City of Lafayette
Lafayette Community Center Restroom Renovation
500 St Mary's Rd.
Lafayette, CA 94549
PROJECT NO. 012-9180

ADDENDUM NO. 3

The following clarifications, additions, and deletions shall become a part of the plans and specifications for the above project, and shall be bound by the General Conditions, Technical Specifications, and all other conditions of the Bid Documents.

PROJECT SPECIFICATIONS

The city has completed a hazardous materials survey of the existing facility to be renovated. Reports show the presence of asbestos and lead-containing materials that must be abated in accordance with prevailing law.

1. Section 01 11 00, "Summary of Work," Part 1, Paragraph 1.02, "Work Covered by Contract Documents," is hereby amended to include the abatement of hazardous materials prior to renovation of the existing facility.

2. Section 01 11 00, Part 1, Paragraph 1.04, "Work Sequence," is hereby amended to include abatement of hazardous materials prior to renovation of the existing facility.

3. Section 02 41 16.12, "Hazardous Materials Abatement," including laboratory reports attached thereto, is hereby incorporated into the Project specifications.

CITY OF LAFAYETTE

Date: June 15, 2021

john warshaw
_____
John Warshaw, Supervisor
Parks, Trails, and Recreation Dept.

LAFAYETTE COMMUNITY CENTER RESTROOMS RENOVATION
500 ST. MARYS ROAD
LAFAYETTE, CA 94549

PROJECT NO. 012-9180

SECTION 02 41 16.12 HAZARDOUS MATERIALS ABATEMENT

PART 1 – GENERAL

1.1 SUMMARY

A. The general scope of work includes the removal and disposal of known asbestos and lead containing building materials as well as lighting fixtures that may contain mercury in the tubes and PCBs in the ballasts.

B. Painted and glazed materials have been determined to contain lead in concentrations to 5,000 parts per million (ppm), which constitutes a lead-based product. Any demolition work impacting painted or glazed materials must be conducted according to the OSHA Lead in Construction standard 8 CCR 1532.1.

C. The Contractor is responsible for conducting a thorough site visit and for reviewing the entire set of bid package documents in order to ascertain the complete scope of the renovation work as it pertains to the hazardous materials abatement requirements.

D. This document includes minimum requirements for hazardous materials handling, control, and abatement activities, as applicable, including, but not limited to:

1. Handling and disposal of asbestos-containing building materials (ACBM).
2. Removal and disposal of existing ballasts containing PCBs.
3. Handling, disposal or recycling of mercury-containing lamps.
4. Handling and disposal of lead-based materials.
5. Criteria for clearance.

1.2 COMPLIANCE AND INTENT

A. This project involves the abatement of hazardous materials within the two (2) restrooms and the adjacent janitorial/storage room. During all work, provide monitoring and worker protective equipment in accordance with the California Occupational Safety and Health Administration (Cal-OSHA) and as required by this specification. Where there is conflict, the most stringent requirement shall apply.

B. All hazardous materials that are scheduled to be impacted shall be removed and disposed of according to all federal, state and local regulations. The Contractor shall determine if additional hazardous materials will be impacted by the scope of the abatement work. Contractor shall anticipate that the cleanup of any incidental asbestos found in areas undergoing abatement of asbestos containing materials that become separated from the building during the dismantling process are part of the hazardous materials work.

C. The abatement workers shall receive EPA-accredited training and be certified for asbestos abatement work. Any contractors involved in the demolition or preparation of painted or varnished surfaces shall conduct all work in accordance with DOSH's lead construction standard, Title 8 CCR 1532.1. All workers handling other hazardous chemicals shall have received the proper Hazardous Waste Operations Training per CCR 5194 and 29 CFR 1910.120.

D. Furnish all labor, materials, facilities, equipment, services, employee training, medical monitoring, permits and agreements necessary to perform the work required for hazardous materials abatement in accordance with this specification.

E. Comply with all federal, state, and local regulations pertaining to hazardous materials removal, storage, transportation and disposal; employee heath and safety; Contractor certifications; hazardous materials certifications; and all licenses, permits, and training.

F. Hazardous materials work on the premises shall be confined to the stated work areas. Materials and equipment shall be stored within areas designated by the Owner. Should additional space be required, the Contractor shall request permission for additional space and shall adequately safeguard occupants from associated health and safety hazards.

G. Perform all work specified herein with competent persons trained, knowledgeable and qualified in state-of-the-art techniques relating to hazardous materials abatement, handling, and the subsequent cleaning of contaminated areas.

H. During removal activities, the Contractor shall protect against contamination of soil, water, plant life, and adjacent building areas, and shall ensure that there is no airborne release of hazardous materials and dusts. The Owner may collect air in the building and in adjacent areas to evaluate the Contractor's performance. Evidence of settled dust or airborne levels of contaminants above background will require the implementation of additional controls at no increase to contract price.

