Addendum No. 3

Serenity House

October 31, 2016

SERENITY HOUSE
3701 Hacienda Street
San Mateo, CA
Project No. PC023

Issued on: October 31, 2016

TO ALL PLAN HOLDERS:

The following Addendum No. 3 to the above referenced project shall be included in the project Construction Documents.

Response to Bidder Question:

1. Is there a Hazardous Material Report for this project?
   Response: Yes, refer to enclosed reports.

Questions regarding this project should be directed to Department of Public Works, 555 County Center, 5th Floor, Redwood City, California, 94063-1065 (Project Manager Michael Ramirez, mramirez@smcgov.org 650.599.7398 and Paul Hundal ahundal@smcgov.org 650.599.1449)

Confirmation of Receipt

This form must be returned with your proposal or received by proposal due date

Addendum No. 3

SERENITY HOUSE
3701 Hacienda Street
San Mateo, CA
Project No. PC023

Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063

Addendum No. 3

Serenity House

This is to confirm that **Addendum No. 3 issued on** _____ has been received and that all information contained in the addendum has been incorporated into the Contractor's proposal.

By Contractors:

_____
Company Name

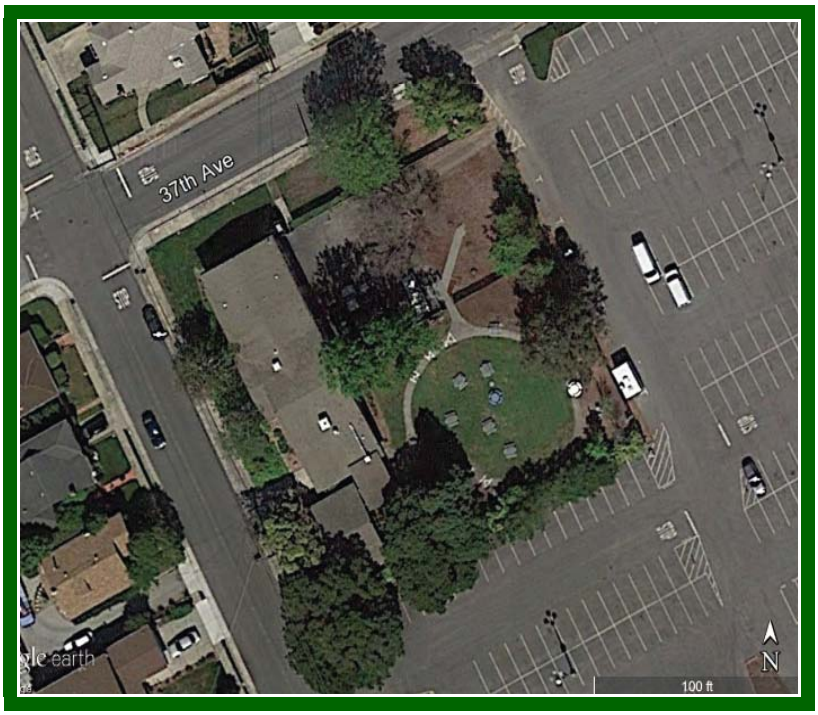
_____
Authorized Signature

_____
Print Name

_____
Date

SCA Project #: F11842 **Oct 2015**

SUMMARY REPORT:
HAZARDOUS MATERIALS SURVEY
3701 HACIENDA STREET
SAN MATEO, CA 94403



PREPARED BY:

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SUMMARY REPORT:
HAZARDOUS MATERIALS SURVEY
3701 HACIENDA STREET
SAN MATEO, CA 94403

CONDUCTED FOR:

COUNTY OF SAN MATEO
DEPARTMENT OF PUBLIC WORKS
555 COUNTY CENTER, 5TH FLOOR
REDWOOD CITY, CA 94063

SCA PROJECT NO.: F11842

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Table of Contents

1.0 Executive Summary

This report summarizes the results of a survey for asbestos-containing construction materials, lead-based paint, and associated environmental building material hazards for the planned renovations at 3701 Hacienda Street, San Mateo, CA 94403. The survey and destructive sampling was conducted on September 22, 2015 by Dan Leung, CSP, CDPH, CAC of SCA Environmental, Inc. (SCA).

The project includes 2 structures defined as follows and depicted on the Site Map in Plate 1 (attached) as well as various parking, paved and unpaved areas, and a covered portico:

Building	Stories	Year Built	Description
Main	2	Est. 1952-1953	Basement: Crawlspace, Activity Room, Laundry, Restrooms, Storage Room and Furnace
South	1	Unknown	Believed to have been built later than Main Bldg.; most recently used as offices
Covered Portico	1	Unknown	Believed to have been built around the same time as South Bldg.

The survey included limited destructive testing inside of structures and included sampling of suspect asbestos and lead containing materials, as well as visual identification of PCB and mercury-containing items. In addition, exterior asphalts and concretes were tested for asbestos, and soils for natural occurring asbestos (NOA) were sampled at the facility to a depth of 4 feet below ground surface (bgs). The following summarizes the results.

The survey included limited destructive testing inside of structures and included sampling of suspect asbestos and lead containing materials, as well as visual identification of PCB and mercury-containing items. In addition, exterior asphalts and concretes were tested for asbestos, and soils for natural occurring asbestos (NOA) were sampled at the facility to a depth of 4 feet below ground surface (bgs). The following summarizes the results.

Asbestos

Various materials were identified as asbestos-containing as part of this investigation. A summary of asbestos-containing materials is tabulated in the Table: Materials Matrix Report (MMR).

Items assumed asbestos, pending “destructive testing” if impacted as part of the proposed renovations, include the following:

1. fire brick and mortar within the fireplace which could not be sampled without destructive testing, and
2. transite associated with underground utilities.

Prior to any renovations or demolition, the National Emission Standard for Hazardous Air Pollutants (NESHAP) mandated by the Environmental Protection Agency (EPA) and locally enforced by the Bay Area Air Quality Management District (BAAQMD) require:

1. A building be inspected for asbestos-containing materials prior to building demolition; and
2. Asbestos containing materials subject to damage or which will be made friable be removed.

Naturally-Occurring Asbestos in Soils

Surficial samples of soils up to a depth of 4 feet bgs in various areas of the site showed no asbestos was detected in any soil sample based on CARB 435 methodology.

Polychlorinated Biphenyls (PCBs)

Various materials were also sampled for polychlorinated biphenyl (PCB) content. No PCBs exceeding 50 parts per million (ppm) were identified in the building materials.

Ballasts associated with fluorescent light fixtures were identified. These items are assumed to contain PCBs, the fixtures will need to be disassembled during renovation/demolition for visual determination.

Lead

Many paint samples collected in the Building were found to contain measurable concentrations of lead. Dust control procedures are required throughout the demolition/renovation of painted elements to comply with the Cal/OSHA regulations under 8 CCR 1532.1. In addition, many glazed ceramic tiles, lead sleeves, and vinyl flooring were found to contain lead. As a result, vinyl floor tiles and ceramic tiles may require segregation from the waste stream based on lead content and characterized to determine leachability prior to disposal. Disposal of these materials may be as RCRA or California hazardous waste pending receipt of analytical waste characterization data.

Mold

No visual evidence of mold was identified in the buildings.

Other Hazardous Materials

Miscellaneous items that have some minor cost impact to the Project include:

- mercury containing fluorescent light tubes and thermostats

2.0 Introduction

This report summarizes the results of a survey for lead-based paint, asbestos-containing materials, and associated environmental building material hazards at 3701 Hacienda Street, San Mateo, CA 94403. Sampling, coring and destructive testing were conducted on September 22, 2015.

