as appropria	ate
) Diservations							
	et to the left of or drain under the he room	f the door whe the carpet is b			be coming (	up from the flo	or from time to time -

**Location Number** 

- Heavy dust build up on environmental surfaces throughout the room

# Recommendations:

- Site Based Maintenance:
   Initiate a work order through PPO next time the carpet is wet to investigate cause of moisture
- Remove live plant from the room
- Thoroughly clean floor and all surfaces throughout the room to remove dust and debris
  Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Time of Day 1:00 pm  Outdoor Conditions Temperature 76.7 Relative Humidity 53.6 Ambient CO2 464  Fish Temperature Range 75.6 72 - 78 53.3 30% - 60% 967 Max 700 > Ambient 12  Noticeable Odor No Visible water damage / Staining? Ceiling Type 2 x 4 Lay In No No No None  Flooring Carpet No No No No None  Clean Minor Dust / Debris Cleaning Ceiling No Yes Yes Clean as appropriate  Flooring No Yes Yes Clean as appropriate  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply No Yes Yes Clean as appropriate  Ceiling at Supply No Yes Yes Clean as appropriate  Ceiling at Supply No Yes Yes Clean as appropriate  Clean with Wexcide disinfectant  Ceiling at Supply No Yes Yes Clean as appropriate		Physical Plant	Operations -	Call Center		Evaluat	ion Requested	February	/ 9, 2007
Fish Temperature Range Relative Humidity Range CO2 Range #Occupants 75.6 72 - 78 53.3 30% - 60% 967 Max 700 > Ambient 12  Noticeable Odor No Visible water damage / staining? Visible microbial growth? Amount of material affected  Ceiling Type 2 x 4 Lay In No No None  Wall Type Drywall No No None  Flooring Carpet No No No None  Clean Minor Dust / Debris Cleaning  Ceiling No Yes Yes Clean as appropriate  Walls No Yes Yes Clean as appropriate  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply No Yes Yes Clean as appropriate  Clean as appropriate  Clean as appropriate  Clean with Wexcide disinfectant  Ceiling at Supply No Yes Yes Clean as appropriate	Time of Day	1:00 pm	]			E	Evaluation Date	February	16, 2007
264	Outdoor Condi	tions Ter	mperature [	76.7	Relative Humidity	53.6	Ambie	nt CO2	464
Noticeable Odor No Visible water damage / staining?  Ceiling Type 2 x 4 Lay In No No None  Wall Type Drywall No No No None  Flooring Carpet No No No None  Clean Minor Dust / Debris Cleaning  Ceiling No Yes Yes Clean as appropriate  Walls No Yes Yes Clean as appropriate  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Ro Yes Clean as appropriate	Fish	Temperature	Range R	elative Humidity	Range	CO2	Ran	ge # (	Occupants
Ceiling Type	264	75.6	72 - 78	53.3	30% - 60%	967	Max 700	> Ambient	12
Wall Type Drywall No No No No None    Clean   Minor Dust / Debris   Cleaning   Corrective Action Required	Noticeable Od	lor No	d					terial	
Clean Minor Dust / Debris Cleaning Corrective Action Required  Ceiling No Yes Yes Clean as appropriate  Walls No Yes Yes Clean as appropriate  Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean as appropriate  Ceiling at Supply Ro Yes Clean as appropriate  Yes Clean with Wexcide disinfectant  Ceiling at Supply Ro Yes Clean as appropriate	Ceiling Type	2 x 4 Lay	/ In	No	No			None	
Clean Minor Dust / Debris Cleaning Corrective Action Required  Ceiling No Yes Yes Clean as appropriate  Walls No Yes Yes Clean as appropriate  Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Grills No Yes Yes Clean as appropriate  Ceiling at Supply Grills No Yes Yes Clean as appropriate	Wall Type	Drywa	II	No	No			None	
Ceiling No Yes Yes Clean as appropriate  Walls No Yes Yes Clean as appropriate  Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Grills No Yes Yes Clean as appropriate  Ceiling at Supply Grills No Yes Yes Clean as appropriate	Flooring	Carpet		No	No			None	
Walls No Yes Yes Clean as appropriate  Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply No Yes Yes Clean as appropriate  Grills		Clean				Correc	ctive Action Re	equired	
Flooring No Yes Yes Clean and sanitize  HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Grills No Yes Yes Clean as appropriate  Grills	Ceiling	No	Yes	Yes		Clea	an as appropri	ate	
HVAC Supply Grills No Yes Yes Clean with Wexcide disinfectant  HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Grills No Yes Yes Clean as appropriate	Walls	No	Yes	Yes		Clea	an as appropri	ate	
HVAC Return Grills No Yes Yes Clean with Wexcide disinfectant  Ceiling at Supply Grills  Clean as appropriate	Flooring	No	Yes	Yes		Cle	ean and sanitiz	:e	
Ceiling at Supply No Yes Clean as appropriate Grills	HVAC Supply	Grills No	Yes	Yes		Clean wit	h Wexcide disi	nfectant	
Grills	HVAC Return	Grills No	Yes	Yes		Clean wit	h Wexcide disi	nfectant	
		ply No	Yes	Yes		Clea	an as appropri	ate	
Surfaces in Room No Yes Yes Clean as appropriate	Surfaces in Ro	oom No	Yes	Yes		Clea	an as appropri	ate	

