

## *NorBay Consulting*

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August 18, 2017

Mr. Todd Lee  
Greystone West Company  
621 W. Spain Street  
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**SUBJECT: PRE-RENOVATION ASBESTOS & LEAD INSPECTION  
PERFORMING ARTS CENTER  
SAN MARIN HIGH SCHOOL  
NOVATO, CALIFORNIA**

Dear Mr. Lee:

NorBay Consulting is pleased to provide the analytical results from the asbestos and lead pre-renovation inspection conducted of the Performing Arts Building located on the campus of San Marin High School in Novato, California.

Our inspection included the visual observation of suspect asbestos containing building materials, the collection of suspect building materials to determine asbestos content, if any, laboratory analysis, the collection of lead in paint readings utilizing a RMD direct reading instrument and generation of a final report.

NorBay Consulting appreciates the opportunity to provide you with these services. If you have any questions regarding this report or if you require additional information please do not hesitate to contact me at (415) 507-9786.

Respectfully,  
NORBAY CONSULTING

*Bob Gerhold*

Bob Gerhold  
Certified Asbestos Consultant # 92-0157  
CDPH Lead Inspector/Assessor I2108

## EXECUTIVE SUMMARY

NorBay Consulting performed a pre-renovation asbestos and lead inspection of the Performing Arts Center located on the campus of San Marin High School in Novato, California. Since the building is scheduled to undergo a significant renovation this inspection was required as per Bay Area Air Quality Management District (BAAQMD) and Cal-OSHA regulations. Mr. Bob Gerhold, Cal-OSHA Certified Asbestos Consultant #92-0157 and California Department of Public Health Lead Inspector/Assessor # 2108 and Mr. Greg Marszal, Cal-OSHA Site Surveillance Technician #96-1975 performed the inspection on August 8, 2017.

**This Executive Summary is provided solely for the purpose of overview. Any party who relies on this report must read the entire report. The Executive Summary may have omitted important details, any of which could be crucial to the proper understanding and risk assessment of the subject matter.**

A total of twenty-six (26) samples of suspect asbestos containing materials were collected during the inspection. Upon analysis by Polarized Light Microscopy (PLM) the following material(s) were found to contain varying percentages of asbestiform minerals or are materials known to contain asbestos.

- ◆ Cementitious panels under windows;
- ◆ 12" vinyl floor tile and associated black mastic in the kitchen;
- ◆ Textured drywall/taping mud in the kitchen and Student Activities Room.

A total of one hundred and one (101) readings were collected of exterior and interior painted/coated surfaces during the inspection. In addition, six (6) calibration readings were also collected. For this report lead based paint includes readings  $\geq 1.0$  mg/cm<sup>2</sup>, lead-containing paint includes readings  $\geq 0.1$  to  $\leq 1.0$  mg/cm<sup>2</sup> and no lead detected includes readings of 0.0 mg/cm<sup>2</sup>. It is extremely important to understand that XRF readings, which have a value of 0.0 mg/cm<sup>2</sup>, do not necessarily mean there is "no lead present" but rather the level is below what the instrument can read.

Lead based paint/glazing/primer is located on the following components/fixtures:

- ◆ White porcelain sink in the kitchen.

In addition, certain interior components were found to contain detectable levels of paint thus disturbance of these components would be subject to Cal-OSHA Lead in Construction Standards.,

A more detailed presentation of procedures and findings is presented in the body of this report. Also included is a discussion of recommendations and regulatory considerations.

## ASBESTOS SURVEY PROCEDURES

NorBay Consulting identified homogeneous areas of materials, which were suspected of containing asbestos. A homogeneous area, for bulk sampling purposes, is one that seems by texture, color and wear to be uniform and applied during the same general time period. After the homogeneous areas had been identified, representative bulk sample(s) are collected for laboratory analysis. Because asbestos-containing building materials have compositional variability, it is

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

possible to obtain different laboratory results for samples from the same homogeneous area. Therefore, a homogeneous area with at least one positive sample for will result in the entire homogeneous area being designated as an asbestos containing material.