The purpose of the survey was to determine the presence of regulated and/or potentially hazardous building materials in the Project area, that are required to be addressed in the planned renovation of the building. Materials addressed in the survey include:

- Asbestos-containing materials (ACM);
- Lead in paint and building materials;
- Polychlorinated Biphenyls (PCB) in building materials;
- lead in coatings, ceramic tiles and vinyl flooring;
- mercury-containing fluorescent tubes; and
- visual assessment for evidence of mold growth.

Individuals involved in the project, and their technical certifications, included:

SCA Staff	Role	Certifications
Chuck Siu, PE, CIH, CSP, CAC, CDPH	Principal, Certified Industrial Hygienist	Certified Safety Professional (CSP# 23562) Certified Asbestos Consultant (CAC #92-0098); Certified Lead Inspector/Assessor, Project Designer & Project Monitor (CDPH #I/D/M-851); Professional (Civil) Engineer (PE #C59672); and Certified Industrial Hygienist (CIH #CP2697).
Christina Codemo, CHMM, CAC, REPA	Sr. Project Manager	Certified Hazardous Materials Manager (CHMM #9761) Certified Asbestos Consultant (CAC #99-2649); Certified Environmental and Safety Compliance Officer (CESCO #729032); and Registered Environmental Property Assessor (REPA #953197)
Dan Leung, CSP, CAC, CDPH	Project Manager	Certified Safety Professional (CSP#22424) Certified Asbestos Consultant (CAC #07-4175); and Certified Lead Inspector/Assessor (CDPH #I/A-7329)

The following contract laboratories provided analytical services for the project:

Laboratory	Analysis Type	Accreditation
Reservoirs Environmental, Inc., Denver, CO	Polarized Light Microscopy (PLM) Asbestos Analysis	National Voluntary Laboratory Accreditation Program (NVLAP) AIHA Laboratory Accreditation Programs (AIHA-LAP)
Analytical Labs San Francisco, San Francisco, CA	PLM	National Voluntary Laboratory Accreditation Program (NVLAP) AIHA Laboratory Accreditation Programs (AIHA-LAP)

McCampbell Analytical Pittsburgh, CA	Gas Chromatography-Electron Capture Detector (GC-ECD) Polychlorinated Biphenyls Analysis Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for Lead	National Voluntary Laboratory Accreditation Program (NVLAP); and California Environmental Laboratory Accreditation Program (ELAP).

3.0 Methodology

3.1 Asbestos-Containing Materials

Asbestos sampling was performed in a fashion designed to minimize exposure of the surveyor or Subject Property occupants to airborne asbestos fibers. Samples were typically removed from the substrate utilizing a knife, the sample material was then placed into an airtight plastic vial. The vial's exterior was labeled with a unique sample I.D. The vial was then stored in a plastic bag.

Samples of suspect materials were collected generally using triplicate sampling procedures. Under these procedures, the first sample is analyzed. If it tests positive for asbestos (>1%), the analysis is suspended for further samples of that material. If the first sample tests only trace positive (between 0.1 to 1%), or negative, then the second and third samples are analyzed sequentially, in order to determine the possible presence of asbestos. If all three samples test negative, the material is considered as non-asbestos. If one or more samples test "trace" positive (<1%), the material is considered to be trace positive. If one or more samples are positive for asbestos, the material is considered positive.

Certain materials, such as gypsum board systems, are frequently non-homogeneous in content. For such materials, multiple samples were gathered at various points in the Subject Area, with all samples analyzed to determine the possible presence of asbestos.

All asbestos samples collected were submitted to Reservoirs Environmental, Inc., (REI) in Denver, Colorado for analysis by polarized light microscopy (PLM) with dispersion staining (DS/PLM). Samples of concrete and asphalt were submitted to Analytical Labs San Francisco (ALSF) in San Francisco, CA for analysis by PLM. The Bay Area Air Quality Management District's (BAAQMD), the Federal Environmental Protection Agency's (EPA), and California Environmental Protection Agency's (Cal/EPA) regulations all specify the DS/PLM method. In addition, soils samples were submitted to ALSF to be analyzed by CARB 435 methodology with point counting (1200 points).

3.2 Lead-Containing Paints and Building Materials

Lead contents were measured by collection and analysis of bulk samples. Samples were analyzed by EPA Method 6020 (ICP/MS) by McCampbell Analytical, Inc.

For the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), SCA recommends that all coated surfaces be considered to contain >600 ppm of lead. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of even very low levels of lead.

In addition, various ceramic tiles, lead sleeves, and vinyl flooring were identified with measurable lead content. The loose and peeling paints, ceramic and vinyl flooring should be segregated from the waste stream and characterized to determine leachability prior to disposal. Disposal of these materials may be as RCRA or California hazardous waste pending receipt of analytical waste characterization data. Additional sampling and analysis for leachable lead content by the Consultant during demolition will be required for waste characterization.

3.3 Polychlorinated Biphenyls

PCB-containing ballasts in fluorescent light fixtures can be identified by visually examining the ballasts in a representative number of light fixtures in the building. The ballast manufacturing industry has taken the active step of labeling new non-PCB containing ballasts, so that any ballast not labeled as non-PCB can reasonably be assumed to contain PCB (and required to be disposed as such). For the purposes of survey, SCA quantified all ballasts associated with lighting fixtures.

Bulk samples of possible PCB-containing materials were also collected and analyzed by McCampbell Analytical in Pittsburg, California by EPA Method 8082. All samples showed PCB content <50 ppm and would not require disposal at a TSCA-permitted facility.

3.4 Mercury-Containing Items

Fluorescent lamps, which contain mercury vapors, and mercury-containing thermostats were visually observed by SCA during the survey of the building in several areas. Mercury is a neurotoxin and a hazardous waste, and Cal/EPA currently regulates its disposal. Recycling is a viable alternative to disposal.

3.5 Mold

No areas with visual evidence of mold were noted during the investigation.

4.0 Applicable Standards

4.1 Asbestos-Containing Materials

ACM is defined by EPA regulations as those substances containing greater than 1% asbestos. The BAAQMD and the Cal/EPA provide local enforcement of these regulations. Friable ACM with greater than 1% asbestos needs to be disposed of as asbestos waste.

Prior to renovation of a Building, the BAAQMD requires abatement of friable ACM, as well as non-friable ACM that may become friable during renovation (practically, this means all non-friable ACM).

Federal Occupational Safety and Health Administrations (OSHA) regulations, locally enforced by CAL/OSHA, define ACM as substances that contain greater than 1% asbestos. Cal/OSHA also mandates special training, medical exams, personal protective equipment and record keeping for employees working with ACM. If a material contains less than 1% asbestos but more than 0.1% asbestos, the material may be disposed of as non-ACM, but the Cal/OSHA requirements would still have to be followed regarding workers' protection and Contractor licensing.

"Trace" materials are currently regulated in California and require the following:

- Removal using wet methods;
- Prohibition of removal using abrasive saws or methods which would aerosolize the material;
- Prompt clean-up of the impacted zone, using HEPA-filtered vacuums, as applicable;
- Employer registration by Cal/OSHA for removal quantities exceeding 100 sq. ft. per year; and
- Cal/OSHA Carcinogen Registration by the Demolition or Abatement Contractor impacting such materials.