**Location Number** 

# Observations

### Findings:

- Occupants advised that there is an odor first thing in the morning
- Dust and debris on ceiling and walls
- Stains on carpet
- Heavy dust and debris on HVAC supply and return grills and on ceiling at HVAC supply grills
- A/C filters were packed solid with dust and dirt and were being pulled into the return box allowing bypass of filtration
- Heavy dust build up on environmental surfaces throughout the room
- Dust build up on HVAC coils

### Recommendations:

# Site Based Maintenance:

- Thoroughly clean ceiling, walls and all surfaces throughout the room to remove dust and debris
- Thoroughly clean and sanitize carpet
- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Remove and replace A/C filters and ensure that they are changed regularly
- 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:

- Clean HVAC coils

	Physical Pla	nt Operations	- Call Center		Evaluation	Requested	February 9, 2007	
Time of Day	1:00 pm				Eva	luation Date	February 16, 2007	
Outdoor Cond	itions T	emperature	76.7	Relative Humidit	y 53.6	Ambie	nt CO2 464	
Fish	Temperature	Range	Relative Humidity	' Range	CO2	Ran	ige # Occupant	ts
270	76.5	72 - 78	49.2	30% - 60%	716	Max 700	> Ambient 3	
Noticeable O	dor No		Visible water damage / staining	Visible mic g? growth		mount of ma affected	terial	_
Ceiling Type	2 x 4 L	ay In	Yes	No		2 c	eiling tiles	
Wall Type	Dryw	vall	No	No			None	
Flooring	12 x 12	Vinyl	No	No			None	]
	Clean	Minor D / Debri		1	Correcti	e Action Re	equired	
Ceiling	Yes	No	No					]
Walls	Yes	No	No					]
Flooring	Yes	No	No					]
HVAC Supply	Grills No	Yes	Yes		Clean with	Wexcide dis	infectant	]
HVAC Return	Grills No	Yes	Yes		Clean with	Wexcide dis	infectant	]
Ceiling at Sup Grills	oply No	Yes	Yes	Rem	ove and rep	olace stained	d ceiling tiles	]
Surfaces in R	oom No	Yes	Yes		Clean	as appropri	ate	]
								_

**Location Number** 

# **Observations**

### Findings:

- Occupants advised that there is an odor first thing in the morning
- 2 stained ceiling tiles at HVAC supply grills
- Heavy dust and debris on HVAC supply and return grills and on ceiling at HVAC supply grills
- A/C filters were packed solid with dust and dirt and were being pulled into the return box allowing bypass of filtration
- Heavy dust build up on environmental surfaces throughout the room
- Dust build up on HVAC coils

### -Recommendations:

# Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Remove and replace A/C filters and ensure that they are changed regularly
- 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 cause of stained ceiling tiles at HVAC supply grills and replace ceiling tiles as appropriate
- Clean HVAC coils

Physical Plant Operations - Call Center Evaluation Requested February 9, 2007								
Time of Day 1:00 pm Evaluation Date February 16, 2007								
Temperatur	e 76.7	Relative Humidity	53.6 Ambie	ent CO2 464				
erature         Range           6.8         72 - 78	42.7	30% - 60%	709 <b>Max 700</b>	nge # Occupants 0 > Ambient 2				
No			bial Amount of ma affected					
2 x 4 Lay In	No	No		None				
Drywall	No	No		None				
Carpet	No	No		None				
		ı	Corrective Action R	equired				
No	Yes		Clean as appropr	riate				
No	Yes		Clean as appropr	riate				
Yes	No							
HVAC Supply Grills Yes No No								
HVAC Return Grills N/A - through door								
Yes	No							
Surfaces in Room No Yes Yes Clean as appropriate								
on environmental sole microbial growth ince:  ling, walls and all soling tile in closet om the room	urfaces throughout to on the soil urfaces throughout to	the room		tion and clean as				
	Temperature  Prature Range 6.8 72 - 78  No  2 x 4 Lay In  Drywall  Carpet  Clean Minor / Det  No Ye  No Yes  No  Yes No  Yes No  Yes No  Yes No  Yes No  Teelling and walls and all sele microbial growth  Ince: Illing, walls and all sele in closet on the room	Temperature 76.7  Temperature Range Relative Humidity 6.8 72 - 78 42.7  No Visible water damage / staining 2 x 4 Lay In No  Carpet No  Clean Minor Dust Cleaning No Yes Yes  No Yes Yes  No No Yes Yes  Yes No No  Yes No No  Yes No No  Yes No No  Yes Yes  Yes No No  Yes Yes  Yes No No  The provided the space above on environmental surfaces throughout the microbial growth on the soil  The provided the space above on environmental surfaces throughout the microbial growth on the soil  The provided the space above on environmental surfaces throughout the microbial growth on the soil	Temperature 76.7 Relative Humidity  Prature Range Relative Humidity Range 6.8 72 - 78 42.7 30% - 60%  No Visible water damage / staining?  2 x 4 Lay In No No  Carpet No No  Clean Minor Dust Needs / Debris Cleaning  No Yes Yes  Yes No No  Yes Yes  Yes No No  Yes Yes  Yes No No No  Yes No No No  Yes No No No No  Yes No	Temperature 76.7 Relative Humidity 53.6 Ambi  relative Range Relative Humidity Range CO2 Ra 6.8 72 - 78 42.7 30% - 60% 709 Max 700  No Visible water damage / staining? 2 x 4 Lay In No No No  Carpet No No No Carpet No No No Cleaning Corrective Action R  No Yes Yes Clean as approprime Selling and walls s missing and open to the space above on environmental surfaces throughout the room le microbial growth on the soil				

**Location Number**