Gilsenan, Michael

From: Callahan.Kathy@epamail.epa.gov
Sent: Friday, December 20, 2002 3:23 PM
To: krishr@nyc.dep.gov
Cc: Gilsenan, Michael; Avaltroni, Robert; Maldonado, Jane
Subject: Fw: Ventilation system final inspection checklist and guidance

HVAC_CHECKLIST_ sent to EPA_rev... Guidance for Evaluation Form_...

krish, hi! here is the latest version of the new HVAC checklist and the
directions for completing it. ray was not able to forward it to you
from his home. as i discussed with bob a. we would like to meet with
you and your expert (i'm sorry i am not recalling his name right
now....) to go over the checklist and what we want to say to the
contractors to brief them on how to implement. can you make it on
monday at 10 am? ray and staff will be there. we can then decide when
to bring in the contractors.

let me know if this is a problem. we are all anxious to get the
direction for the future set up, i know. thanks. call if you have
questions; i am in for a few more hours. kathy

Kathleen C. Callahan
212-637-3116
212-637-3115 (fax)
----- Forwarded by Kathy Callahan/R2/USEPA/US on 12/20/2002 03:11 PM

Dore LaPosta/R2/USEPA /US@EPA	To:	Kathy Callahan/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
	cc:	
12/20/2002 11:36 AM	Subject:	Fw: Ventilation system final inspection checklist and guidance

Here it is

Sent from my BlackBerry Wireless Handheld.

----- Original Message -----
From: Ann Eckmann [aeckmann@covinoinc.com]
Sent: 12/20/2002 12:13 PM
To: Dore LaPosta/R2/USEPA/US@EPA
Subject: Ventilation system final inspection checklist and guidance

Dore, following please find our final checklist and guidance. Please
call
if you have questions or need additional information - I will be here
until

3:30 pm today. You can always get in touch with me by contacting our office. If I don't hear back from you today have a nice holiday.

Ann Eckmann
781-933-2555 (phone)
781-932-9402 (fax)
aeckmann@covinoinc.com (email)

(See attached file: HVAC_CHECKLIST_sent to EPA_rev 1f.doc)(See attached file: Guidance for Evaluation Form_rev2.doc)

VENTILATION SYSTEM EVALUATION FORM

Please complete this form in accordance with instructions in the accompanying guidance document

Part 1.0 General Information

Date of evaluation:	Building contact name and phone:
Evaluation team (list name and affiliation):	
	(Environmental professional)
	(HVAC professional)
Building address:	Type of Facility (check all that apply):
	☐ Residential
	☐ Multi-use
	☐ Other (describe)
Date of construction:	
Number of residential units:	Number of floors:
Prior inspection report/maintenance records available for review?:	
Other comments	

Ventilation system types (check all that apply and indicate total no. of units)

☐ Central ventilation system Est. no. of units_____	☐ Mechanical exhaust system Est. no. of units_____
☐ Mechanical make-up air system Est. no. of units_____	☐ Passive shaft/duct Est. no. of units_____
☐ Other (describe)	

I certify that to the best of my knowledge, the information and observations recorded on this form including all attachments are a true and accurate representation of site conditions.

_____ _____

Ventilation System (HVAC) Evaluator **Date**

Part 2.0 Visual Inspection Forms

Use the attached forms to document visual inspections. Complete the forms in accordance with instructions in the accompanying guidance document.