4.2 Naturally-Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified in at least 44 of California's 58 counties. The Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations was signed into State law on July 22, 2002, and became effective in the Bay Area Air Quality Management District (District) on November 19, 2002. The purpose of the regulation is to reduce public exposure to NOA from construction and mining activities that emit dust which may contain NOA. The ATCM requires regulated operations engaged in road construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas where NOA is likely to be found. If identified, the regulation includes requirements for the Contractor to employ dust mitigation measures in order to reduce and control dust emissions. Depending on the proposed use of the site and future construction activities, sampling at depth may be required to verify if NOA is present at the site.

In addition, if asbestos concentrations exceed 1% asbestos, all work must be performed utilizing Class II work procedures with AHERA-trained personnel. Workers involved with removal of soil are required to adhere to all CalOSHA requirements (e.g., training, notifications to CalOSHA prior to work, personal monitoring, etc.).

4.3 Lead-Containing Paints and Building Materials

Since elemental lead is a suspect carcinogen and known teratogen and neurotoxic in high doses, lead-containing materials need to be identified prior to the on-set of demolition activities. Using combinations of engineering controls and personal protective equipment, lead-containing materials can be removed safely. Several sources of applicable standards are listed as follows:

1. Lead exposures in the workplace are regulated by Cal/OSHA, which has certain regulatory requirements for identifying and controlling potential lead exposures. Currently applicable regulations for the construction industry have been adopted by Cal/OSHA (8 CCR 1532.1) from the Federal OSHA regulations. The current OSHA 8-hour Permissible Exposure Level (PEL) for lead is 50 $\mu g/m^3$.

2. Current EPA and Cal/EPA regulations do not require LBP to be removed prior to demolition, unless loose and peeling. Provided that the paint coatings are securely adhered to the substrates (i.e., non-flaking or non-peeling), disposal of intact demolition debris can generally be handled in California as non-hazardous and non-RCRA waste, pending receipt of waste characterization testing following demolition.

   In California, loose and peeling LBP or other wastes require characterization and testing for leachability. Disposal requirements are outlined as follows:

Classification and Disposal of Inorganic Lead Wastes in California

Standards	**TTLC**	**Leachable Lead**		**Classifications**				
Concentations	**1000 mg/kg**	**5 mg/L**						
	Test Methods & Results							
Condition	**Total Pb (mg/kg)**	**STLC Pb (mg/L)**	**TCLP Pb (mg/L)**	**Non-haz waste**	**CalHaz**	**Fed Haz (RCRA)**	**Stabilization Required**	**Landfill Class**
1a	<50 (a1)	NA		Yes	no	no	no	III
1b	<100 (a2)		NA	Yes	no	no	no	III
2a	50 to <1000	<5	<5	Yes (c)	no	no	no	III or II (d)
2b		>5	<5	no	Yes	no	no	I
2c		>5	>5	no	Yes	Yes	Yes	I
2d (b)		<5	>5	no	no	Yes	Yes	I
3a	>1000	<5	<5	No	Yes	No	no	I
3b		>5	<5	no	Yes	no	no	I
3c		>5	>5	no	Yes	Yes	Yes	I
3d (b)		<5	>5	no	no	Yes	Yes	I
4	any	any	>5	no	no	Yes	Yes	I

(a1) 50 = 10 x 5 (STLC for Pb). Per WET method, impossible to exceed STLC even if 100% soluble.
(a2) 100 = 20 x 5 (TCLP for Pb). Per TCLP method, impossible to exceed STLC even if 100% soluble.
(b) Physically impossible due to the stronger acid used in WET than TCLP.
(c) Landfills will likely require documentation that TCLP is <5, even though TCLP is almost always less than WET.
(d) Landfill dependent, function of permit, landfill liner, or landfill policy

3. The major definitions of LBP or lead-coated surfaces are listed as follows:

   a. HUD defines LBP as paint that contains either ≥0.5% by weight of lead, or ≥1 mg/cm^2.

b. Consumer Product Safety Commission (CPSC) prohibits the manufacturing of paint that contains more than 90 ppm of lead.

Note that adherence to Cal/OSHA's Construction Lead Standard is required for all paint with any measurable lead content.

4. Lead is on the "Proposition 65" list, given its toxic potential in causing reproductive hazards.

5. The California Department of Public Health (CDPH) requires the use of Certified Lead Workers and Supervisors for lead abatement projects at public Buildings with a greater than 20 years expected life or whenever work is completed specifically to abate Lead-Based Paint as defined by HUD. The CDPH certification requirements do not apply to industrial sites; however, dust controls and personnel protection are still required under 17 CCR Sections 35001 through 36100.

4.4 Polychlorinated Biphenyls and Mercury-Containing Items

Cal/EPA regulates disposal of all these materials.

To reduce liability concerns, many building owners opt to have PCB ballasts incinerated, with a record of destruction generated. A slightly less expensive approach involves recycling of the components (and incineration of the small amount of PCBs separately); however, this method may pose liability concerns for building owners.

Mercury lamps and thermostats are best treated by bundling and recycling. Limited disposal is allowed by Cal/EPA, but not in the quantities typically generated during a major renovation or demolition project.

4.5 Mold

Several attempts have been made to identify surface and airborne concentrations of biological materials that indicate unhealthy conditions. No currently available guidelines have been generally accepted due to the large variability in surface sampling results and poor correlations with inhaled exposures according to the American Conference of Governmental Industrial Hygienists' "Bioaerosols Assessment and Control," Chapter 12. This position by the ACGIH exemplifies the need to use surface sampling data as a tool in conjunction with other aspects of the investigation to help support or disprove a hypothesis of an investigation.

While there are no airborne microbiological standards, ASHRAE recommends that indoor concentrations be less than outdoor concentrations based on filtrations of the outdoor air by the HVAC system, where applicable. Therefore, indoor concentrations exceeding 2 times the outdoor level is considered excessive and corrective actions should be taken.

5. Results and Conclusions

5.1 Asbestos in Building Materials

The detailed results (including quantities found in each location) are shown in the attached Table 1: Materials Matrix Report. Asbestos-sample locations are shown on drawings included as Attachment 1, and all analytical reports are included in Attachment 2.

Various materials were identified as asbestos-containing as part of this investigation. A summary of asbestos-containing materials is tabulated in Table 1: Materials Matrix Report (MMR). Additionally, the following items are assumed asbestos, pending additional "destructive testing":

- fire brick and mortar within the fireplace which could not be sampled without destructive testing, and
- transite associated with underground utilities.

Prior to any renovations or demolition, the National Emission Standard for Hazardous Air Pollutants (NESHAP) mandated by the Environmental Protection Agency (EPA) and locally enforced by the Bay Area Air Quality Management District (BAAQMD) require:

1. A building be inspected for asbestos-containing materials prior to demolition; and
2. Asbestos-containing materials subject to damage or which will be made friable be removed.

Identified or Assumed asbestos-containing materials to be disturbed by the proposed renovations should be abated by a Registered Asbestos Abatement Contractor.

5.2 Naturally-Occurring Asbestos in Soils

Sampling of subsurficial soils to a depth of 4 feet below ground surface (bgs) was included during the investigation and assessment. Asbestos was not identified in any soil sample collected based on CARB 435 Methodology with 1200 point counts, with the results reported as <0.08% asbestos.

5.3 Lead-Containing Paints & Coatings

Results of the bulk samples collected are included in Table 1: Materials Matrix Report. In addition, suspect building materials such as ceramic tiles, vinyl flooring, piping sleeves, etc. were tested for lead and are summarized in Table 1: Materials Matrix Report, and laboratory reports are included in Attachment 3.

Many paint samples collected were found to contain measurable concentrations of lead. In addition, glazed ceramic tiles, lead sleeves, and vinyl flooring were found to contain lead.

As lead was identified in some paints and a detailed inventory of paints was not performed for the project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of even very low levels of lead.