The sampling strategy employed by NorBay Consulting was partially based on guidelines established by the Environmental Protection Agency (EPA) for school buildings (40 CFR Part 763, AHERA) which require that samples be collected from each homogeneous area of suspected ACM. Upon completion of the inspection and bulk sampling, the samples were delivered under chain of custody protocol to Forensic Analytical Laboratories of Emeryville, California for analysis by Polarized Light Microscopy (PLM).

## SAMPLE ANALYSIS

Bulk samples were examined by Polarized Light Microscopy (PLM) in accordance with EPA Test Method 600/R-93/116, "Method for the Determination of Asbestos in Bulk Building Materials". The percentage of asbestos is determined by visual estimation. Laboratory results are reported based on the percentage of asbestiform minerals identified within each sample layer. The lower limit of reliable detection by PLM is 1% by volume. When asbestos or other minerals are observed in concentrations believed to be less than the reliable detection limit (less than 1%) the results are usually indicated as TRACE.

Upon analysis the analytical results are compared to government agency standards. Currently, both the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA) define material with contains more than one percent asbestos to be an asbestos containing material (ACM). In addition, Cal-OSHA defines any manufactured construction material containing more than 0.1% by weight as asbestos containing construction materials (ACCM).

Cal-OSHA also requires notification and registration of the contractor when disturbing materials with more than one-tenth of one percent and regulates worker protection whenever materials containing any detectable levels of asbestos are to be disturbed.

## RESULTS

Sample ID	Material	Location	Results
Roof-1 & 2	Composition shingle roofing system	Roof	No Asbestos Detected
CP-1 & 2	Cementitious panels	Interior and Exterior under windows	10% asbestos
FDI-1	Fire door insulation	Kitchen	No Asbestos Detected
ST-1	Seam tape on HVAC equipment	Attic space above kitchen	No Asbestos Detected
BBM-1 & 2	Brown baseboard mastic	Kitchen and Main Room	No Asbestos Detected
VFT-1-1 & 1-2	12" vinyl floor tile (green) and black mastic	Kitchen	< 1% asbestos in tile 2% asbestos in mastic
VFT-2-1	12" vinyl floor tile (white) and black mastic	Kitchen (patch)	No Asbestos Detected

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

Sample ID	Material	Location	Results
VFT-3-1 & 3-2	12" vinyl floor tile (beige/sand) & white mastic	Main Room	No Asbestos Detected
ACT-1-1 & 1-2	1' x 1' acoustical ceiling tile and brown mastic	Kitchen and Main Room (lower ceiling)	No Asbestos Detected
ACT-2-1 & 2-2	1' x 1' acoustical ceiling tile and tan mastic	Main Room (upper ceiling)	No Asbestos Detected
DWTM-1 & 2	Drywall/taping mud	Restroom vestibule and stage door room	No Asbestos Detected
DWTM-3 & 4	Drywall/taping mud	Storage Room and Main Room	No Asbestos Detected
DWTM-5	Drywall/taping mud	Main Room (ceiling)	No Asbestos Detected
TDWTM-1	Textured drywall/taping mud	Kitchen	< 1% asbestos per PLM
TEXT-1-3	Wall texture	Kitchen and Student Activities Room	< 1% asbestos per PLM

## REGULATORY CONSIDERATIONS

Current EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations require that most ACM be removed prior to demolition or renovation activities. Other regulations apply to construction activities and notification requirements for projects involving ACM/ACCM. At both the federal and state levels, these include, but are not limited to Federal OSHA regulation 29 CFR 1910 and 1926, the California Health Code, California OSHA 8 CCR 1529 and Proposition 65 which requires the posting of notifications when a facility is known to contain toxic substances found on the governors list.