I. This section provides appropriate protocols for handling and disposal of hazardous materials. All hazardous materials shall be removed according to the procedures outlined in this specification. If additional suspect hazardous materials are discovered during the course of the abatement work, immediately notify the Owner and/or the Environmental Consultant.

J. The work of this section shall be performed by an entity that holds a current, valid asbestos handling license issued by the California State Contractor's Licensing Board (SCLB) and a current valid Certificate of Registration for Asbestos-Related Work issued by the California Department of Industrial Relations-Division of Occupational Safety and Health (Cal-OSHA), unless otherwise specified. Display copies of CSLB license and Cal-OSHA Certificates in a visible place at the job-site.

K. Hazardous materials removed during the abatement activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Appropriate waste manifests or letters of salvage shall be furnished to the Owner thereby limiting the Owner's liability for improperly salvaged items. Materials are conveyed to the Contractor "as is," without any warranty, expressed or implied, including but not limited to, any warranty to marketability or fitness for a particular purpose, or any purpose. The Owner or the Owner's Consultant shall approve the non-ACM hazardous waste disposal site(s) prior to disposal for materials that may be disposed of in that manner.

L. All abatement work shall be conducted using a negative pressure enclosure and decontamination unit(s) unless otherwise specified.

1.3 SCOPE OF WORK

A. ASBESTOS-CONTAINING MATERIALS:

1. The drywall taping compound in the restrooms and janitorial/storage room contains 3% chrysotile asbestos and <1% as a composite system. The point count result is pending.

    a. The drywall in the restrooms is scheduled to be fully removed from all locations where it is present including behind ceramic wall tiles and mirrors.

    b. The drywall in the janitorial/storage room is scheduled for partial removal along a portion of the wall adjoining the restroom only.

    c. The Contractor is responsible for field verifying locations and quantities of these materials prior to commencing with any abatement work.

2. The California Business and Professions Code (Section 341.6 et al) require asbestos registration for removal of ACCM exceeding 100 SF annually. In addition, the Cal/OSHA requirements include, but are not limited to, storage of the waste in leak tight containers and proper labeling of the waste.

B. LEAD-CONTAINING MATERIALS:

1. The paint on the five (5) doors scheduled for demolition contains lead in concentrations to 3,000 parts per million (ppm). The doors must be further waste characterized by the Contractor prior to disposal in order to determine the proper waste classification.

2. The 4" white ceramic wall tile in both restrooms contains lead in concentrations to 5,600 ppm. Due to the concentration of lead, the material must be disposed of as a hazardous waste.

3. The Contractor is responsible for conformance with all applicable regulations, including, but not limited to, CAL/OSHA Worker Protection, CAL/EPA Environmental Protection requirements, and the Department of Health Services (DOHS).
4. The Contractor is responsible for proper handling, personnel monitoring, personnel protection, and disposal of lead containing construction debris.
5. The Contractor is responsible for determining the required testing protocols for lead-containing materials prior to disposal.
6. Contractor shall conduct personal monitoring and provide workers with appropriate personal protective equipment, if necessary. All work shall be conducted in a manner that does not release lead dust to the surrounding areas.

C. POLYCHLORINATED BIPHENYLS AND MERCURY:

1. Fluorescent light ballasts may contain PCBs. Remove and properly dispose of all light ballasts that are not specifically labeled “No PCBs”.
2. Fluorescent light tubes and thermostat switches contain mercury. Remove light tubes from all fixtures and switches from all thermostats. Package carefully for proper disposal or recycling.

1.4 DEFINITIONS

Abatement - Asbestos: Process of controlling fiber release from asbestos-containing materials, including encapsulation, enclosure, controlled renovation procedures, removal, clean up and disposal.

ACCM: Asbestos-containing construction materials with an asbestos content of >0.1%.

ACM: Asbestos-containing material.

Action Level - Lead: Employee exposure without regard to the use of respirators, to an airborne concentration of 30 micrograms per cubic meter of air (30 $\mu g/m^3$) calculated as an 8-hour time-weighted average (TWA).

Activity Class/Category - Lead: The designation assigned to work activities specified for removal of lead by pressure blasting, grinding, scraping, needle-gunning, chiseling, hammering, or wire brushing. Activity Classes I through III determine the minimum surveillance measures and exposure controls of the Contractor(s).

Aggressive Sampling: Refers to air sampling either during or following the agitation of the air.

AHERA: Asbestos Hazard Emergency Response Act (40 CFR Part 763).

Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and uncontaminated areas. Typically consists of two curtained or gasketed doorways separated by a distance of at least six feet such that one passes through one doorway into the airlock, allowing the doorway to close off the opening. This airlock must be maintained in uncontaminated condition at all times.

Ambient Air Quality: The quality of air (in terms of airborne fiber content) that is present in a given space.

Area Monitoring: Sampling of airborne asbestos fiber concentrations and/or airborne lead concentrations within the work area and outside the work area. Sampling shall represent airborne concentrations that may reach the breathing zone.

Asbestos Fibers: Refers to asbestos fibers having an aspect ratio of 3:1, and those fibers longer than five (5) micrometers.

Asbestos Permissible Exposure Limit (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter as measured by Phase Contrast Microscopy (PCM) analytical method.

Asbestos-Containing Material (ACM): Those manufactured products and construction materials including structural and mechanical building materials, as well as packings and gaskets that contain more than one percent (1.0 %) asbestos by weight.

Asbestos: Asbestos includes asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite) cummingtonite-gunerite (amosite), anthophylite, tremolite, and actinolite. For the purposes of determining worker respiratory protection, both the asbestiform and non-asbestiform of the above minerals, and any chemically treated or altered materials shall be considered as asbestos.

Authorized Visitor: Designated employees or consultants for the Owner and representatives of any federal, state and local regulatory or other agency having jurisdiction over the project.

B Reader: A radiologist skilled in evaluating X-rays of people exposed to asbestos.

Baseline: Refers to the background levels of asbestos monitored before abatement.

Breathing Zone: A hemisphere forward of the shoulders and head with a radius of approximately six to nine inches.

Breach: A rift or gap in the critical or secondary barriers that allow egress of air from the containment to outside, or vice versa.

Bridging Encapsulant: An encapsulant that forms a discrete layer on the surface of an in-situ asbestos matrix.

CAL/OSHA: State of California, Occupational Safety & Health Administration, enforcement arm of the California Department of Labor related to worker protection laws.

Chain-of-Custody: A legal concept involving documentation of the physical possession of a sample/samples from the moment it is collected, transported, analyzed, and ultimately stored in an archive.

Change Rooms: Refers to the two chambers in the decontamination area used to change into and out of protective clothing.

Certified Industrial Hygienist (CIH): A person certified by the American Board of Industrial Hygiene retained by contractor.

Clean Room: An uncontaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment.

Clearance Level: Clearance level for samples analyzed by Phase Contrast Microscopy (PCM) will be less than 0.01 fibers per cubic centimeter of air and for Transmission Electron Microscopy (TEM) will be less than 70 structures per square millimeter (< 70 s/mm^2). Samples may be collected by non-aggressive sampling methods and the minimum air volume shall be 1,200 liters.

Competent Person: One who is capable of identifying existing and predictable asbestos hazards and who has the authority to take prompt corrective measures to eliminate them.

Critical Barrier: A unit of temporary construction that provides the only separation between asbestos work area and an adjacent potential occupied space. This includes the decontamination unit, perimeter walls, ceilings, penetrations and any temporary critical barriers between the work area and the uncontaminated environment.

CSLB: Contractors State Licensing Board.

Decontamination Area: Area which is constructed to provide the means for workers to store clothing, equipment and other articles, and to properly remove asbestos contamination upon concluding work activities that result in exposure to these hazardous materials.

DHS: State Department of Health Services

DOP: Challenge aerosol used to perform on-site leak testing of HEPA filtration equipment. Formerly Dioctyl phthalate which has since been exchanged with a less toxic compound

DOT: Federal Department of Transportation

DOSH: Division of Occupational Safety & Health (Also see Cal-OSHA)

Decontamination Unit: Refers to system of airlocks used to decontaminate personnel, waste bags, equipment, etc. when exiting the work area. A decontamination unit shall be set up for each containment area.

Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Disposal Bag: Minimum six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from a work area to disposal or shipping container. Each disposal bag must have required labels according to 8 CCR 1529 (Cal-OSHA asbestos rule), 5194 (HAZCOM). RACM waste must be additionally labeled according to 49 CFR 171-179 (USDOT), and 40 CFR 61 Subpart M (NESHAP). Hazardous waste disposal bags must be labeled with generator's name, address, and site location and generator number.

DANGER

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER & LUNG DISEASE HAZARD

AVOID BREATHING AIRBORNE ASBESTOS

RQ WASTE ASBESTOS, 9 NA 2212 PG III

(Class 9 placard)

HAZARDOUS WASTE

STATE AND FEDERAL LAW

PROHIBITS IMPROPER DISPOSAL.