In addition, based on the California Total Threshold Level Concentration (TTLC) hazardous waste standard, the paints, sleeves, ceramic tiles, or vinyl flooring may be classified as hazardous wastes. These materials should be segregated from the general demolition debris and characterized separately to identify the waste stream. Additional sampling and analysis for leachable lead content by the Contractor during demolition will be required for waste characterization. Disposal of these materials may be as RCRA or California hazardous waste pending receipt of analytical waste characterization data.

None of the applicable regulations require removal of lead paint prior to renovation if the paint are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed, as long as demolition practices do not compromise worker safety.

Conventional demolition techniques should be employed for all painted surfaces with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding:

- Worker awareness training;
- Exposure monitoring, as needed;
- Medical examinations, which may include blood lead level testing; and
- Establishing a written respiratory protection program.

5.4 Polychlorinated Biphenyls

Lighting ballasts were observed in conjunction with fluorescent lighting fixtures throughout the space. The contractor shall examine the lighting ballasts during the demolition process. If a "No PCBs" stamp is absent, the ballast should be assumed to contain polychlorinated biphenyls (PCBs).

No suspect materials containing more than 50 parts per million (ppm) of PCB were identified in the samples, beyond the assumed PCB in lighting ballasts.

Laboratory reports are included in Attachment 3.

Wastes containing >50 ppm PCB must be disposed of as PCB bulk product waste according to 40 CFR § 761.62 which involves disposal in a TSCA incinerator, a TSCA chemical waste landfill, a RCRA hazardous waste landfill, under a TSCA approved alternate disposal method, under the TSCA regulated decontamination procedures; or in a facility with a coordinated approval issued under TSCA. Waste with detected levels of PC <50 ppm may be disposed of in non-TSCA approval landfill facilities, including municipal solid waste landfills subject to state and local regulations regarding such disposal.

5.5 Mercury-Containing Items

Fluorescent light tubes and mercury thermostats were observed throughout the space. Fluorescent light tubes and thermostats are required to be either disposed of as hazardous material, or recycled for their mercury contents.

5.6 Mold

No areas with visual evidence of mold were noted during the investigation.

6.0 Limitations and Exclusions

SCA warrants that this survey was performed using due care and state of the art techniques. Beyond this, SCA does not warrant or guarantee the survey. Despite the care exercised, some materials may not have been identified, or may have been incompletely identified. This condition may occur due to renovations or original construction practices that concealed older materials, and/or visually similar materials with different compositions.

This document is not a stand-alone document; abatement of materials is recommended to be completed under the oversight and design of an AHERA-accredited Project Designer and Certified Asbestos Consultant. Although due care is exercised in the course of the survey, concealed materials may be found in the course of performing the abatement or demolition; a contingency budget should be included in any cost estimates prepared to cover unexpected conditions.

Figure 1. Site Plan
3701 Hacienda St, San Mateo, CA
SCA Proj.#: F-11842
Surveyed on: September 21 & 22, 2015

3701 Hacienda St. San Mateo Hazmat Survey		Sub-sample #							Main Building - Basement								Main Building - First Floor															Exterior	Roof	South Building - First Floor						Roof	Exterior	Portico	
Material ID	Material Description	A	B	C	D	E	Asbestos Positive? Yes. No. Trace. Assumed	UNITS (LF, SF, EA)	Activity Room	Laundry	Toilet	Furnace	Storage	Hall	Crawlspace	Stair	North Dorm	Bath 1	Bath 2	East Dorm	West Dorm	Hall	Office 1	Stor	Office	Vestibule	Foyer	Living	Dining	Kitchen	Exterior	Roof	Visitation	Observation	Hall	Office	Stor	Toilet	Roof	Exterior	Covered Portico	TOTAL (+/- 15%)
ASBESTOS																																								
PIDHW-8	Brown "aircell" insulation on domestic hot water (DHW) pipes and fittings	45% CH	45% CH					LF		40	30		30		150			50	50		30		30						30												440
WL-13	Black wall coating (patches)	35% CH						SF					1		10																										11
CONC-27	Gray concrete (-) perimeter foundation on southwest, south and southeast sides of building (below dining, kitchen and living room) with off-white paint/resinous material coating (+)	TR	6% CH				YES	SF																						1500										1500
ASPHALT-29	Asphalt (~5" thick) in parking lot (+) and baserock (-)	2-5% CH						SF																						3000										3000
PENMAS-34	Black/gray roofing penetration tars/mastic	20% CH	NA	NA				LF																							100										100
PENMAS-46	Black/gray roofing penetration tars/mastic	20% CH	NA					LF																													50				50
ASSUMED ASBESTOS (Destructive Testing Required to Confirm)																																								
BRICK-AAA	Fire brick and mortar on fireplace (cannot sample without destructive testing)						ASSUMED	SF																				300													300
TRANSITE-AAA	Buried asbestos-cement (transite) utility lines and piping							SF																						PNQ								PNQ		PNQ
NON-ASBESTOS																																								
CARMAS- 1	Gray carpet mastic under blue carpets	ND	ND	ND				SF	1200							150									80																1430
WLPL-2	Off-white skimcoat over off-white coarse wall plaster	ND	ND	ND	ND	ND		SF	1120	400	540			480		1400	1120	480	480	800	2000	1760	560	320	320	280	320	800	600	360											14140
BBMAS-3	brown mastic under 4" Black/gray vinyl baseboard	ND	ND	ND				LF	140																				75												215
CLPL-4	Off-white skimcoat over off-white coarse ceiling plaster	ND	ND	ND	ND	ND		SF	1200	150	100			200		150	600	225	225	300	750	1000	150	100	100		100	600	450	225											6625
CL-5	4'x8' Fiberglass ceiling panel (-) w/off-white textured covering (-)	ND	ND					SF		150																														150
CAULK-6	Off-white caulking around window frames	ND	ND	ND				LF	135	30							30	30	30	60	150		30		30	60		120	90	30											825
FIRECAULK-7	Red firecaulk around wall penetrations	ND	ND					LF		10			20											20																50
HVAC-9	Fiberglass insulation w/yellow painted canvas jacket on HVAC ducts	ND						LF		40		60																												100
PAINT-10	Gray/green paint on concrete floor	ND						SF			100																													100
WLPL-11	Off-white coarse wall plaster	ND	ND					SF				320	800																											1120
CLPL-12	Off-white coarse ceiling plaster	ND	ND					SF				100	300																											400
BBMAS-14	yellow glue under 4"/6" Blue/black vinyl baseboard	ND	ND	ND				LF			60			60			140			100	250	220	50	40	40		40	100													1100
WLCOV-15	Off-white painted textured wall covering w/yellow glue	ND	ND	ND				SF									1120			800	2000						320														4240
FLVCS-16	Tan wood-look vinyl floor sheeting w/jute backing	ND	ND	ND				SF									600			300	750	1000	100	100				600													3450
FLCER-17	1"x1"/1"x2"/2"x2" Gray, pink, blue, green ceramic floor tile (-) w/gray grout and mortar (-)	ND						SF										225	225				40																		490
WLCER-18	4"x4" Pink, beige, blue ceramic wall tile (-) w/off white grout and mortar (-)	ND					NO	SF										350	350																						700
12FLVCT/M-19	12"x12" Gray w/white streaks vinyl floor tile (-) w/yellow glue (-)	ND						SF															10																		10
FLVCS-20	Light gray pebble-look vinyl floor sheeting (-) w/yellow glue (-)	ND						SF													50																				50
FLVCS-21	Tan pebble-look vinyl floor sheeting (-) w/yellow glue (-)	ND	ND					SF																					450												450
WLMAS-22	Off-white fiberglass-reinforced panels (FRP)/faux wood panels (-) w/yellow glue (-)	ND						SF										200	200		60				160				180												800
FLCER-23	6"x6" Red quarry floor tile (-) w/gray grout (-) and off-white glue (-)	ND						SF																						225											225
FORMICA-24	Yellow marble-look Formica counter top w/tan glue	ND						SF																					30	80											110
SINK-25	Stainless steel sink w/black undercoating	ND						EA																						1											1
STUCCO-26	Pink-painted gray stucco walls	ND	ND	ND				SF																							7000										7000
CONC-28	Gray concrete at walkways, driveway and entry area	ND	ND	ND				SF																							500										500
RFAG-33	Tar and gravel roofing	ND	ND	ND				SF																								4500									4500
HDUTP-35	Off-white canvas tape around HVAC duct seams	ND						LF																								10									10
CARMAS-36	Yellow carpet glue w/off-white paint below blue carpets	ND	ND	ND				SF																									450	100	125	150	40					865
FLVCS-37	Light blue pebble-look vinyl floor sheeting (-) w/yellow glue (-)	ND						SF																													60				60