As previously mentioned in this report both the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA) define material with contains more than one percent asbestos to be an asbestos containing material (ACM). In addition, Cal-OSHA defines any manufactured construction material containing more than 0.1% by weight as asbestos containing construction materials (ACCM). Cal-OSHA also requires notification and registration of the contractor when disturbing materials with more than one-tenth of one percent and regulates worker protection whenever materials containing any detectable levels of asbestos are to be disturbed.

## RECOMMENDATIONS

Bay Area Air Quality Management District (BAAQMD) Regulation 11-2-401.3 requires that for every demolition or renovation involving the removal of 100 square/linear feet or greater of Regulated Asbestos Containing material (RACM), a notification must be made to the BAAQMD at least ten working days prior to commencement of demolition/renovation activities. In addition, BAAQMD requires removal, prior to renovation and/or demolition of regulated asbestos-containing materials (RACM), i.e; materials with asbestos content of greater than 1% that are friable (can be crumbled, pulverized or reduced to powder by hand pressure) or may become friable during renovation or demolition. Non-friable asbestos containing materials containing greater than 1% asbestos are also considered to be RACM if they are subjected to sanding, drilling, grinding, cutting, abrading or may become friable during demolition/renovation activities.

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

Analytical results indicated that asbestos was detected in various percentages in the cementitious panels under the windows, the 12" green vinyl floor tile and mastic in the kitchen and in the textured drywall/taping mud in the kitchen and student activities room.

NorBay Consulting recommends that these materials be remediated by a licensed asbestos remediation contractor prior to any renovation activity taking place that would disturb them. The contractor chosen must be familiar with and abide by the strict rules and regulations regarding the removal of asbestos containing materials and/or materials containing detectable levels of asbestos.

## **LEAD IN PAINT XRF SURVEY PROCEDURES**

The sampling strategy employed by NorBay Consulting was performed as outlined in Title 17, California Code of Regulations, Division 1, Chapter 8 and in accordance with those survey procedures listed in the "Guidelines for the Evaluation and Control of Lead Based Paint Hazards in Housing", June 1995 by the U.S. Department of Housing and Urban Development (HUD). Our investigation included the collection of readings on similar painted surfaces (not every component in every room as dictated by HUD guidelines.)

Prior to data collection painted/coated surfaces were categorized into distinct areas of homogeneity, substrate material, building material and/or distinct paint type. After the items have been identified, a representative reading of the painted/coated surface is collected. Because painted/coated have compositional variability due to one or more paint layers, it is possible to obtain different readings for samples from the same homogeneous area. Therefore, a homogeneous area with at least one XRF reading of 1.0 mg/cm<sup>2</sup> or greater will result in the entire homogenous material, substrate and/or distinct paint type being designated as lead based paint. Each XRF reading along with the location, component, substrate, color and condition of the painted/coated surface are included in the XRF readings table located at the end of this report.

## **SAMPLE ANALYSIS**

The XRF testing was performed in accordance with the aforementioned criteria, using an RMD-LPA-1 XRF Analyzer. Exposure times are internally determined by the instrument and are based on a number of factors including lead content, substrate and source strength. The instrument is calibrated to the manufacturer's specifications and was periodically verified against known lead standards produced by the National Institute of Standards and Testing.

HUD defines action level as the hazard level for which a corrective response action will be required. Currently, the most widely used action level for lead-based paint (LBP) is 1.0 mg/cm<sup>2</sup> (as measured by an XRF) established by HUD and adopted by the U.S. Environmental Protection Agency. The action level is 5000 parts per million (ppm) or 0.5% by weight when collected paint chip samples are analyzed using atomic absorption spectroscopy (AAS).

HUD guidelines consider XRF findings of 1.0 mg/cm<sup>2</sup> or greater, as lead based paint, which may be a potential hazard. It is extremely important to understand that XRF readings, which have a value of 0.0 mg/cm<sup>2</sup>, do not necessarily mean there is "no lead present".