IF FOUND, CONTACT THE NEAREST

POLICE OR PUBLIC SAFETY

AUTHORITY OR THE CALIFORNIA

DEPARTMENT OF TOXIC SUBSTANCES AND CONTROL

Encapsulant: A liquid material that can be applied to asbestos-containing material that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging) or by penetrating into the material and binding its components together (penetrating encapsulant).

Encapsulation: A specified procedure necessary to coat asbestos-containing material or asbestos contaminated surfaces with an encapsulant to control the possible release of asbestos fibers into the ambient air.

Enclosure: The construction of an airtight, impermeable, permanent barrier surrounding the asbestos-containing material to prevent the release of asbestos fibers into the air.

Environmental Consultant: Certified Industrial Hygienist (CIH), Certified Asbestos Consultant (CAC), and/or Certified Site Surveillance technician retained by the Owner.

Equipment Decontamination Enclosure System: A decontamination enclosure system for materials and equipment, typically in a designated area of the work area, and including a washroom, a holding area, and an uncontaminated area.

Equipment Room: A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment. The equipment room shall be kept clean from asbestos-containing debris at all times.

Excursion Limit: A California Code of Regulations (8 CCR 1529) requirement that ensures no employee is exposed to airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

Fixed Object: A unit of equipment or furniture in the work area that cannot be removed from the work area.

EPA: Environmental Protection Agency.

Friable Asbestos-Containing Material: Material that contains more than 1.0% asbestos by weight, and that can be crumbled, pulverized or reduced to powder by hand pressure when dry.

Foreman: An individual who typically fulfills the duties of “competent person” as defined in Title 8 CCR 1529. This individual must supply documentation of a passing grade in an EPA accredited course in Practices and Procedures in Asbestos Control. The foreman must be on-site during all abatement work.

Glove bag: A polyethylene bag with two inward projecting long sleeve gloves, designed to enclose an object from which an asbestos-containing material is to be removed. Bags shall be seamless at the bottom, have a minimum thickness of 6 mil, and shall be labeled appropriately.

Glove bag Technique: A method for removing ACM from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Secondary containment shall be provided for all glove-bag work unless noted otherwise.

Gross or Full Abatement Area: Designated rooms, spaces, or areas of the project that have been totally sealed, contained in polyethylene, equipped with decontamination enclosure systems, and placed under negative pressure.

HEPA: High Efficiency Particulate Air filter capable of filtering out airborne particulate 0.3 microns or greater in diameter at 99.97 percent efficiency.

HEPA Filter Equipment: High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97 percent efficient at retaining fibers of 0.3 microns or larger.

HEPA Filter Vacuum Collection Equipment: High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

Lead: Toxic metallic element of atomic number 82, or any other materials, substances or compounds that may contain lead. Note for metal painted surfaces lead is often found in combination with chromates. For the purposes of this specification, lead also refers to lead-chromate paints.

Lead Hazardous Waste: Paint, sludge, debris or cleaning materials are to be treated as a hazardous waste if laboratory results indicate a lead (Pb) concentration of 5 milligrams per liter (mg/l) or greater using the EPA approved Toxicity Characteristic Leaching Procedure (TCLP) test. The waste will also be classified as hazardous waste if the Total Threshold Limit Concentration (TTLC) of measured lead is greater than 350 mg/kg or if the Soluble Threshold Limit Concentration (STLC) of measured lead is greater than or equal to 5 mg/l.

Movable Object: A unit of equipment or furniture in the work area that can be removed from the work area, (e.g., smoke detectors, lights).

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere, and negative during inhalation in relation to the air pressure of the outside atmosphere.

Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

NESHAP: National Emission Standard for Hazardous Air Pollutants - EPA Regulation 40 CFR Subpart M, Part 61.

NIOSH: National Institute for Occupational Safety and Health: (Research Institute within Federal OSHA). Sets test standards, analytical methods, and certify performance of various respirator designs.

NIST: National Institute of Standards and Technology: Administers the NVLAP Program.

NVLAP: National Voluntary Laboratory Accreditation Program: Evaluates and certifies laboratories doing PLM and TEM analysis.

Owner: The City of Lafayette

Owner's Representative: RGA Environmental, Inc.

Passive Sampling: Refers to air sampling with no air agitation.

Penetrating Encapsulant: An encapsulant absorbed by the in-situ asbestos matrix without leaving a discrete surface layer.

Permissible Exposure Limits (PELs) - Asbestos: A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. Represents the 8-hour time weighted average of 0.1 total fibers per cubic centimeter and 30 minute excursion limit of 1.0 fiber per cubic as measured by phase contrast microscopy (PCM).

Permissible Exposure Level (PEL) - Lead: An eight-hour time weighted average concentration of 50 micrograms of lead per cubic meter of air (50 $\mu g/m^3$).