2.1 Central Ventilation System Visual Inspection Form

Ventilation System Identification:			
Location:	Area Served:		
Associated mechanical room: clean___Y___N dry___Y___N stored chemicals/refuse___Y___N			
System Components [NOTE: if component not present (NP), not found (NF) or inaccessible (I) please indicate in last column]	**Surface Dust/ Debris Present?**	**WTC Dust Present?**	**Component • not present • not found • inaccessible**
Outside air intake: Location: Accessible for inspection? Y_____N_____(explain):			
– louvers, grates and/or screens			
– outside air duct			
– outside air damper(s)			
Air handling unit:			
– outside air mixing chamber			
– filter rack(s)			
– filter media			
– blower assembly incl. blower wheel, blower housing, air vanes, in-line noise attenuators			
– blower housing acoustical lining			
– pre-heat coils			
– heating coils			
– cooling coils			
– re-heat coils			
– condensate drain pan			
– supply air plenum			
– supply air plenum damper(s)			
– vibration collars			
Supply air distribution: – Supply air ducts Est. total ln ft_____ No. locations inspected_____ Specify type (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Accessible in-line fire dampers Est. total qty_____ No. locations inspected_____			
– Accessible turning vanes Est. total qty_____ No. locations inspected_____			
– In-line reheat/cooling coils Est. total qty_____ No. locations inspected_____			
– Supply air diffusers Est. total qty_____ No. locations inspected_____			
Return air distribution: – Return air ducts Est. total ln ft_____ No. locations inspected_____ Specify type (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Return air plenum Est. total RA plenum areas_____ No. locations inspected_____			
– Return air plenum damper Est. total qty_____ No. locations inspected_____			
– Accessible in-line fire dampers Est. total qty_____ No. locations inspected_____			
– Accessible turning vanes Est. total qty_____ No. locations inspected_____			
– Return air grilles Est. total qty _____ No. locations inspected_____			

2.1 Central Ventilation System Visual Inspection Form

System Components [NOTE: if component not present (NP), not found (NF) or inaccessible (I) please indicate in last column]	Surface Dust/ Debris Present?	WTC Dust Present?	Component • not present • not found • inaccessible
Other (specify):			

Other Information:

Filter loading (light, moderate, heavy):_____

☐ Abraded/delaminated acoustical lining

☐ Filter bypass (describe)

General impression (indicate recommendations for cleaning based on finding of WTC dust):

KEY: NP = not present; NF = not found; I = inaccessible; U = unknown

2.2 Mechanical Exhaust System Visual Inspection Form

Mechanical Exhaust System Identification:			
Location:	Area Served:		
Associated mechanical room: clean___Y___N dry___Y___N stored chemicals/refuse___Y___N			
System Components [NOTE: if component not present (NP), not found (NF) or inaccessible (I) please indicate in last column]	**Surface Dust/ Debris Present?**	**WTC Dust Present?**	**Component • not present • not found • inaccessible**
Exhaust air outlet: Location: Accessible for inspection? Y___N___(explain):			
– louvers, grates and/or screens			
– outside air duct			
– outside air damper(s)			
Exhaust fan unit:			
– blower assembly incl. blower wheel, housing, air vanes, in-line noise attenuators			
– blower housing acoustical lining			
– vibration collars			
Exhaust air distribution: – Exhaust air ducts Est. total ln ft___ No. locations inspected___ Specify type (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Accessible in-line fire dampers Est. total qty___ No. locations inspected___			
– Accessible turning vanes Est. total qty___ No. locations inspected___			
– Exhaust air grilles Est. total qty___ No. locations inspected___			
Other (specify):			

Other Information:

General impression (indicate recommendations for cleaning based on finding of WTC dust):

KEY: NP = not present; NF = not found; I = inaccessible; U = unknown

2.3 Mechanical Make-up Air System Visual Inspection Form

Mechanical Make-up Air System Identification:			
Location:	Area Served:		
Associated mechanical room: clean___Y___N dry___Y___N stored chemicals/refuse___Y___N			
System Components (if component not present, not found or inaccessible please indicate)	**Surface Dust/ Debris Present?**	**WTC Dust Present?**	**Component • not present • not found • inaccessible**
Outside air intake: Location: Accessible for inspection? Y_____N_____(explain):			
– louvers, grates and/or screens			
– outside air duct			
– outside air damper(s)			
Make-up air handling unit:			
– outside air mixing chamber			
– filter rack(s)			
– filter media			
– blower assembly incl. blower wheel, blower housing, air vanes, in-line noise attenuators			
– blower housing acoustical lining			
– pre-heat coils			
– heating coils			
– cooling coils			
– re-heat coils			
– condensate drain pan			
– supply air plenum			
– supply air plenum damper(s)			
– vibration collars			
Make-up air distribution: – Make-up air ducts Est.Total ln ft_____ No. locations inspected_____ Specify type (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Accessible in-line fire dampers Est. total qty_____ No. locations inspected_____			
– Accessible turning vanes Est. total qty_____ No. locations inspected_____			
– In-line reheat/cooling coils Est. total qty_____ No. locations inspected_____			
– Supply air diffusers Est. total qty_____ No. locations inspected_____			
Other (specify):			

