



HVAC Hygiene Assessment

QUOTE #:

BHC-13545-R

DATE:

May 25, 2021

Prepared For:

Thomasville City Schools
400 Turner Street
Thomasville, NC 27360
Eric Johannesen
johannesene@tcs.k12.nc.us
(336) 474-4224

Facility:

Multiple Locations (6)
Central office / Primary school/ Elementary School /
Middle School / High School and an auditorium
Thomasville, NC 27360

Services Quoted:

Building Health Check & HVAC Hygiene
Assessment

Prepared By:

Addison Deckard
Pure Air Control Services, Inc.

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I. Background Summary:

Thomasville City Schools consists of 6 locations (Central office / Primary school, Elementary School, Middle School, High School and an auditorium) works together with families and community to provide personalized learning opportunities for all students in a safe, caring, and innovative environment. TCS has requested from Pure Air Control Services a budget to perform a HVAC Hygiene Assessment and Building Health Check across the school district to determine the baseline IAQ conditions within the facilities to help develop a plan of attack on what remedial measures and next steps should be taken to improve overall building health and improve IAQ.

The HVAC environmental hygiene assessment portion of this phase will consist of Pure Air Controls' Building Science team performing visual assessments within the listed air handling units (air handling units defined to include the units within the buildings delineated up to (95 units) grading each compartment separately (Return plenum, filter rack, coil pre & post, drain pan, blower housing, supply plenum) and then grading the OVERALL unit from 0 to 100 (0 being best | 100 being worst). Client receives professional report detailing every unit on a 0-100 ranking scale and what remedial actions may be recommended, if any. In addition, two (2) surface tape preparation samples are retrieved to outline environmental particulate constituents present like fiberglass, skin cell fragments, mold, overall counts of particulate, etc. The samples tend to be taking on one of the following: blower housing, coil, and interior cabinet for representative means. In this Tier, the only ductwork inspection is from within the unit in the return and supply plenum (if accessible). In addition, representative ductwork inspection of return and supply duct in these facilities will be evaluated hygienically. The ductwork hygiene inspections also includes one (1) surface tape preparation sample is retrieved that outlines environmental particulate conditions within the ductwork, i.e. the presence of environmental constituents like fiberglass, skin cell fragments, mold, overall counts of particulate, etc.

The Building Health Check portion of this phase is an indoor air quality evaluation of the selected buildings. It combines Field and Laboratory assays to report on the biological conditions and performance (if applicable) of a given building. The Building Sciences Team and Environmental Diagnostics Laboratory conduct specific tests and analysis during their investigation including photo documentation and air and surface sampling.



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II. HVAC Hygiene & Condition Assessment Description:

Air Handlers & Fan Coil Unit: The physical health, condition of an air handler is assessed from the return plenum to the supply plenum. Each and every compartment and its associated equipment is meticulously inspected and digitally catalogued in a per unit album. Also included is our standard grading report. This report eases the challenge of determining the urgency of prescribed remedial and/or replacement action per unit. And, in turn, allows Pure Air Control Services to suggest a time frame for action.

Air Conveyance System (ACS): The physical health of specific sections of representative ACS (ductwork) is analyzed from within the air handler/mechanical room, and representative sections of return and supply ductwork will be analyzed outside of the mechanical room or rooftop. Like the report on the AHU assessment, it eases the challenge of determining the urgency of necessary remedial action per system. Ductwork hygiene assessments will include various sections of representative return duct and supply duct.

III. Deliverable:

Once all data is compiled and analyzed, a detailed report is provided. The report details the findings of the physical examination complimented with environmental samples/photos. For air handling units, a graded ledger based on actions necessary, if any, to improve the hygienic / inefficiencies of the units is included. For the Building Health Check IAQ evaluation, Building Sciences and Environmental Diagnostics Laboratory report on the results of field and laboratory assays. All to be compiled into one report that outlines the baseline IAQ and HVAC environmental conditions of Thomasville City Schools selected facilities with recommendations.