Personal Monitoring: Sampling for asbestos and lead concentrations within the breathing zone of an employee.

Phase Contrast Microscopy (PCM): Phase contrast microscopy (PCM) is a technique using a light microscope equipped to provide enhanced contrast between the fibers and the background. Filters are cleared with a chemical solution and viewed through the microscope at a magnification of approximately 400X. This method does not distinguish between fiber types and only counts those fibers longer than 5 micrometers and wider than approximately 0.25 micrometers. Because of these limitations, fiber counts by PCM typically provide only an index of the total concentration of airborne asbestos in the environment monitored.

Polarized Light Microscopy (PLM): An optical microscopic technique used to identify asbestos content and distinguish between different types of asbestos fibers by their shape and unique optical properties.

Powered Air Purifying Respirator (PAPR): A full facepiece respirator that has the breathing air powered to the wearer after it has been purified through a filter.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Remodel: Replacement or improvement of an existing building or portion thereof where exposure to airborne asbestos may result. Remodel includes, but is not limited to, installation of materials, demolition, cutting, patching, and removal of building materials.

Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos containing materials than for in-situ encapsulation.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Soluble Threshold Limit Concentration (STLC): A material is considered as hazardous waste if laboratory test result indicate Soluble Threshold Limit Concentration of measured lead are greater than or equal to 5 milligrams per liter (mg/l).

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

TEM: Transmission Electron Microscopy: Asbestos structure analysis for a specified volume of air. TEM is a technique that focuses an electron beam onto a thin sample. As the beam transmits through certain areas of the sample, an image resulting from varying densities of the sample is projected onto a fluorescent screen. Transmission electron microscopy is the state-of-the-art analytical method for identifying asbestos fibers collected in air samples in non-industrial settings. Transmission electron microscopes equipped with selected area electron diffraction (SAED) capabilities also can provide information on the crystal structure of an individual particle.

Toxicity Characteristic Leaching Procedure (TCLP): Test developed by U.S. Environmental Protection Agency (USEPA) to simulate landfill conditions and the potential for a waste to leach hazardous materials (40 CFR 261 - Appendix 2).

Total Threshold Limit Concentration (TTLC): A material is considered as hazardous waste if laboratory test result indicate Total Threshold Limit Concentration of measured lead are greater than or equal to 350 milligrams per kilogram (mg/kg).

Visible Emissions: Any emission containing particulate material that is visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Visual Inspection: A visual inspection by Environmental Consultant, of the work area under adequate lighting to ensure that the work area is free of visible asbestos material, debris, and dust.

Washroom: A room between the work area and the holding area in the equipment decontamination enclosure system equipped with water for the decontamination of equipment and sealed waste containers. The washroom comprises one air lock.

Water Filtration: Refers to water filtration to as small a particulate size as technically feasible, but not more than 5 microns.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, HEPA vacuuming, or other cleaning utensils dampened with amended water or diluted removal encapsulant and afterward thoroughly decontaminated or disposed of as asbestos contaminated waste.

Work Area: The area where lead or hazardous material work or removal is performed and that is defined or

isolated to prevent the spread of lead or asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by Title 8 CCR 1529.

Zinc Protoporphyrin (ZPP) Test: Biological test for lead-exposure that measures the amount of zinc protoporphyrin in blood.

1.5 REFERENCES

A. The publications listed below form a part of this specification by reference. The publications are referred to in the text by basic designation only. If there is a conflict between any of the listed regulations or standards, then the most stringent or restrictive shall apply.

1. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ANSI Z9.2	1979 (R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
ANSI Z88.2 1992	Practices for Respiratory Protection
ANSI Z88.6	Respiratory Protection – Respirator Use Physical Qualifications for Personnel
ANSI Z41.1	Men's Safety Toe Footwear
ANSI Z86.1	Commodity Specification for Air
ANSI Z87.1	Practice for Occupational and Educational Eye and Face Protection
ANSI Z89.1	Requirements for Industrial Head Protection
ASTM C 732	1982 (R 1987) Aging Effects of Artificial Weathering on Latex Sealants
ASTM D 522	1993 (Rev. A) Mandrel Bend Test of Attached Organic Coatings
ASTM D 1331	Solutions of Surface-Active Agents
ASTM D 2794	1993 Resistance of Coatings to the Effects of Rapid Deformation (Impact)
ASTM E 84	1991 (Rev. A) Surface Burning Characteristics of Building Materials
ASTM E 96	1994 Water Vapor Transmission of Materials
ASTM E 119	1988 Fire Tests of Building Construction and Materials
ASTM E 736	1992 Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
ASTM E 1368	1990 Visual Inspection of Asbestos Abatement Projects