Other Information:

Filter loading (light, moderate, heavy):_____

☐ Abraded/delaminated acoustical lining

☐ Filter bypass (describe)

2.3 Mechanical Make-up Air System Visual Inspection Form

General impression (indicate recommendations for cleaning based on finding of WTC dust):
KEY: NP = not present; NF = not found; I = inaccessible; U = unknown

2.4 Passive Shaft/Duct Visual Inspection Form

Passive Shaft/Duct Identification:			
Location:	Area Served:		
System Components [NOTE: if component not present (NP), not found (NF) or inaccessible (I) please indicate in last column]	**Surface Dust/ Debris Present?**	**WTC Dust Present?**	**Component • not present • not found • inaccessible**
Outside air intake (if servicing supply air): Location: Accessible for inspection? Y_____N_____(explain):			
– louvers, grates, screens or weather cap			
Exhaust outlet/louver (if servicing exhaust air): Location: Accessible for inspection? Y_____N_____(explain):			
– louvers, grates, screens or weather cap			
Supply air distribution (if servicing supply air): – Supply air outlet(s) Est. total qty_____ No. locations inspected_____ Specify shaft substrate (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Accessible fire dampers Est. total qty_____ No. locations inspected_____			
– Pipes/mechanical equipment, etc. located in shaft	P		
Return air distribution (if servicing exhaust air): – Exhaust air inlet(s) Est. total qty_____ No. locations inspected_____ Specify shaft substrate (circle): metal fibrous glass lined metal masonry fibrous glass board flex-duct wood			
– Accessible fire dampers Est. total qty_____ No. locations inspected_____			
– Pipes/mechanical equipment, etc. located in shaft			
Other (specify):			

Other Information:

General impression (indicate recommendations for cleaning based on finding of WTC dust):

KEY: NP = not present; NF = not found; I = inaccessible; U = unknown

2.5 Other Ventilation System Visual Inspection Form

Note: complete this form only if a ventilation system is located that is not described on forms 2.1 – 2.4

Other Ventilation System Identification:			
Location:	Area Served:		
Associated mechanical room: clean___Y___N dry___Y___N stored chemicals/refuse___Y___N			
System Components [NOTE: if component is located but is inaccessible (I) please indicate in last column]	**Surface Dust/ Debris Present?**	**WTC Dust Present?**	**Component inaccessible?**

Other Information:

General impression (indicate recommendations for cleaning based on finding of WTC dust):

KEY: NP = not present; NF = not found; I = inaccessible; U = unknown

GUIDANCE FOR COMPLETING THE VENTILATION SYSTEM EVALUATION FORM

Part 1.0 General Information

Prior inspection report and/or ventilation system maintenance record available for review?

Please request and identify any records maintained by building owner or representatives of post-9/11 inspections of the building or ventilation system, cleaning, repairs, or any other post-9/11 related activity.

Other comments:

Make comments that are relevant to the determination of WTC dust in the building. Appropriate comments may include relevant historical information such as whether the building ventilation systems were operating throughout the WTC collapse. In the absence of prior inspection or maintenance records, it would be appropriate to comment on any cleaning or other modifications to the ventilation system post-9/11.

Ventilation system types:

Central ventilation system – refers to an air handling system that includes supply and return air (the air handling system may also take in outside air). A central ventilation system will typically service common areas such as lobbies, corridors, stairwells, etc.

Mechanical make-up air system - refers to a fan-operated system designed to bring outside air into the building. Mechanical make-up air systems frequently service areas where make up air is required for the operation of other equipment such as boilers, clothes dryers, or kitchen exhaust systems.

