ambient group inc.

Indoor environmental quality surveys
Water treatment consulting
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October 26, 2001

Mr. Elliott Zuckerman
Cushman & Wakefield
a/a/f Mercantile Exchange
One North End Avenue
New York, New York 10282

Re: Dioxin levels around World Trade Center Site

Dear Mr. Zuckerman:

Here is some important information regarding the dioxin sampling in and around "Ground Zero".

In early October, the Environmental Protection Agency (EPA) posted the following excerpt on their web page concerning dioxin.

"Although EPA has measured dioxin levels in and around the World Trade Center site that were at or above EPA's level for taking action, the risk from dioxin is based on long-term exposure. EPA and OSHA expect levels to diminish as soon as the remaining fires on the site are extinguished."

Based on these statements, we found it prudent to test for these compounds at your facility. We urged you to consider allowing us to pursue and obtain the elaborate equipment required to sample for these compounds in the air. At your direction, we located and set up this equipment as quickly as possible.

We have gone to great lengths to acquire the high volume sampling equipment required for the EPA Compendium Method TO-9A (Dioxin). We know of only three other samplers used in commercial buildings. This is the equipment that the government uses to test for dioxins. The first sample set is in the lab being processed and your results should be available next week.

Attached please find an excerpt from the EPA's "Questions And Answers About Dioxins" for your review and a summary of the TO-9A method for your review.

Should you have any questions please call me at the above number.

Sincerely,
Signed for Ambient Group, Inc. by:

William Esposito, CIH
President

The following excerpts can be found at http://cfpub1.epa.gov/ncea/cfm/dioxin.cfm?ActType=default.

Dioxin Frequently Asked Questions

G1. What are dioxins?

"Dioxins" refers to a group of chemical compounds that share certain similar chemical structures and biological characteristics. Several hundred of these toxic compounds exist andare members of three closely related families: the chlorinated dibenzo-p-dioxins (CDDs),chlorinated dibenzofurans (CDFs) and certain polychlorinated biphenyls (PCBs). Sometimes the term dioxin is also used to refer to the most well-studied and one of the most toxicdioxins, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). CDDs and CDFs are not createdintentionally, but are produced inadvertently by a number of human activities. CDDs andCDFs are also produced by natural processes. PCBs are man-made, but are no longer produced in the U.S.

Dioxins are released into the air from combustion processes such as commercial or municipal waste incineration and from burning fuels (like wood, coal or oil). Dioxins can also be formed when household trash is burned and during forest fires. Chlorine bleaching of pulp and paper, certain types of chemical manufacturing and processing, and other industrial processes all can create small quantities of dioxins. Cigarette smoke also contains smallamounts of dioxins.

Why are people concerned about dioxins?

Scientists and health experts are concerned about dioxins because studies have shown that exposure to them may cause a number of adverse health effects. Because dioxins exist throughout the environment, almost every living creature including humans has been exposed to dioxins. The health effects associated with dioxins depend on a variety of factors including: the level of exposure, when someone was exposed, and how long and how often. Because dioxins are so widespread, we all have some level of dioxins in our bodies.

The most noted health effect in people exposed to large amounts of dioxin is chloracne. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face andupper body. Other effects of exposure to large amounts of dioxin include skin rashes, skin discoloration, excessive body hair, and possibly mild liver damage.

One of the main health effects of concern for dioxins is cancer in adults. Several studies suggest that workers who were exposed to high levels of dioxins at their workplace over many years have an increased risk of cancer. Animal studies have also shown an increased risk of cancer from long term exposure to dioxins.

Finally, although not seen in human studies, based on data from animal studies there is also some concern that exposure to low levels of dioxins over long periods (or high level exposures at sensitive times) might result in reproductive or developmental effects. These could include weakened immune responses and behavior changes in offspring.