2. CALIFORNIA ASSEMBLY BILLS (CAB)

CAB 040	Yearly Registration of Contractors

3. CALIFORNIA CODE OF REGULATIONS (CCR)

8 CCR 5208	General Industry - Asbestos
Title 17 Division 1, Chapter 8	Accreditation, Certification, and Work Practices in Lead-Related Construction
CCR CARS	Carcinogen and Asbestos Registration Sections 340-344.53, 341.6 Amended, and 341.9 Amended Through 341.14;

	Employer registration when disturbing more than one hundred square feet (100 SF) of ACCM
CCR CSO	Construction Safety Orders, Chapter 4, Subchapter 4
CCR ESO	Electrical Safety Orders, Chapter 4, Subchapter 5
8 CCR 1529	Asbestos Stand for Construction Industry
8 CCR 1532.1	Lead in Construction
8 CCR 3203	Accident Prevention Program
8 CCR 3204	Access to Employee Exposure and Medical Records
8 CCR 3220	Emergency Action Plan
8 CCR 3221	Fire Prevention Plan
8 CCR 5144	Respiratory Protection Equipment Standard
8 CCR 5194	Hazard Communication Standard
8 CCR 5209	Carcinogen Regulation
8 CCR 6003	Accident Prevention Signs

4. CALIFORNIA HEALTH SERVICES (CHS) TITLES 22 AND 23, CALIFORNIA ADMINISTRATIVE CODE DISPOSAL REQUIREMENTS

CHS 25123	Section 25123
CHS 25124	Section 25124
CHS 25143	Section 25143
CHS 25163	Section 25163
CHS 66508	Section 66508
CHS 66510	Section 66510
CHS DIV 4	Division 4, Commencing with Section 66000, “Disposal”

5. CALIFORNIA HEALTH AND SAFETY CODE (CHSC)

CHSC 20	Division 20, Commencing with Section 24200

6. CALIFORNIA LABOR CODE (CLC)

CLC DIVISION 5	Part 1, commencing with 6300

7. CALIFORNIA PROPOSITIONS (CP)

CP 65	Proposition 65

8. CALIFORNIA STATE BOARD OF EQUALIZATION (CSBE)

CSBE ETU	Excise Tax Unit

9. CALIFORNIA STATE LICENSE BOARD (CSLB)

CSLB CBPC	California Business and Professional Code Sections 7058.5 and 7058.7, “Certification”

10. CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.134	Respiratory Protection
29 CFR 1910.141	Sanitation
29 CFR 1910.145	Accident Prevention Signs and Tags

29 CFR 1926.21	Safety Training and Education
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.62	Lead Exposure in Construction
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.103	Respiratory Protection
29 CFR 1926.59	Hazard Communication
29CFR 1910.1000	Air Contaminants
29 CFR 1926.1101	Asbestos
40 CFR 61-SUBPART A	General Provisions
40 CFR 61-SUBPART M	National Emission Standard for Asbestos
49 CFR 172	Hazardous Materials Tables and Hazardous Materials Communications Regulations
40 CFR 260	Hazardous Waste Management Systems: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Generators of Hazardous Waste
40 CFR 263	Transporters of Hazardous Waste
40 CFR 264	Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 745	Lead; Requirements for Lead-Based Paint Activities
40 CFR 763	Asbestos Containing Material in Schools
49 CFR 178	Shipping Container Specifications

11. STATE AND LOCAL REGULATIONS

Regulation 11, Rule 2	Bay Area Air Quality Management District

12. U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing

13. UNDERWRITERS LABORATORIES INC. (UL)

UL 586	1990 High-Efficiency Particulate Air

14. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

Standard 10	Fire Extinguishers
Standard 70	National Electric Code
Standard 701	Small Scale Fire Test for Flame Resistant Textiles and Films

1.6 SUBMITTALS

A. The following items shall be submitted to, and approved by, the Owner or the Owner's representative before commencing work involving the hazardous materials outlined in these specifications.

B. Detailed work plan that includes water and electrical power supply at the site, wastewater discharge from inside the work area; construction, location and number of containments and decontamination units; etc. Schedule showing milestone dates for activities such as mobilization, work area preparation, ACM removal, ACM waste load-out, final clearance evaluations, completion dates, etc. Also, submit variances received from regulatory agencies as applicable.

C. Provide a site safety plan prior to project initiation. The site safety plan shall deal with, at a minimum:

1. Personal protective equipment;
2. Site safety and health hazards;
3. Fiber release incidents;
4. Control of water leakage or discharge within and/or from the work area;
5. Medical emergency;
6. Asbestos, lead, PCB, and mercury handling procedures;
7. Contractor's internal administrative and inspection procedures;
8. Earthquakes and/or fire emergency procedures;
9. Protocol for responding to complaints or questions from interested parties;
10. 24-Hour emergency telephone numbers for Company Officers with authority to respond to emergencies.