CH=Chrysotile asbestos ND=non detect NA=not analyzed PNQ=present but not quantified

SCA ENVIRONMENTAL, INC.

Table 1: Materials Matrix Report
3701 Hacienda, San Mateo, CA
SCA Project No. F-11842
Surveyed Sept. 21 - 22, 2015

3701 Hacienda St. San Mateo Hazmat Survey		Sub-sample #							Main Building - Basement								Main Building - First Floor																				South Building - First Floor						Roof	Exterior	Portico	
Material ID	Material Description	A	B	C	D	E	Asbestos Positive? Yes. No. Trace. Assumed	UNITS (LF, SF, EA)	Activity Room	Laundry	Toilet	Furnace	Storage	Hall	Crawlspace	Stair	North Dorm	Bath 1	Bath 2	East Dorm	West Dorm	Hall	Office 1	Stor	Office	Vestibule	Foyer	Living	Dining	Kitchen	Exterior	Roof	Visitation	Observation	Hall	Office	Stor	Toilet	Roof	Exterior	Covered Portico	TOTAL (+/- 15%)
WLSH-38	Wall sheetrock w/tape, joint compound and texture	ND	ND	ND			NO	SF																								720	320	480	400	210					2130
CLSH-39	Ceiling sheetrock w/tape, joint compound and texture	ND	ND	ND				SF																								450	100	125	150	40					865
BBMAS-40	4" Blue vinyl baseboard w/off-white glue	ND	ND	ND				LF																								90	40	60	50	25	35				300
WLSH-41	Wall sheetrock w/tape and joint compound	ND	ND					SF																													280		120		400
CLSH-42	Ceiling sheetrock w/tape and joint compound	ND	ND					SF																													60		15		75
STUCCO-43	Pink-painted gray stucco walls	ND	ND	ND				SF																															1600		1600
CAULK-44	Off-white caulking around window frames	ND	ND	ND				LF																															60		60
RFAG-45	Tar and gravel roofing	ND	ND	ND				SF																														1100			1100
CONC-47	Gray concrete at walkways and steps	ND	ND					SF																															500		500
RFAG-48	Tar and gravel roofing	ND	ND					SF																																375	375
ASPHALT-30	Asphalt walkway (~1" thick) (-) and baserock (-)	ND						SF																						1200											1200
CONC-31	Concrete slab (~6" thick) and fill-all layers (-)	ND						SF																						500											500
CONC-32	Concrete slab (~3" thick), black vapor barrier, and concrete slab (~2" thick)-all layers (-)	ND						SF					300																												300
B1,B2,B3,B4	Soils to 4' below ground surface	ND	ND	ND	ND			CYD																						PNQ								PNQ		PNQ
WL-NNN	4'x8' Off-white painted plywood wall panels						NOT SUSPECT	SF	1120		540			480		700											800														3640
CL-NNN	4'x8' Off-white painted plywood ceiling panels							SF	1200																																1200
HVAC-NNN	Fiberglass insulation w/plastic covering							LF																								30	30	30	20	10	20				140
PI-NNN	Non-insulated domestic hot water (DHW) pipes and fittings							LF																													40				40
PCBs							PPM																																		
CAULK-6	Off-white caulking around window frames						<2.5	LF	135	30							30	30	30	60	150		30		30	60		120	90	30											825
FIRECAULK-7	Red firecaulk around wall penetrations						<10	LF		10			20											20																	50
CAULK-44	Off-white caulking around window frames						<0.50	LF																															60		60
PCBs	PCB-Ballasts, assumed >50 ppm						Assumed >50	EA	6	2	2			2		1	8	2	2	4	10	5	1	1	1			5	6	2			3	1	2	1		1				68
LEAD							PPM																																		
PAINT-10	Gray/green paint on concrete floor						120	SF			100																															100
BE-1	Beige paint on plaster walls and ceilings throughout interior						1600	SF	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ		PNQ																										PNQ
FLVCS-16	Tan wood-look vinyl floor sheeting w/jute backing						1700	SF									600			300	750	1000	100	100				600													3450
FLCER-17	1"x1"/1"x2"/2"x2" Gray, pink, blue, green ceramic floor tile						8.8	SF										225	225				40																		490
WLCER-18	4"x4" Pink, beige, blue ceramic wall tile						8600	SF										350	350																							700
12FLVCT/M-19	12"x12" Gray w/white streaks vinyl floor tile						<5.0	SF															10																			10
FLVCS-20	Light gray pebble-look vinyl floor sheeting						<5.0	SF													50																					50
FLVCS-21	Tan pebble-look vinyl floor sheeting						<5.0	SF																					450												450
OW-2	Off-white paint on plaster walls and ceilings						1200	SF									PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ												PNQ
PK-3	Pink paint on stucco walls and concrete foundation						300	SF																							PNQ								PNQ		PNQ
OW-4	Off-white paint on roof eaves						22000	SF																									PNQ						PNQ		PNQ
OW-5	Off-white paint on HVAC equipment on roof						2300	SF																									PNQ								PNQ
SLEEVE-6	Lead sleeve around vent pipes on roof						26000	SF																									PNQ								PNQ
FLCER-23	6"x6" Red quarry floor tile (-) w/gray grout (-) and off-white glue (-)						<5.0	SF																						225											225
FLVCS-37	Light blue pebble-look vinyl floor sheeting						<5.0	SF																													60				60
Lead in paints	Lead Containing Paints / Coatings (assumed >600ppm)						>600 ppm	SF	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ	PNQ
Other Hazardous Materials																																									
Mercury	Fluorescent Light Tubes						Assumed	EA	12	4	4			4		2	16	4	4	8	20	10	2	2	2			10	12	4			6	2	4	2		2				136
Mold	Potentially Moldy Conditions						Not visually identified																																		0

CH=Chrysotile asbestos ND=non detect NA=not analyzed PNQ=present but not quantified

SCA ENVIRONMENTAL, INC.

