November 6, 2015

Clemson University
310 Klugh Avenue
Clemson, South Carolina 29634

Attn: Mr. W. Robert Newberry, IV
E: wnewber@clemson.edu

Re: Limited Hazard Assessment Report (revised November 30, 2015)
Clemson University
Biosystems Research Complex Facility
Clemson, South Carolina
Terracon Project No. 86127158

Dear Mr. Newberry:

Terracon Consultants, Inc. (Terracon) is pleased to present the hazard assessment at the above referenced facility at Clemson University in Clemson, South Carolina. It is our understanding that a contractor will be entering Exhaust 1 & 2 of the Biosystems Research Complex (BRC) facility to install new controls. The assessment was performed in general accordance with our IDC with Clemson University.

PROJECT DESCRIPTION

Terracon was requested to conduct a hazard assessment of the Exhaust 1 & 2 on the roof of the BRC Facility. It is our understanding that contractors will be installing controls in the system during Clemson University's winter break. The building is generally used for agricultural research. Terracon obtained information from other Clemson staff to formulate a hazard assessment for entering Exhaust 1 & 2.

This investigation was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon did not attempt to identify every potential exposure or hazard present in the subject building. The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during our investigation. The information contained in this report should not be relied upon to represent conditions that existed prior to or after this investigation. Terracon does not warrant the services of regulatory agencies, laboratories, or other third parties supplying information that may have been used in the preparation of this report.

INVESTIGATION INFORMATION

Terracon was escorted by Scott Feagan of Clemson University to understand the scope of the project. Based on information obtained from Scott Feagan, heating, ventilation and air conditioning (HVAC) controls will be installed in Exhaust 1 & 2 during Clemson University's winter break. It is our understanding this unit functions as an exhaust while simultaneously assisting in adjusting temperature for an adjacent return air intake. None of the fume hoods exhaust air intermixes with this system.

Terracon additionally obtained and reviewed information containing biological agents and chemical use in the building. Information obtained from Robert R. Clark of Clemson University stated there are no biological agents (bacteria, viruses, etc.) of concern in the ventilation system. Information concerning chemical use in the building was provided in a spreadsheet from Laura Armstrong of Clemson University. Terracon reviewed the chemical inventory supplied by Ms. Armstrong. The chemical inventory spreadsheet has several categories including; highly toxic, carcinogenic, teratogenic, explosive, biosafety level 2-4, and other hazards (i.e. irritant) to classify chemicals stored in the building. Additionally the quantities of the chemicals are listed.

It is Terracon's understanding that chemicals are not used on a daily basis and chemicals which are listed as highly toxic or carcinogenic generally have low quantities present and are required to be used in fume hoods.

CONCLUSIONS/RECOMMENDATIONS

The following conclusions and recommendations are provides based on our assessment:

- Based on the information provided, it does not appear hazardous chemicals or biological agents directly intermix with the air exhaust. The exhaust is used for general conditioning of the building. Furthermore, most of these chemicals are not used on a daily basis or are used in fume hoods which directly exhaust air to the exterior not into the general air system.
- Installation of HVAC controls is scheduled for winter break. During this period use of chemicals should be at a minimum within the building. Prior to the contractor mobilizing Clemson's building representative should verify no additional experiments or use of hazardous chemicals will be occurring in the contractors work area.
- Clemson University currently has this space on a routine maintenance schedule. As a best practice, Clemson University should schedule a cleaning of the system (i.e. coils, changing filters) in the area where the contractors are installing controls. This affords two benefits; one, the area is cleaned, and two, the system is maintained before controls are installed so a baseline can be established.

This assessment does not include hazards associated with the contractors work methods. The contractor shall perform their own assessment based on their work methods and chemical use. The contractors should be responsible for complying with applicable parts of the Occupational Safety and Health Administration (OSHA) regulations such as, but not limited to, control of hazardous energy and confined spaces.

Terracon appreciates the opportunity to provide this service to Clemson University. If you have any questions regarding this report, please contact the undersigned at 864-292-2901.

Sincerely,
Terracon Consultants, Inc.



Jeffrey A. Gurrie
Sr. Project Industrial Hygienist



for
Scott Rohlf, CIH
Senior Industrial Hygienist