D. Competent Person (as defined by Title 8 CCR 1529): Demonstrate education and specialized training with successful completion of examination of an EPA approved asbestos and DHS accredited training courses.

E. Workers:

1. Demonstrate education and specialized training with successful completion of EPA approved and DHS accredited training courses.
2. Submit most current certificates (less than 11 months) signed by each employee and trainer that the employee has received proper training in the handling of materials that contain asbestos and lead. Certificate information must include documentation showing that the worker understands the following; health implications and risks involved (including the illnesses possible from exposure to airborne asbestos fibers and lead), the use and limits of the respiratory equipment to be used, and the results of monitoring of airborne quantities of asbestos and lead concerning health and respiratory equipment.
3. Proof of Respirator Fit Testing: Provide proof of respirator fit testing. Fit testing records must be less than eleven (11) months old and document testing on the type of respiratory protective equipment used for this project. The Competent Person must sign fit testing records.
4. Foreman Training: Submit evidence that the foreman to be used on the job fulfills the qualifications detailed in this specification and has experience in similar jobs.
5. Medical Examinations: Submit evidence signed by a physician that each employee used on the job has received an appropriate medical examination as detailed in Title 8 CCR 1529 and 1532.1. The submitted document must be less than eleven months old.

F. Written Notification to Fire and Police Departments: Provide documentation showing notification to local fire and police departments of the abatement three (3) days before commencement.

G. Certificates of Compliance: Submit manufacturer's certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2.Hazardous Waste:

1. Hazardous waste must be tested (TTLC/STLC/TCLP) and categorized for purposes of disposal. The Contractor shall submit written evidence of approved testing (including copy of the actual chain-of-custody forms) and disposal of hazardous wastes within five (5) days following the completion of each phase of the project.

2. Submit written evidence that the landfill(s) for disposal are approved for asbestos, lead, PCB, mercury, and any other hazardous materials disposal by the USEPA and state or local regulatory agency(s). Submit uniform hazardous waste manifests prepared, signed and dated by an agent of the landfill. The manifest must certify the amount of hazardous materials delivered to the landfill. The manifest must be provided to the Owner's Consultant within ten working days after delivery. If the mercury-containing light tubes will be recycled, submit written evidence that the facility is approved for this operation.

H. Satisfactory proof that written notification has been provided to the Bay Area Air Quality Management District, in accordance with Title 40 CFR Part 61 Subparts A&M, National Emission Standards for hazardous Air Pollutant, U.S. EPA.

I. Licenses: Submit copies of state and local licenses, evidence of Cal-OSHA registration and permits necessary to carry out the work of this contract.

J. Notification of Other Contractors: If other contractors are working at the job site, before beginning any work the Contractor must inform all other contractors in writing. The Contractor must provide copies to the Owner's Consultant about the location, nature, and requirements of the work areas.

K. Material Safety Data Sheets/Specification Sheets: The Contractor shall submit Material Safety Data and Specification Sheets for all chemicals, encapsulants, etc. to be used for this project.

L. Rental Equipment: When rental equipment is to be used in the abatement areas or to transport hazardous waste, the Contractor shall provide written notification regarding intended use of the rental equipment to the rental agency before use, with copies to the Owner's Consultant and the Owner's representative.

M. Submittals at the Completion of the Project - Upon completion of on-site work, Contractor shall provide a detailed project summary that will include each of the items listed below. The project Summary shall be submitted and approved by the Owner's representative prior to acceptance of final pay request and shall include the following:

1. Contractor to submit copies of the Security and Safety Logs showing names of persons entering the workspace. The logs shall include date and time of entry and exit, supervisor's record of any accident (detailed description of accident),
2. Emergency evacuations and any other safety or health incident
3. Waste manifests
4. Personal air sample results
5. Pressure differential strip chart readings for each differential recording device on the site.
6. Project Summary:
    a. Abatement contractor's name and address, certification number (CSLB), registration number (DOSH), and Tax ID;
    b. Hazardous waste hauler (DHS, DOT);
    c. Name, address, and registration number of hazardous waste hauler;
    d. Laboratory(ies) performing analysis (NIST/NVLAP);
    e. Contract number and name of project;
    f. Specific inventory (including exact locations) of the hazardous materials that were removed or handled. Using a tabular format, provide for each TYPE hazardous material, and approximate quantity;
    g. Number of employees working on the project;
    h. Date of commencement of on-site work;
    i. Date of completion of all on-site work;
    j. Work method applied; i.e., glove bag, mini-enclosure, full containment with negative air, decon, etc.; and
    k. Name, location, telephone number, and EPA registration of waste disposal site used.