Mechanical exhaust system– refers to a fan-operated system used to remove air, moisture and odors from the building, and primarily includes bathroom and kitchen exhaust systems.

Passive shaft/duct – refers to a non-mechanically ventilated shaft that is used for passively transferring either make-up air into the building or exhaust air out of the building.

Other ventilation system – refers to any heating, ventilating or air conditioning system encountered by the HVAC Evaluator that does not fall into one of the above categories.

Part 2.0 Visual Inspection Forms

2.1 Central Ventilation System

Perform the most vigorous visual inspection possible. Minimum inspection equipment should include screwdrivers, a utility knife (for opening panels, diffusers, grilles, etc. that are painted or caulked in place), cordless drill, hole plugs, telescoping mirror, flashlight, and portable

borescope. In addition, the HVAC Evaluator should attempt to penetrate visible dust to determine if a WTC layer is present.

When a ventilation system component is accessed for inspection, indicate whether or not surface dust/debris is present, and whether or not suspect WTC dust is present in the second and third columns, respectively.

Associated Mechanical Room – indicate if there is a mechanical room associated with the central ventilation system, e.g., the air handling unit is located in the mechanical room, the mechanical room is an air mixing chamber for the air handling unit, etc.

Outside air intake, air handling unit – please check for all components that apply. If a listed component is not part of the system, then indicate "not present" (NP) in the right-hand column. If the component is likely to be present, but it cannot be located, indicate "not found" (NF) in the right-hand column. If the listed component is present and is located, but is not accessible for inspection, indicate "inaccessible" (I) in the right-hand column.

Supply air distribution – Roughly estimate the total linear footage of supply air ducts associated with the central ventilation system, and indicate the number of locations where the interior of the duct was accessed for inspection in the spaces provided. Also circle the type of material from which the duct is constructed (e.g., metal, fibrous glass lined metal, masonry, fibrous glass board, flex duct, wood). If more than one type of duct material is present, circle all that apply.

Accessible in-line fire dampers, accessible turning vanes, in-line reheat/cooling coils, supply air diffusers – roughly estimate the number of each type of component present. If the component is completely inaccessible, the estimated quantity should be listed as "unknown". If the component is clearly not present, the estimated quantity is zero. Indicate the number of locations where the listed component was accessed for inspection in the space provided.

Return air distribution - roughly estimate the total linear footage of return air ducts associated with the central ventilation system, and indicate the number of locations where the interior of the duct was accessed for inspection in the spaces provided. Also circle the type of material from which the duct is constructed (e.g., metal, fibrous glass lined metal, masonry, fibrous glass board, flex duct, wood). If more than one type of duct material is present, circle all that apply.

Return air plenum, return air plenum damper, accessible in-line fire dampers, accessible turning vanes, return air grilles – roughly estimate the number of each type of component present. If the component is completely inaccessible, the estimated quantity should be listed as "unknown". If the component is clearly not present, the estimated quantity is zero. Indicate the number of locations where the listed component was accessed for inspection in the space provided.

Other components–use this space to describe any other component not already included on the form that is part of the central ventilation system.

Other information –

Indicate the level of visible particulate loading on the filter. Light – lightly visible accumulation. Moderate – obvious visible accumulation. Heavy – heavy accumulation that may result in filter panel disfiguration or filter bypass.

Indicate whether damaged interior acoustical duct lining is observed. If possible, note the location where the damage is observed.

Indicate obvious sources of filter bypass, e.g., improper size of filters, tracks, damaged or missing tracks, or other causes of poor fit in tracks.

General impression – this space is for the HVAC Evaluator's general impression of whether or not cleaning is indicated based on the presence of WTC dust. The HVAC Evaluator should note any other comments that are deemed relevant to the determination of WTC dust or comments on conditions that would likely impact the scope or feasibility of cleaning.

2.2 Mechanical Exhaust System

Perform the most vigorous visual inspection possible. Minimum inspection equipment should include screwdrivers, a utility knife (for opening panels, diffusers, grilles, etc. that are painted or caulked in place), cordless drill, hole plugs, telescoping mirror, flashlight, and portable borescope. In addition, the HVAC Evaluator should attempt to penetrate visible dust to determine if a WTC layer is present.