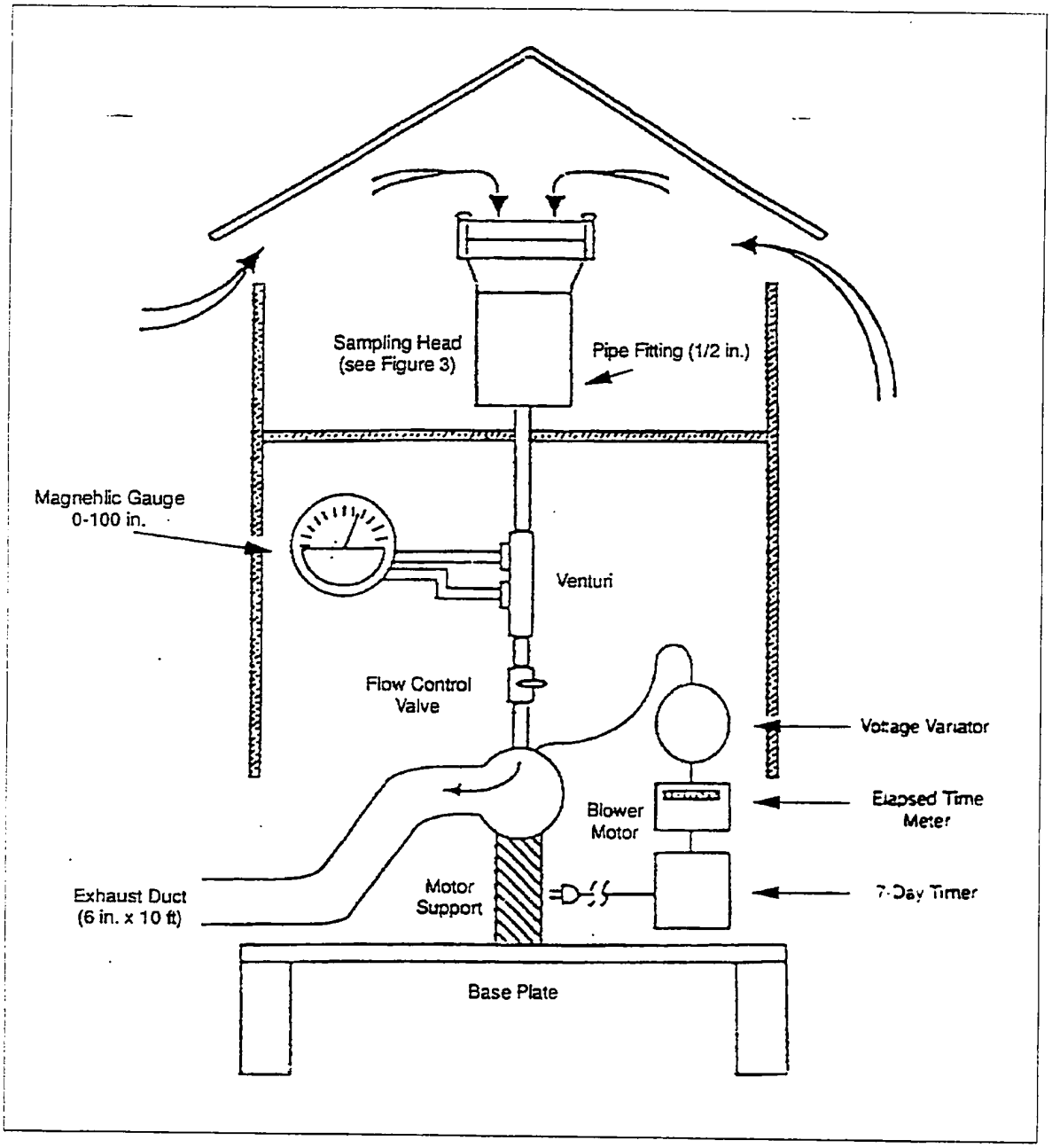

Figure 2. Typical dioxins/furan high volume air sampler.

Summary of Method

2.1 Quartz-fiber filters and glass adsorbent cartridges are pre-cleaned with appropriate solvents and dried in a clean atmosphere.

2.2 For sampling, the quartz-fiber filter and glass cartridge containing the PUF are installed in the high-volume air sampler.

2.3 The high-volume sampler is then immediately put into operation, usually for 24 hours, to sample 325 to 400 m ambient air. 3

2.4 The amount of ambient air sampled is recorded at the end of the sampling session. Sample recovery involves placing the filter on top of the PUF. The glass cartridge is then wrapped with the original aluminum foil, capped with Teflon® end caps, placed back into the original shipping container, identified, and shipped to the analytical laboratory for sample processing.

2.5 Sample preparation typically is performed on a "set" of 12 samples, which consists of 9 test samples, a field blank, a method blank, and a matrix spike.

2.7 The set of sample extracts is subjected to HRGC-HRMS selected ion monitoring (SIM) analysis using a 60-m DB-5 or 60-m SP-2331 fused silica capillary column to determine the sampler efficiency, extraction efficiency,and the concentrations or the MDLs achieved for the PHDDs/PHDFs (28). Defined identification criteria and QA/QC criteria and requirements are used in evaluating the analytical data. The analytical results along with the volume of air sampled are used to calculate the concentrations of the respective tetra- through octa-isomers, the concentrations of the 2,3,7,8-chlorine or -bromine substituted isomers, or the MDLs.

8. Apparatus

8.1 High-Volume Sampler (see Figure 2). Capable of pulling ambient air through the filter/adsorbent cartridge at a flow rate of approximately 8 standard cubic feet per minute (scfm) (0.225 std m \min) to obtain a total sample volume of greater than 325 scm over a 24-hour period.

