

## *NorBay Consulting*

**LOGICAL**

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*2400 Las Gallinas Avenue, Suite 110  
San Rafael, California 94903*

*Phone: (415) 507-9786  
Fax: (415) 507-9760*

September 5, 2020

Mr. Will McManus  
c/o San Rafael City Schools  
310 Nova Albion Way  
San Rafael, CA 94903

**SUBJECT: LIMITED ASBESTOS AND LEAD INSPECTION  
TERRA LINDA HIGH SCHOOL (WALKWAY REPAIR PROJECT)  
SAN RAFAEL, CALIFORNIA**

Dear Mr. McManus:

NorBay Consulting is pleased to provide the analytical results from the limited pre-renovation asbestos and lead inspection conducted of the walkway attached the Main Building on the campus of Terra Linda High School in San Rafael, California. This inspection was part of the Walkway Repair Project.

The inspection included the visual observation of suspect asbestos containing building materials within the path of construction of an upcoming renovation project, 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 LRC-1004

## **EXECUTIVE SUMMARY**

NorBay Consulting conducted a limited pre-renovation asbestos and lead inspection of the walkway attached the Main Building on the campus of Terra Linda High School in San Rafael, California. The inspection was limited to those areas and materials scheduled to be disturbed during an upcoming renovation project. Mr. Bob Gerhold, Cal-OSHA Certified Asbestos Consultant #92-0157 and CDPH Lead Inspector/Assessor LRC-1004 and Mr. Mike Gerhold, EPA Building Inspector #44537 and CDPH Lead Sampling Technician #31696 conducted the inspection on September 5, 2020.

**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, anyone of which could be crucial to the proper understanding and risk assessment of the subject matter.**

A total of eight (8) samples of suspect asbestos containing building 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.

- ◆ None.

A total of thirteen (13) readings were collected of 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 was located on the following components:

- ◆ Exterior blue concrete beams on the walkway;
- ◆ Exterior blue concrete columns on the walkway;
- ◆ Exterior blue concrete fascia on the walkway.

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**

Homogeneous areas of materials, which were suspected of containing asbestos were identified. 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 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.

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The sampling strategy 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 SGS Forensic Laboratories of Hayward, 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 which 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**

Analytical results can be found in the following table

Sample ID	Material	Location	Results
TC-1-3	Concrete & topcoat	Exterior, walkway	No Asbestos Detected
Soffit-1-3	Concrete w/paint	Exterior, walkway	No Asbestos Detected
Column-1&2	Concrete w/paint	Exterior, walkway	No Asbestos Detected

## **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

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Protection Agency (EPA) define material which contains more than one percent asbestos to be an asbestos containing material (ACM). However, Cal-OSHA has an additional classification for manufactured materials found to contain asbestos in quantities between 0.1% to 1%. This classification is referred to as Asbestos Containing Construction Materials (ACCM).

**Analytical results indicated that the none of the materials sampled contained asbestos thus there appears to be no asbestos impacts involved with this portion of the project.**

## **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 area 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 homogeneous 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 or which a corrective response action will be required.

Currently, the most widely used levels for determining 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 (pip) 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 but are below what the instrument can detect. Positive results can be used to indicate that detectable levels of lead are present, but negative results can not be interpreted as conclusively demonstrating the absence of low levels of lead.

## **RESULTS**

During our investigation a total of thirteen (13) XRF readings were collected of various exterior components. Of the thirteen (13) readings collected, lead-based paint was found in seven (7) of the readings.

Lead based paint/glazing was located on the following components:

- ◆ Exterior blue concrete beams on the walkway;
- ◆ Exterior blue concrete columns on the walkway;
- ◆ Exterior blue concrete fascia on the walkway.

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

## **REGULATORY CONSIDERATION/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, the following components were found to contain damaged lead based paints/glazing and are considered a “lead-based paint hazard”.

- ◆ None.

## **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 eight-hour TWA results reveal exposures within acceptable levels.

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Any proposed renovation/demolition, which may involve the removal of building materials with lead-based paint 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 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.

The Federal EPA Renovation, Repair and Painting Rule 40 CFR 745, which became effective April 22, 2010 covers all non-abatement renovation, repair or painting work in pre-1978 child occupied facilities and housing. Work which disturbs more than 6 square feet per room, or 20 square feet per exterior of paint or other surface coatings that contain lead in concentrations equal to or in excess of 1.0 mg/cm<sup>2</sup> by XRF are covered by this rule.

## **LIMITATIONS**

NorBay Consulting conducted this inspection and prepared this report for the sole and exclusive use of Greystone West Company/San Rafael City Schools, 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.

Enclosed you will find the laboratory reports and chain of custody form for all asbestos bulk samples collected. In addition, a spread sheet of lead readings is attached.

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 Lead Inspector/Assessor LRC-1004

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Terra Linda High School (Walkway Repair Project)  
San Rafael, California

**LABORATORY REPORTS AND  
CHAIN OF CUSTODY FORMS**

**POLARIZED LIGHT MICROSCOPY (PLM)**

# Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)  
NVLAP Lab Code: 101459-0

NorBay Consulting  
Robert Gerhold  
2400 Las Gallinas  
Suite 110  
San Rafael, CA 94903

**Client ID:** 3982  
**Report Number:** B307875  
**Date Received:** 09/03/20  
**Date Analyzed:** 09/03/20  
**Date Printed:** 09/03/20  
**First Reported:** 09/03/20

**Job ID/Site:** 7638 - Terra Linda HS, Walkway Repair Project, San Rafael, California

**SGSFL Job ID:** 3982  
**Total Samples Submitted:** 8  
**Total Samples Analyzed:** 8

**Date(s) Collected:** 08/31/2020

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
<b>TC-1</b>	12337611						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							
<b>TC-2</b>	12337612						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							
<b>TC-3</b>	12337613						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							
<b>Soffit-1</b>	12337614						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							
<b>Soffit-2</b>	12337615						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							
<b>Soffit-3</b>	12337616						
Layer: Grey Cementitious Material			<b>ND</b>				
Layer: Paint			<b>ND</b>				
Total Composite Values of Fibrous Components:		<b>Asbestos (ND)</b>					
Cellulose (Trace)							

Client Name: NorBay Consulting

Report Number: B307875

Date Printed: 09/03/20

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
<b>Column-1</b>	12337617						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
<b>Column-2</b>	12337618						
Layer: Grey Cementitious Material			ND				
Layer: Paint			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							



Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. SGSFL is not able to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.

NorBay Consulting  
 2400 Las Gallinas Avenue, Suite 110  
 San Rafael, CA 94903  
 (415) 507-9786 Phone

Job Site: Terra Linda HS  
Walkway Repair Project  
San Rafael, California

Project Number: 7638  
 Analysis Requested: PLM  
 Turn Around Time: ~~48 Hours~~ Rush

Client ID	Date	Location	Description	
TC-1	8/31/2020	Exterior, walkway	Concrete & top coat	
TC-2		Exterior, walkway	Concrete & top coat	
TC-3		Exterior, walkway	Concrete & top coat	
Soffit-1		Exterior, walkway	Concrete w/paint	
Soffit-2		Exterior, walkway	Concrete w/paint	
Soffit-3		Exterior, walkway	Concrete w/paint	
Column-1		Exterior, walkway	Concrete w/paint	
Column-2		Exterior, walkway	Concrete w/paint	

Notes: email results to Bob@norbayca.com, Mike@norbayca.com



8/31/2020

Relinquished by \_\_\_\_\_ Date \_\_\_\_\_



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## **XRF READINGS**

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

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