When a ventilation system component is accessed for inspection, indicate whether or not surface dust/debris is present, and whether or not suspect WTC dust is present in the second and third columns, respectively.

Associated Mechanical Room – indicate if there is a mechanical room associated with the mechanical exhaust system, e.g., the exhaust fan unit is located in the mechanical room.

Exhaust air outlet, exhaust fan unit – please check for all components that apply. If a listed component is not part of the system, then indicate "not present" (NP) in the right-hand column. If the component is likely to be present, but it cannot be located, indicate "not found" (NF) in the right-hand column. If the listed component is present and is located, but is not accessible for inspection, indicate "inaccessible" (I) in the right-hand column.

Exhaust air distribution – Roughly estimate the total linear footage of mechanical exhaust air ducts associated with the mechanical exhaust system, and indicate the number of locations where the interior of the duct was accessed for inspection in the spaces provided. Also circle the type of material from which the duct is constructed (e.g., metal, fibrous glass lined metal, masonry, fibrous glass board, flex duct, wood). If more than one type of duct material is present, circle all that apply.

Accessible in-line fire dampers, accessible turning vanes, exhaust air grilles – roughly estimate the number of each type of component present. If the component is completely inaccessible, the estimated quantity should be listed as "unknown". If the component is clearly not present, the estimated quantity is zero. Indicate the number of locations where the listed component was accessed for inspection in the space provided.

Other components – use this space to describe any other component not already included on the form that is part of the mechanical exhaust system.

Other information – use this space if needed to indicate any other information relevant for documenting the condition of the mechanical exhaust system.

General impression – this space is for the HVAC Evaluator's general impression of whether or not cleaning is indicated based on the presence of WTC dust. The HVAC Evaluator should note any other comments that are deemed relevant to the determination of WTC dust or comments on conditions that would likely impact the scope or feasibility of cleaning.

2.3 Mechanical Make-up Air System

Perform the most vigorous visual inspection possible. Minimum inspection equipment should include screwdrivers, a utility knife (for opening panels, diffusers, grilles, etc. that are painted or caulked in place), cordless drill, hole plugs, telescoping mirror, flashlight, and portable borescope. In addition, the HVAC Evaluator should attempt to penetrate visible dust to determine if a WTC layer is present.

When a ventilation system component is accessed for inspection, indicate whether or not surface dust/debris is present, and whether or not suspect WTC dust is present in the second and third columns, respectively.

Associated Mechanical Room – indicate if there is a mechanical room associated with the mechanical make-up air system, e.g., the make-up air handling unit is located in the mechanical room, the mechanical room is an air mixing chamber for the air handling unit, etc.

Outside air intake, make-up air handling unit – please check for all components that apply. If a listed component is not part of the system, then indicate "not present" (NP) in the right-hand column. If the component is likely to be present, but it cannot be located, indicate "not found" (NF) in the right-hand column. If the listed component is present and is located, but is not accessible for inspection, indicate "inaccessible" (I) in the right-hand column.

Make-up air distribution – Roughly estimate the total linear footage of supply air ducts associated with the mechanical make-up air system, and indicate the number of locations where the interior of the duct was accessed for inspection in the spaces provided. Also circle the type of material from which the duct is constructed (e.g., metal, fibrous glass lined metal, masonry, fibrous glass board, flex duct, wood). If more than one type of duct material is present, circle all that apply.

Accessible in-line fire dampers, accessible turning vanes, in-line reheat/cooling coils, supply air diffusers – roughly estimate the number of each type of component present. If the component is completely inaccessible, the estimated quantity should be listed as "unknown". If the component is not present, the estimated quantity is zero. Indicate the number of locations where the listed component was accessed for inspection in the spaces provided.

Other components–use this space to describe any other component not already included on the form that is part of the mechanical make-up air system.