Table 1: Materials Matrix Report
3701 Hacienda, San Mateo, CA
SCA Project No. F-11842
Surveyed Sept. 21 - 22, 2015

SCA PRJ. NO.: F11922.02 **June 2016**

FINAL REPORT:

SUMMARY REPORT OF ENVIRONMENTAL QUALITY ASSURANCE SERVICES
SERENITY HOUSE RENOVATIONS
3701 HACIENDA STREET
SAN MATEO, CA 94403

PREPARED FOR:

MR. MICHAEL RAMIREZ
COUNTY OF SAN MATEO
DEPARTMENT OF PUBLIC WORKS
555 COUNTY CENTER, 5TH FLOOR
REDWOOD CITY, CA 94063

PREPARED BY:

SCA

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650 DELANCEY STREET, SUITE 222
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SCA PROJECT NO.: F-11922.02

JUNE 2016

Table of Contents

Attachments:

A. Abatement Work Plan
B. Perimeter Air Sampling Data Sheets and Laboratory Reports
C. Clearance Air Sampling Data Sheets and Laboratory Reports
D. Fenceline Air Sampling Data Sheets and Laboratory Reports
E. Daily Reports and Clearance Forms
F. Worker's Documentation, Sign-In Logs and Personal Air Sample Results
G. Negative Pressure Records
H. SCA's Personnel Certificates
I. Cal/OSHA and BAAQMD Notifications
J. Contractors' CSLB Licenses and CalOSHA Asbestos Registrations
K. Waste Manifests & Waste Disposal Information
L. Safety Data Sheets
M. Additional Bulk Sampling Laboratory Reports
N. Daily Logs
O. DOP Testing Certificates
P. Updated Materials Matrix Report (Residual Asbestos Materials)

1.0 INTRODUCTION

This report summarizes the observations and results of the asbestos abatement activities at the Serenity House, 3701 Hacienda Street, San Mateo, CA 94403. Work occurred throughout the building in the crawlspace, basement, first level, roof, and asphalt parking lot. The work was divided into two phases:

- Phase I work included the removal of all thermal system insulation (TSI) in the crawlspace, removal of the asphalt parking lot, removal of all roofing penetrations, stabilization of all lead based paint, and exploration for TSI throughout the interior of the building.
- Phase II work included the removal of the confirmed TSI throughout the basement and first level of the building.

Synergy Enterprises, Inc. (Synergy) was contracted to remove all asbestos-containing materials in the building except the off-white paint/resinous material coating on exterior gray concrete perimeter foundation walls on southwest, south and southeast sides of building (below dining, kitchen and living room). All other asbestos-containing materials in the building and the exterior asphalt parking lot were abated as part of the project.

Synergy set-up a negative pressure enclosure inside of the crawlspace and a regulated area around the asphalt parking lot for the first phase of abatement activities which commenced on April 18, 2016. Final clearance was achieved inside of the crawlspace on April 22, 2016, and the removal of asphalt, roofing penetrations, and stabilization of all lead-containing paints was completed on April 28, 2016. Synergy removed all TSI throughout the interior of the building. This work commenced on May 10, 2016, and was completed on May 13, 2016.

SCA Environnemental, Inc. (SCA) was contracted by County of San Mateo to conduct environmental monitoring of the work activities.

SCA individuals involved in the project, and their technical certifications, included:

SCA Staff	**Role**	Certifications
Christina Codemo, CHMM, CAC	Senior Project Manager	• Certified Asbestos Consultant (CAC #99-2649); • Certified Hazardous Materials Manager (CHMM #9761).
Chuck Siu, PE, CIH, CSP, CAC, CDPH	Principal, CIH, QA/QC	• Certified Industrial Hygienist (CIH #CP2697); • Professional Engineer (Civil) PE #C59672); • Certified Safety Professional (#22424) • Certified Asbestos Consultant (CAC #92-0098) • Certified Lead Inspector/Assessor, Project Designer & Project Monitor (CDPH #I/D/M-851)
Tucker Kalman, CAC, CDPH	Environmental Scientist	• Cal/OSHA Certified Asbestos Consultant (CAC #15-5384). • CDPH Certified Lead Inspector/ Assessor (CDPH #25870)
Tyler Harris, CAC, CDPH	Environmental Scientist	• Cal/OSHA Certified Asbestos Consultant (CAC #10-4704) • California Department of Health Services' Lead Sampling Technician & Inspector/Assessor (#TI-19408).

The contract laboratory, which provided analytical services for the project, was the following:

Laboratory	Analysis	Accreditation / Registration
EMSL Analytical San Leandro, CA	Transmission Electron Microscopy (TEM); Phase Contrast Microscopy (PCM); Polarized Light Microscopy (PLM)	• National Voluntary Laboratory Accreditation Program (NVLAP); • American Industrial Hygiene Association (AIHA)

1.1 BACKGROUND

Limited destructive sampling was performed by SCA in September 2015 to identify any asbestos containing materials that would be impacted by planned renovation activities. This survey found the TSI, asphalt, roofing penetrations, and wall mastic associated with weather proofing to contain asbestos. In addition, various items, including TSI in wall / ceiling cavities, were assumed pending additional destructive testing at the start of construction.

Based on the sampling results, abatement specifications and work plans were prepared by SCA for the proposed abatement project. A copy of the work plan is included in Appendix A. SCA was then contracted by County of San Mateo to provide Environmental Quality Assurance Services during abatement activities performed by Synergy.

During the abatement work, SCA collected bulk samples of previously assumed materials (i.e., the fireplace brick & mortar) scheduled for demolition. No asbestos was identified in these materials. In addition, Synergy and SCA completed exploration and quantification for TSI previously assumed present behind walls and above ceilings in the basement and first floor levels. Once the TSI material was located and quantified, Synergy returned to the site for abatement of all TSI within the facility.

The project chronology is outlined as follows:

<u>Phase I</u>

- April 18, 2016: Synergy isolated the crawlspace from the rest of the building and put it under negative pressure. Synergy began abatement of TSI, contaminated fiberglass insulation, and mastic inside of the crawlspace. SCA collected a bulk sample of the brick and mortar from the fireplace, which was analyzed and found to be non-detect for asbestos.
- April 19, 2016: Synergy completed removal of all TSI inside of the crawlspace. Synergy began removal of the weatherproofing wall mastic inside of the containment and cleaning/decontamination of the entire crawlspace.
- April 20, 2016: Synergy continued to clean the crawlspace containment and completed setup of the 10-ft fencing with black plastic sheeting around the asphalt parking lot to mitigate dust. Synergy began to remove asphalt inside of the regulated work area using wet methods and stored all asphalt waste inside of lined waste dumpsters locked within the regulated area.
- April 21, 2016: Synergy completed cleaning of the crawlspace containment. The containment passed SCA's visual inspection, and Synergy applied an encapsulant to the work area. Synergy made exploratory holes in the walls of the restrooms and kitchens, where 140-ft of TSI was discovered above plaster ceilings and behind plaster walls, to quantify and map the material.
- April 22, 2016: SCA collected aggressive air clearance samples for asbestos inside of the crawlspace containment. All results were non-detect for asbestos, and the crawlspace was released for reoccupancy. Synergy continued asphalt removal on the exterior of the building. Synergy demolished all ceramic tiles inside of the restrooms. This work was performed inside of

two separate negatively pressurized containments.

- April 25, 2016: Synergy continued removal of asphalt in the parking lot. Synergy was limited to removing two dumpsters of material daily.
- April 26, 2016: Synergy continued removal of asphalt. Synergy and SCA investigated for TSI throughout the interior of the building.
- April 27, 2016: Synergy continued removal of asphalt. Synergy and SCA completed investigation for TSI throughout the interior of the building, and SCA quantified and mapped all material. This quantity was provided to the County of San Mateo to solicit a change order for the additional abatement work.
- April 28, 2016: Synergy completed asphalt removal, and all asphalt was transported off site. SCA inspected the parking lot area, and the area passed final visual inspection. Synergy completed all roof penetration abatement and lead paint stabilization.
- April 29, 2016: Synergy transported the remaining waste dumpster off site. County of San Mateo signed the waste manifest for this material. Synergy demobilized from the site.