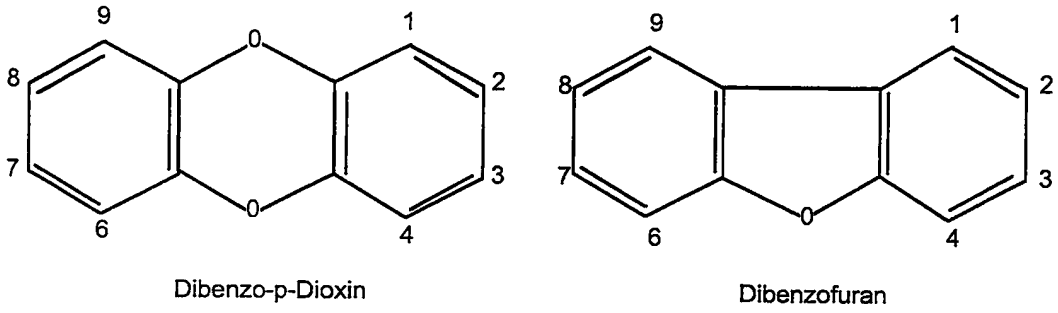

Figure 1. Dibenzo-p-dioxin and dibenzofuran structures.

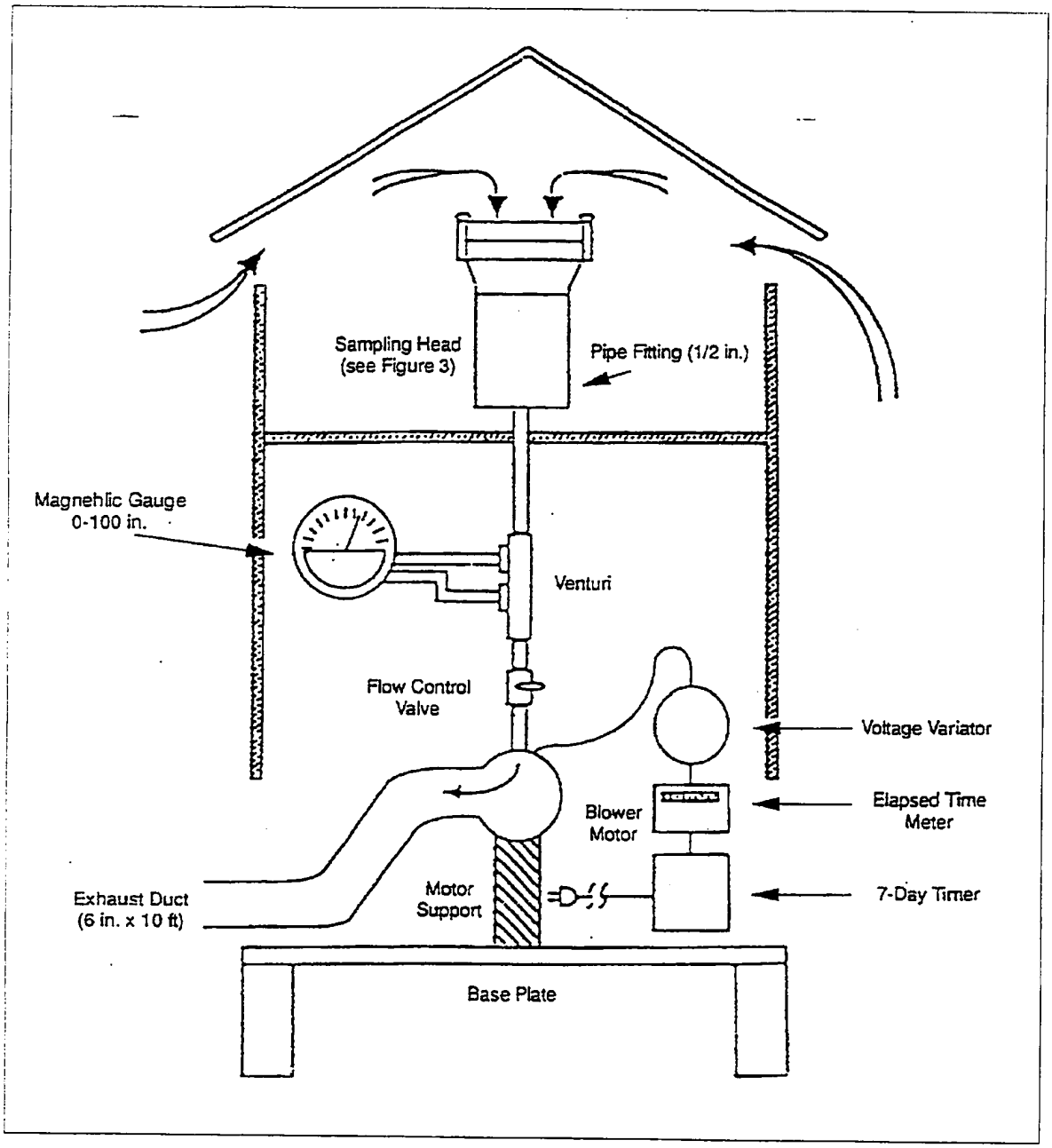

Figure 2. Typical dioxins/furan high volume air sampler.