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Building Health Check | TIERED APPROACH

Tier I – representative sampling every 10,000 SF

Quantity	Description
Building Health Check (BHC) Includes:	
46	Air – Spore Trap (Air-O-Cell Cassette) – Full Profile Analysis.
88	Scotch Tape Prep (STP)/Bio-Scan™ Surface Microscopy (Slides) – Full Profile.
48	Air – Bio-Aerosol – Malt Extract Agar Culture Plate – Mold (culturable) – Total Counts Only.
48	Air – Bio-Aerosol – Tryptic Soy Agar Culture Plate – Bacteria (culturable) – Total Counts Only.
46	Air – Laser Diode Particle Scan – 0.3-5.0 micron (µ). Real-time sampling for immediate results.
46	Air – Relative Humidity (RH), Temperature, and Carbon Dioxide Readings. Real-time sampling for immediate results.
22	Infrared Imaging - Thermography
22	Legionella Pneumophila Detection and Identification (10-14 days TAT) Potable Water
Incl.	Prepare report outlining environmental condition of the facility, create a proposed plan for remediating unhygienic deficiencies, if any
107	Field Building Scientist / I.H. Labor & Report Writing
Building Health Check (TIER I): \$31,226.05	

HVAC Hygienic Assessment – 98 representative units

Quantity	Description
HVAC Hygiene Assessment (HHA) Includes:	
<u>Air Handlers / Roof Top Unit Inspection</u>	
98	<ul style="list-style-type: none"> Inspect and assess hygienic conditions within ninety-eight (98) AHU's/RTU's
Incl.	<ul style="list-style-type: none"> Inspect and access hygienic conditions of ductwork (return and supply plenums)
Incl.	<ul style="list-style-type: none"> Include report outlining hygienic conditions
196	<ul style="list-style-type: none"> Surface Tape Prep (STP) – <u>2 STP per AHU/RTU</u> – Full Profile Analysis (Samples to be taken in representative areas within each system e.g. coil, interior cabinet and blower housing compartment)
<u>Ductwork Inspection (representative areas)</u>	
98	<ul style="list-style-type: none"> Cut access to ninety-eight (98) representative areas to inspect hygienic conditions within the ductwork
Incl.	<ul style="list-style-type: none"> Include report outlining hygienic conditions of each representative area accessed with recommendations (1 representative inspection ports per unit in the supply ductwork – depended upon access of system)
98	<ul style="list-style-type: none"> Surface Tape Prep (STP) - 1 per access port – Full Profile Analysis
Incl.	<ul style="list-style-type: none"> Prepare report outlining hygiene of each component part of the representative air handler and representative sections of ductwork; create a proposed plan for remediating unhygienic deficiencies, if any. If any, provide specific recommendations for resolving unhygienic conditions.
272	<ul style="list-style-type: none"> Field I.H. Labor & Report Writing
HVAC Hygienic Assessment: \$47,058.38	



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Performance Assessment Portion – 23 units (over 10 tons)

Quantity	Description
	HVAC Performance Assessment (HPA) Includes:
	Full Performance Testing Evaluation (Per Unit)
Incl.	• Measurement of supply airflow by duct traverse
Incl.	• Measurement of O/A volume by duct traverse
Incl.	• Static Pressure profile of AHU, from Return to Supply Plenum
Incl.	• Document the pulley and sheave sizes, center to center distance & RPM of fan
Incl.	• Record all motor manufacturer tag data & Actual volts / amps
Incl.	• Measurement of Mixed and Supply air temperature WB/DB
Incl.	• Calculate total MBH
Incl.	• Measurement of entering and leaving chilled water temperature
Incl.	• Calculation of actual GPM
178	• Field I.H. Labor & Report Writing
HVAC Performance Assessment Total: \$24,063.75	
HVAC Hygienic / Performance Assessment Total: \$71,122.13	



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Summary Tier Pricing:

Tier I:	\$102,348.18 (Including Building Health Check & HVAC Hygienic / Performance Assessment)
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This is an estimated budget based on the mechanical inventory provided and estimated number of access points to view the air conveyance system. Actual price may vary +/- depending if scope of assessment is reduced or expanded.

NOTE:

- If genus and speciation analysis is needed for Tiers I, II, or III, a change order per sample analyzed will be required.
- This proposal is based upon the normal billing rate (Mon – Fri). Should the client need weekend/Holiday work, overtime charges will apply.
- Site unseen. If any unaccounted-for items populate within healthcare system, a change order may be required due to unforeseen conditions.
- If genus and speciation analysis is requested for the laboratory analysis, a change order based on E&I rates per sample analyzed will be required.
- Duct inspections budget are estimated for 8-12' drop ceilings. If some locations are higher than 12', the inspection shall not be conducted or TCS shall provide scissor lift.

Addison Beckard

Addison Deckard

Customer Signature:

5/25/2021

Date:

Date:

Method of Payment:

TERMS:

Card Type:

Card #:

Exp. Date:

V-Code:

Cash / Check #:

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