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ENVIRONMENTAL ASBESTOS AIR SAMPLING REPORT FOR THE PLYMOUTH GROUP

SUNNYSIDE NURSERIES PROJECT HAYWARD, CALIFORNIA

Project No: 1162259

Survey Date: March 26 & April 8, 1992

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Project No: 1327232
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INTRODUCTION

This report presents findings and conclusions resulting from ambient air sampling for asbestos collected at the fence line of the above-referenced project during the demolition of greenhouses. The air sampling was conducted by Roni Swan of J.M. Cohen, Inc. on March 26 and April 8, 1992. The purpose of the survey was to determine the ambient airborne asbestos concentrations at the fence line during the demolition of several green houses that contain window glazing compound that is composed of 3% to 5% asbestos.

LIMITATIONS OF THE INVESTIGATION

J.M. Cohen, Inc. has prepared this report for the exclusive use of The Plymouth Group for this project. The work was performed within the limitations set forth in the Agreement as to the degree of care, amount of time and expense, and any other limitations contained in the Agreement. No other representation, warranty or guarantee, expressed or implied is included or intended in this report.

The findings of this air sampling survey represent conditions existing during the sampled periods. The findings are also limited by the relatively few samples collected. The conditions and work practices observed during the time of the air monitoring are believed to be representative of conditions during the unsampled time. Significant variations in activities, operations and conditions could result in different findings.

DESCRIPTION OF OPERATIONS

This property is located in a residential area of Hayward at the approximate corner of Mohr and Laguna Streets. The property was known as Sunnyside Nurseries and contains several greenhouses. The greenhouses constitute approximately 500,000 square feet of roof space. The structural integrity of the greenhouses vary, from good to poor, where posing a safety hazard to an occupant. Many of the windows have been broken or are missing and therefore, some of the structures can be referred to as "shells."

It had been determined, by laboratory analysis, that the window glazing compound used in the greenhouses contains 3-5% chrysotile asbestos. Glazing compound can be found on the structural wood members, on the glass panes or pieces of glass on the ground, and on the ground. The structures are being demolished, without removing the asbestos. Once the site is cleared, the land will be used for housing. Special work practices (e.g. keeping the material wet during demolition) are being utilized to minimize the release of airborne asbestos fibers.

SAMPLING AND ANALYTICAL

Portable vacuum pumps were placed at the fence line, surrounding the site to collect ambient asbestos levels during demolition. The location of the samples can be found on the attached drawing. The pumps were used to draw air through 25 millimeter (diameter) cowled filter cassettes, each containing a 0.8 micron (pore size) mixed cellulose ester filter. The filter cassettes were placed at breathing zone level (approximately 56 inches from the ground). Pumps were calibrated (with a filter cassette in line) both prior to and following monitoring to insure constant airflow. At the conclusion of monitoring, each sample cassette was sealed and labeled with a unique identifier. The pumps were set to a nominal flowrate of 3.5 liters per minute and allowed to run for approximately six hours.

During sampling winds were light, and the sky was clear. The attached drawing indicate the predominant direction of the wind.

Samples were sent to a laboratory that participates in the Proficiency Analytical Testing (PAT) program and other quality control programs, and were analyzed by Phase Contrast Microscopy (PCM). PCM is a nonspecific method for asbestos and is performed according to National Institute for Occupational Safety and Health (NIOSH) method 7400A. All fibers in the microscope's counting field, that meet certain size criteria (length equal to or greater than 5 microns and length to width ratio equal to or greater than 3 to 1), whether they are asbestos or not, are counted. Therefore, with the PCM method, cellulose, polyester, and other particulate matter which have the correct size and shape will be included in the analytical findings along with any detectable asbestos fibers.

STANDARDS

The current Cal/OSHA Permissible Exposure Limit for asbestos is 0.2 fibers per cubic centimeter of sampled air (0.2 f/cc), averaged over an 8-hour workday. The U.S. Environmental Protection Agency (EPA) in the Asbestos Hazard Emergency Response Act (AHERA) set an airborne asbestos limit of 0.01 f/cc for schools following asbestos

abatement work. These standards are based on sample analysis by PCM (Please note that AHERA has also established standard for re-occupancy based on Transmission Electron Microsccpy).

At this time there are no non-occupational health standards for airborne asbestos exposure to the general public. However, exposure to asbestos is further regulated under Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986 (codified in the Health and Safety Code as Section 25249.2 et seq), which establishes a No Significant Risk Level (NSRL) of 100 fibers per day by inhalation. In terms of an air concentration, we have calculated this to be equivalent to 0.00005 f/cc, based on a breathing rate of 20 cubic meters of air over a 24-hour period. However, it is not possible using currently available methods to detect fiber levels this low.

FINDINGS

Four samples were collected on March 26, 1992 and another four samples were collected on April 8, 1992. The analysis of air samples for asbestos collected on the two days indicated airborne asbestos at the fence line at, or slightly above the limit of detection for the analytical method. This is well within established limits as noted above in the Standards section. The analytical sensitivity for each sample was about 0.002 f/cc.

Analytical results of air monitoring are presented in the Summary Table at the end of the report.

DISCUSSION

Air sampling is the method specified by Cal/OSHA for determination of worker exposures to airborne asbestos, and by EPA/AHERA for determination of airborne levels of asbestos following asbestos abatement in schools. Air sampling is also the industry standard for evaluating airborne exposures and area levels of contaminants. Air sampling at breathing zone level during building demolition activities provides an estimate of potential airborne asbestos exposures.

Although not required by government agencies, air samples were collected at the fence line during two days of demolition. Results of testing showed that airborne fiber levels, as determined by PCM, were found to be well within current established limits. The highest level measured was 0.004 f/cc, well below the Cal/OSHA Permissible Exposure Limit of 0.2 f/cc, and the EPA AHERA clearance level of 0.01 f/cc. This was found on the south side of the property during the March 26, 1992 monitoring. Other samples collected that day were below the detection limit for the analytical method (0.002 f/cc).

CONCLUSIONS

Based on the air sampling results from two days of sampling, and from observations made during sampling, it is our conclusion that:

1. Airborne levels of asbestos at the perimeter of the property were well within accepted governmental limits.

2. Work practices used by the demolition crew helped to keep down the release of asbestos fibers.

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Table 1

RESULTS OF AMBIENT AIR MONITORING[1]
SUNNYSIDE NURSERIES, HAYWARD, CALIFORNIA
Samples collected on March 26 and April 8, 1992

SAMPLE NO.	DESCRIPTION	TIME (min)	VOLUME (liters)	CONCENTRATION[2] (fibers/cc)
0326-1	2nd Entrance, Mohr	380	1368	0.003
0326-2	Corner of Occidental & Mohr	390	1215	0.003
0326-3	Back Perimeter, North	300	1236	<0.002
0326-4	Back Perimeter, South	388	1222	0.004
0408-1	SE Perimeter, Occidental	335	1189	0.002
0408-2	SW Perimeter, Occidental	338	1200	<0.002
0408-3	SW Perimeter, Mohr	353	1218	<0.002
0408-4	East Perimeter	330	1188	<0.002
0326-5	Control Blank	--	---	1f/100 flds
0408-5	Control Blank	--	---	0f/100 flds

Footnotes

1 Air monitoring conducted by J.M. Cohen, Inc.

2 Fibers per cubic centimeter of sampled air, analyzed by PCM. The symbol "<" means "less than", and the value given indicates the limit of detection based on sample volume and analytical sensitivity.

3 See attached drawing for approximate sample locations.

Approximate Sample Locations