## **RESULTS**

During our investigation a total of one hundred and one (101) XRF readings were collected of various exterior and interior building components/fixtures.

Of these readings one (1) resulted in levels considered to be lead based paint/glazing. Lead based paint/glazing/primer was located on the following component.

- ◆ White porcelain sink in the kitchen.

In addition, certain interior components were found to contain detectable levels of lead thus disturbance of these materials would be subject to Cal-OSHA Lead in Construction Standards.

For a complete listing of readings see the attached XRF Readings sheet.

## **REGULATORY CONSIDERATIONS / RECOMMENDATIONS**

Current EPA and HUD guidelines recommend that surfaces containing lead based paint in damaged condition to be considered “lead-based paint hazards” and should be addressed through abatement (permanent removal) or interim controls (temporary). Surfaces containing lead based paints in intact condition should be monitored, but are not considered to be “lead based paint hazards”.

At the time of our inspection no damaged lead based paint or glazing was observed.

### **Construction Work Standards**

At present, there are no state or federal laws dealing with mandatory abatement following the identification of lead containing or lead based paints prior to disturbance. However, in 1993 the Occupational Safety and Health Administration promulgated legislation (29 CFR 1926.62 and 8 CCR 1532.1) entitled "Lead Exposure in the Construction Industry" which deals with worker exposure to lead.

It should be noted that aside from the HUD definition of lead-based paint (1.0 mg/cm<sup>2</sup>), OSHA regulates worker protection and work practices on building components containing any detectable amounts of lead. Therefore, components determined to contain less than 1.0 mg/cm<sup>2</sup> may still be subject to OSHA regulations, if these materials are to be disturbed. This standard essentially states that work, involving components containing any amount of lead must follow certain guidelines. These guidelines include but are not limited to training, personal protective equipment and specific work practices whenever workers disturb lead in any concentration because the disturbance may result in airborne exposures over action or permissible exposure limits. This legislation requires that any task that may potentially expose workers to any concentration of lead be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to conduction of activities that may generate a lead exposure, such workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels.

Any proposed renovation/demolition, which may involve the removal of building materials with lead based and/or lead containing painted surfaces, should include provisions to minimize the potential for airborne release of lead contaminated dust. It is recommended, as a minimum, that

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

demolition of building materials which have lead-based and/or lead-containing paints be conducted with the materials kept in a wetted state and removed in sections, as feasible, to reduce the potential for airborne lead emissions.

## **LIMITATIONS**

NorBay Consulting conducted this inspection and prepared this report for the sole and exclusive use of Greystone West Company/Novato Unified School District, the only intended beneficiaries of our work. NorBay Consulting has performed this inspection in a substantial and workmanlike manner, in accordance with generally accepted methods and practices of the profession, and consistent with that level of care and skill ordinarily exercised by reputable environmental consultants under similar conditions and circumstances.

No subsurface inspection was conducted to determine if asbestos cement "transite" water lines or electrical cableways exist at the subject site. The inspection was limited to those materials scheduled to be disturbed in this building and should not be considered a complete campus inspection.

Enclosed you will find the laboratory reports and chain of custody form for all asbestos bulk samples collected. In addition, a spread sheet of all XRF readings and the CDPH Form 8552 is also included. If you have any questions regarding this report or if you require additional information please do not hesitate to contact me at (415) 507-9786.

Sincerely,  
NORBAY CONSULTING

*Bob Gerhold*

Bob Gerhold  
Certified Asbestos Consultant #92-0157  
CDPH Certified Lead Inspector/Assessor I2108

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

**LABORATORY REPORTS AND  
CHAIN OF CUSTODY FORMS**

**POLARIZED LIGHT MICROSCOPY (PLM)**



Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

## **XRF READINGS**

**Readings shaded in gray indicate lead based paint**

**Readings shaded in green indicate lead containing paint**

Pre-Renovation Asbestos and Lead Inspection  
Performing Arts Center  
San Marin High School

**CDPH FORM 8552**