Phase 2

- May 10, 2016: Synergy and SCA returned to the site. Synergy completed setup of a negatively pressurized containment inside of the basement to abate the insulated lines of TSI above the plaster ceilings in the hallways, restrooms, laundry room, and mechanical rooms. TSI was removed from behind the plaster walls in the restrooms and laundry room as well.
- May 11, 2016: Synergy began abatement of the TSI inside the basement negatively-pressurized containment
- May 12, 2016: Synergy completed TSI abatement and cleaning of the entire basement containment. SCA visually inspected and approved Synergy to apply encapsulant.
- May 13, 2016: SCA collected aggressive air clearance samples inside of the basement containment. All results were below the clearance standard, and Synergy was approved to take down the containment.

To reduce the potential hazards to the contractor's abatement personnel and surrounding buildings during the abatement of asbestos-containing materials (ACM), the work area was isolated and controlled procedures were undertaken. In summary, the procedures for full containment utilized in the work area included:

- Installation of polyethylene air locks on the doors;
- Two layers of polyethylene sheeting over critical barriers, walls, and flooring;
- Sealing of gaps between piping and other transverse objects with the use of spray foam and fiberglass batt;
- Installation of cardboard and two layers of polyethylene over all air vents;
- Installation of HEPA-filtration units, DOP tested onsite by a 3rd party to verify the filtration efficiency, used to establish negative pressurization of the work containments;
- Installation of a printing electronic manometer to monitor negative pressure inside of the containments;
- Inspection of the containments and negative pressurization provisions by SCA's personnel;
- Wetting and abatement of the asbestos-containing materials (ACM);
- Visual inspection by SCA and removal of all polyurethane barriers (with the exception of critical barriers) before clearance sampling;
- Final visual inspections and aggressive clearance air sampling by SCA;
- Analysis of final aggressive clearance sampling using transmission electron microscopy (TEM).

During abatement activities, SCA was onsite to assist County of San Mateo with disposal of hazardous

and non-hazardous waste. SCA signed all manifests on behalf of County of San Mateo and delivered the generator copies of all manifests to the County. Copies of waste manifest are included in Appendix K.

2.0 METHODOLOGY

Prior to the commencement of abatement work activities at the site, Synergy isolated the crawlspace from the rest of the building by sealing all vents and other critical barriers. The crawlspace was then put under negative pressure before removal of TSI was permitted to begin. At that time, Synergy also installed 10 foot high fencing with black plastic around the entirety of the asphalt parking lot prior to beginning removal of the asbestos containing asphalt. Synergy installed regulated area signage around the building during abatement of roofing penetrations and stabilization of lead paint in order to prevent any unauthorized movement into the work areas.

Prior to the Phase II removal of TSI inside of the building, Synergy isolated the basement living area, hallway, restrooms, and mechanical rooms inside of one negatively pressurized containment.

During work activities in the building, SCA monitored Synergy's work practices. SCA verified that Synergy utilized adequate procedures and practices including, but not limited to: wet methods, personal protection equipment, and respiratory protection. During the work activities, SCA collected perimeter in the areas considered to have a high chance of becoming contaminated if there was a leak in the containment structure. When the abatement contractors' personnel indicated that the work activities were complete and the work area had been thoroughly cleaned, SCA performed a visual inspection to verify the area's cleanliness. Once the full containment passed visual inspection, SCA conducted aggressive clearance air sampling.

During all work activities inside of the asphalt parking lot regulated area, SCA collected fenceline air samples at the four fencelines. Fenceline air samples were analyzed by PCM. The downwind fenceline sample and the fenceline samples closest to the asphalt abatement were analyzed by transmission electron microscopy (TEM) in addition to PCM.

Perimeter air samples were collected and analyzed by PCM in accordance with NIOSH method 7400 using "A" counting rules. This method entailed the drawing of a known volume of air through a Millipore 0.8 µm pore size, 25-mm diameter, mixed cellulose ester (MCE) membrane filter housed in a conductive extension cowl cassette. A section of the filter was then mounted on a slide and examined under a microscope, using NIOSH 7400 protocols. Particulates meeting certain dimensional requirements (3:1 aspect ratio and 5 µm in length) were counted; no differentiation between asbestiform and non-asbestiform fibers was attempted. After a known portion of the filter was examined, the quantity of fibers deposited on the filter was estimated, and the airborne concentration of fibers (expressed in fibers per cubic centimeter of air, f/cc) was calculated.

Aggressive clearance air samples were analyzed using TEM, in accordance with the method specified in the Federal Register, 40 CFR Part 763, commonly referred to as the Asbestos Hazard Emergency Response Act (AHERA) Regulation. The AHERA air clearance methodology requires using air sampling pumps at a flow rate under 10 liters per minute, to draw a volume of air ranging from 1,199 to 1,800 liters through 0.45 µm pore size, 25-mm diameter MCE membrane filters housed in a conductive extension cowl cassette. A section of the filter is then mounted on a slide, treated, and examined by TEM. The AHERA methodology stipulates certain counting rules for identifying asbestos structures (expressed in structures per square millimeter of air, str./mm2). Structure types include individual fibers, bundles, and matrix particles.

3.0 STANDARDS

A variety of recommended and mandatory standards were applicable to this project. The table below summarizes these standards. Note that the contractual standards are always more stringent than the mandatory or recommended standards promulgated by federal OSHA, Cal/OSHA, NIOSH and ACGIH.

Summary of Asbestos Standards

Source	Level	Nature	Comments
Cal/OSHA[1]	0.1 f/cc 1.0 f/cc	Occupational & mandatory	8-hour Time Weighted Average (TWA) Permissible Exposure Level (PEL) (triggers OSHA required training, medical examinations, etc.) Excursion Limit (EL) for 30 minutes sampling duration
NIOSH[2]	0.1 f/cc	Recommended	Occupational PEL
ACGIH[3]	0.1 f/cc	Recommended	Occupational Threshold Limit Value (TLV)
Calif. Prop 65[4]	Vague	Mandatory	Standard and monitoring method are unclear, but generally interpreted as comparable to outside ambient air
U.S.EPA/ AHERA[5]	0.01 f/cc (PCM) 70 str/mm2 (TEM) (0.018 s/cc based on 1500-liter sample volume)	Contractual & mandatory	• Perimeter action level for industry standard • Clearance standard for abatement larger than small scale, short duration, but ≤160 SF or ≤260 LF. TEM clearance criterion; if failed, then compare against ambient level outside of work area. Originated from AHERA[5] regulations

1. California Department of Industrial Relations, Division of Occupational Safety and Health, 8 CCR 1529.
2. National Institute of Occupational Safety and Health
3. American Conference of Governmental Industrial Hygienists, 2015-16
4. California Proposition 65
5. Asbestos Hazard Emergency Response Act (AHERA); 40 CFR Part 763

4.0 RESULTS

The field data sheets, laboratory reports, daily reports, clearance notices, etc. are included herein as Attachments B through E. Note that the Waste Manifests were reviewed and signed by SCA on behalf of County of San Mateo. Copies are included in Attachment K for reference.

Additional Sampling for Asbestos
Prior to the commencement of abatement, SCA took a bulk sample of the brick and mortar associated with the fireplace that had been assumed asbestos-containing. In addition, SCA collected a sample of the discovered TSI present in the basement and first floor levels. Sampled materials were analyzed for asbestos by Polarized Light Microscopy (PLM).

The following is a summary table of materials analyzed by PLM and their corresponding results.