Other information –

Indicate the level of visible particulate loading on the filter. Light – lightly visible accumulation. Moderate – obvious visible accumulation. Heavy – heavy accumulation that may result in filter panel disfiguration or filter bypass.

Indicate whether damaged interior acoustical duct lining is observed. If possible, note the location where the damage is observed.

Indicate obvious sources of filter bypass, e.g., improper size of filters, tracks, damaged or missing tracks, or other causes of poor fit in tracks.

General impression – this space is for the HVAC Evaluator's general impression of whether or not cleaning is indicated based on the presence of WTC dust. The HVAC Evaluator should note any other comments that are deemed relevant to the determination of WTC dust or comments on conditions that would likely impact the scope or feasibility of cleaning.

2.4 Passive Shaft/Duct

Perform the most vigorous visual inspection possible. Minimum inspection equipment should include screwdrivers, a utility knife (for opening panels, diffusers, grilles, etc. that are painted or caulked in place), telescoping mirror, flashlight, and portable borescope. In addition, the HVAC Evaluator should attempt to penetrate visible dust to determine if a WTC layer is present.

When a ventilation system component is accessed for inspection, indicate whether or not surface dust/debris is present, and whether or not suspect WTC dust is present in the second and third columns, respectively.

Outside air intake, exhaust outlet/louver – please check for all components that apply. If a listed component is not part of the system, then indicate "not present" (NP) in the right-hand column. If the component is likely to be present, but it cannot be located, indicate "not found" (NF) in the right-hand column. If the listed component is present and is located, but is not accessible for inspection, indicate "inaccessible" (I) in the right-hand column.

Supply air distribution/return air distribution – Roughly estimate the total number of supply air outlets or return air inlets in the passive shaft/duct, and indicate the number of locations where the outlets or inlets were accessed for inspection in the spaces provided. Also circle the

type of material from which the passive shaft/duct is constructed (e.g., metal, fibrous glass lined metal, masonry, fibrous glass board, flex duct, wood). If more than one type of material is present, circle all that apply.

Accessible in-line fire dampers – roughly estimate the number of fire dampers located in the supply air outlets or exhaust air inlets of the shaft. If the fire dampers are completely inaccessible, the estimated quantity should be listed as "unknown". If the fire dampers are not present, the estimated quantity is zero. Indicate the number of locations where the fire dampers were accessed for inspection in the space provided.

Other components–use this space to describe any other component not already included on the form that is part of the passive shaft-duct structure.

Other information – use this space to indicate any other information deemed relevant to documenting the condition of the passive shaft/duct.

General impression – this space is for the HVAC Evaluator's general impression of whether or not cleaning is indicated based on the presence of WTC dust. The HVAC Evaluator should note any other comments that are deemed relevant to the determination of WTC dust or comments on conditions that would likely impact the scope or feasibility of cleaning.

2.5 Other Ventilation System

This form is for any ventilation system equipment or configuration that does not appear to conform to any of the types 2.1 through 2.4.

Perform the most vigorous visual inspection possible. Minimum inspection equipment should include screwdrivers, a utility knife (for opening panels, diffusers, grilles, etc. that are painted or caulked in place), cordless drill, hole plugs, telescoping mirror, flashlight, and portable borescope. In addition, the HVAC Evaluator should attempt to penetrate visible dust to determine if a WTC layer is present.

When a ventilation system component is accessed for inspection, indicate whether or not surface dust/debris is present, and whether or not suspect WTC dust is present in the second and third columns, respectively.

Associated Mechanical Room – indicate if there is a mechanical room associated with the other ventilation system, e.g., one or more components located in the mechanical room.

System components – please list all components of the other ventilation system. If the listed component is located, but is not accessible for inspection, indicate "inaccessible" (I) in the right-hand column.

Other information – use this space to indicate any other information deemed relevant to documenting the condition of the other ventilation system.

General impression – this space is for the HVAC Evaluator's general impression of whether or not cleaning is indicated based on the presence of WTC dust. The HVAC Evaluator should note any other comments that are deemed relevant to the determination of WTC dust or comments on conditions that would likely impact the scope or feasibility of cleaning.