Additional Sampling Results

Sample I.D.	Date Collected	PLM Result	Comments
BRICK-100-1	4/18/16	None detected	White painted red brick with grey mortar on fireplace brick mantle
3701-PIDHW-0422-1	4/22/16	25% CH 10% AM	White piping insulation on basement piping above the plaster ceiling in laundry room

CH=chyrsotile AM=amosite

Perimeter Air Analysis
Thirteen (13) perimeter samples were collected daily throughout the duration of asbestos removal activities within the building. All results were below the project action level of 0.01 f/cc. The sample locations are shown on the field data sheets in Appendix B with laboratory reports and chain-of-custody forms included.

Below is a table including all of the perimeter air sample results from the project:

Perimeter Air Sampling Results

Sample I. D.	Date	Location	PCM Result (f/cc)	Comments:
3701-1F-0418	4/18/16	First Floor Interior	<0.007	Passed, below the project standard of 0.01 f/cc
3701-B-0418		Basement Interior	<0.007	
3701-1F-0419	4/19/16	First Floor Interior	<0.003	
3701-B-0419		Basement Interior	0.004	
3701-1F-0420	4/20/16	First Floor Interior	<0.004	
3701-B-0420		Basement Interior	<0.003	
3701-1F-0421	4/21/16	First Floor Interior	0.008	
3701-B-0421		Basement Interior	0.006	
3701-1F-0422	4/22/16	First Floor Interior	0.009	
3701-1F-0511	5/11/16	First Floor Interior	<0.005	
3701-B-0511		Basement Interior	<0.005	
3701-1F-0512	5/12/16	First Floor Interior	<0.004	
3701-B-0512		Basement Interior	0.008	

Fenceline Air Analysis
Twenty-four (24) fenceline samples were collected daily throughout the extent of asphalt abatement. These samples were collected at the four fencelines surrounding the asphalt removal work area. All

samples were analyzed by PCM analysis, while the downwind and sample closest to the removal work were analyzed by TEM as well. All results were below the PCM action level of 0.01 f/cc with the exception of two samples. Synergy re-cleaned the areas around the fenceline samples showing more than 0.01 f/cc because they were located at the building entrance. These samples with elevated results were reanalyzed by TEM; such TEM results were well below the TEM action level of 0.018 str/cc. SCA instructed Synergy to more thoroughly decontaminate their personnel when leaving the work area and to prevent generating any dust from non-asbestos soil when moving dumpsters in order to prevent elevated PCM results.

Results are summarized in the following table:

Fenceline Air Sampling Results During Asphalt Abatement

Sample I. D.	Date	Location	PCM Result (f/cc)	TEM Result (str/cc)	Comments:
3701-S-0420	4/20/16	South Fenceline	<0.003	NA	Passed, below the project standard of 0.01 f/cc and 0.018 str/cc
3701-E-0420		East Fenceline	<0.003	NA	
3701-N-0420		North Fenceline	<0.003	<0.0048	
3701-W-0420		West Fenceline	0.004	<0.0048	
3701-S-0422	4/22/16	South Fenceline	<0.002	NA	
3701-E-0422		East Fenceline	<0.002	NA	
3701-N-0422		North Fenceline	<0.002	<0.0048	
3701-W-0422		West Fenceline	0.007	<0.0048	
3701-S-0425	4/25/16	South Fenceline	<0.003	<0.0048	
3701-E-0425		East Fenceline	<0.003	NA	
3701-N-0425		North Fenceline	<0.003	<0.0047	
3701-W-0425		West Fenceline	0.005	NA	
3701-S-0426	4/26/16	South Fenceline	<0.003	NA	
3701-E-0426		East Fenceline	<0.003	<0.0049	
3701-N-0426		North Fenceline	<0.003	<0.0047	
3701-W-0426		West Fenceline	0.062	0.0099	Exceeded the 0.01 f/cc project standard, but below the 0.018 str/cc project standard
3701-S-0427	4/27/16	South Fenceline	<0.003	NA	Passed, below the project standard of 0.01 f/cc and 0.018 str/cc
3701-E-0427		East Fenceline	<0.003	NA	
3701-N-0427		North Fenceline	<0.003	NA	
3701-W-0427		West Fenceline	0.016	<0.0048	Exceeded the 0.01 f/cc project standard, but below the 0.018 str/cc project standard
3701-S-0427	4/28/16	South Fenceline	<0.003	NA	Passed, below the project standard of 0.01 f/cc
3701-E-0427		East Fenceline	<0.002	NA	
3701-N-0427		North Fenceline	<0.002	NA	
3701-W-0427		West Fenceline	0.003	NA	

Clearance Inspections and Testing

After the removal of all designated TSI inside of the work area containments, SCA visually inspected the work areas and collected aggressive clearance air samples. The clearance standard for aggressive clearance air sampling results was 0.018 structures per cubic centimeter (str/cc)

Aggressive clearance results are summarized in the following table:

Aggressive Clearance Air Sampling Results

Sample I.D.	Date	Zone	Average TEM Clearance Results (str./ cc)	Comments
3701-Crawl-IN-N-0422 3701-Crawl-IN-W-0422 3701-Crawl-IN-E-0422	4/22/16	Crawlspace	<0.0042 <0.0042 <0.0042	Passed, average concentration below 0.018 str/cc clearance standard.
3701-IN-N-0513 3701-IN-W-0513 3701-IN-E-0513 3701-IN-S-0513 3701-IN-C-0513	5/13/16	Basement	<0.0042 0.017 <0.0042 <0.0042 <0.0042	

5.0 DISCUSSION AND CONCLUSIONS

The asbestos abatement activities occurred with minimal impact on their vicinity, and were conducted compliance with contract specifications and regulatory requirements. All work was completed within the negatively pressurized containments. SCA verified proper handling and disposal of asbestos wastes so as to minimize exposures to the hazardous materials by the workers and surrounding building occupants. Worker exposures for asbestos were kept below the permissible exposure limits and all affected workers wore adequate personal protection.

5.1 REMAINING HAZARDOUS MATERIALS

The abatement activities throughout Serenity House removed all asbestos-containing materials within the building except for the following:

1. off-white paint/resinous material coating (+) over gray concrete (-) perimeter foundation on southwest, south and southeast sides of building (below dining, kitchen and living room)
2. Buried asbestos-cement (transite) utility lines and piping

As a detailed inventory of paints was not performed for the project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all remaining coated surfaces shall be considered to contain some lead.

SCA has updated its previously prepared Materials Matrix Report (MMR) for the building which summarizes hazardous materials known to remain at the facility. A copy of the document is included in Attachment P.

Attachment A

Abatement Work Plan

Attachment B

Perimeter Air Sampling Data Sheets and Laboratory Reports

Attachment C

Clearance Air Sampling Data Sheets and Laboratory Reports

Attachment D

Fenceline Air Sampling Data Sheets and Laboratory Reports

Attachment E

Daily Reports and Clearance Forms

Attachment F

Worker Documentation, Sign-In Logs and Personal Air Sample Results

Worker Documentation

Sign in Logs

Personal Air Sampling Results

Attachment G

Negative Pressure Records

Attachment H

SCA's Personnel Certificates

Attachment I

Cal/OSHA Notifications
BAAQMD Notifications

Attachment J

Contractor's SCLB License and Asbestos Registration

Attachment K

Waste Manifests & Waste Disposal Information

Attachment L

Material Safety Data Sheets

Attachment M

Additional Bulk Sampling Laboratory Reports

Attachment N

Daily Logs

Attachment O

DOP Test Certificates

Attachment P

Updated Materials Matrix Report