7. DOP-equivalent testing results within seven (7) days for all HEPA filtered equipment.

1.7 ENVIRONMENTAL CONSULTANT/MONITORING TECHNICIAN

A. The Owner's Consultant will act as the Owner's liaison in technical matters involving the hazardous materials removal and disposal work.

B. The Owner's Consultant will only review submittals for general conformance with the abatement concept and general compliance with the information provided in the Bid Documents. Any action indicated during submittal review is subject to the requirements of the Specifications. The Contractor shall be responsible for dimensions and quantities that shall be confirmed at the job site.

C. The designated site representative of the Owner's Consultant is authorized by the Owner to have free access to all hazardous materials work areas, to assist in interpretation of procedures, and to advise on all provisions of the Contract Documents pertaining to the control of hazardous materials.

D. The Owner's Consultant will advise the Owner to stop the Contractor's work if, in the course of performing monitoring duties, the Consultant observes an instance of substantial non-conformance with the Contract Documents and/or situations presenting health hazards to workers. Work shall not resume until the corrective measures have been enforced. Instances of substantial non-conformance shall include, but not be limited to, the following:

1. Loss of negative pressurization;

2. Activities or misconduct imperiling worker's safety; and

2. Breaches in containment resulting in potential release of asbestos, lead, mercury and PCBs to non-work areas.

E. All hazardous materials abatement work shall be conducted using good work practices to prevent the release of fibers or dust outside the work area. If poor work practices are observed, the Owner's Consultant shall direct the Contractor to make the necessary corrections. Generally, airborne fiber concentrations measured by PCM inside the containment area exceeding 0.2 fibers/cc will be viewed as an indication of poor work practices unless the concentration is a direct result of design or external circumstances anticipated in the project specification.

F. If appropriate conditions are not made after two (2) warnings, or if an immediate threat exists that asbestos fibers, lead, mercury or PCBs could be released outside the work area, all abatement work will be stopped. The decision to stop work shall be made jointly by the Owner's Consultant and the Owner.

G. The project clearance criteria of 0.01 f/cc shall not be exceeded outside the work area during abatement work. If the total fiber concentration exceeds either background or 0.01 f/cc, the Owner's Consultant is authorized to act in accordance with the above provisions to stop work. The Contractor shall perform any and all necessary corrective actions to reduce the fiber concentrations.

H. The Owner's Consultant may perform air sampling inside and outside the hazardous materials work area during all phases of the work. The Contractor shall cooperate fully with the Consultant and ensure the cooperation of his workers during collection of air samples and work area inspections.

I. When visual inspections or air monitoring are specified, the Contractor shall notify the Owner and the Owner's Consultant in writing 24 hours in advance of the day and time when the Contractor will be ready for such inspections or monitoring. The Contractor's Competent Person or Foreman indicating that the zone has been previously inspected and is ready for inspection/testing shall initiate such requests.

J. The Environmental Consultant's role in advising the Owner regarding environmental health matters does not relieve the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the federal, state, or local governments. Air monitoring results generated by the Owner's Consultant shall not be used by the Contractor to represent compliance with regulatory agency requirements for monitoring of workers exposure to airborne asbestos, nor shall any other activity on the part of the Owner's Consultant represent the Contractor's compliance with applicable health and safety regulations.

1.8 QUALITY ASSURANCE

A. Qualifications:

1. Asbestos Abatement Work: Only qualified persons shall engage in asbestos abatement activities. Work involving asbestos-containing materials exceeding 100 square feet (SF) or 100 linear feet (LF) shall be completed by a Contractor holding a valid asbestos handling license issued by the California State Contractors Licensing Board (SCLB) and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA). Work shall be completed under the on-site supervision of a Competent Person as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California). All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit test of appropriate respirators.

B. Regulatory Requirements: The Contractor shall be alerted to and familiar with the following laws and regulations regarding the hazards, control measures, management, characterizing, transport and disposal of hazardous wastes:

1. Asbestos Abatement Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for asbestos abatement and disposal of waste shall be in accordance with these Specifications and the most current regulations, including but not limited to:

a. Environmental Protection Agency NESHAP and AHERA regulations (40 CFR Part 763, as applicable).

b. Occupational Safety and Health Administration (inclusive of OSHA 29 CFR 1926.1101)

c. California Department of Occupational Safety and Health (inclusive of Cal/OSHA 8 CCR 1529)

d. California Environmental Protection Agency (Cal/EPA).

e. Bay Area Air Quality Management District (BAAQMD), Regulation 11, Rule 2.

f. Other applicable federal, state, and local governmental regulations pertaining to asbestos-containing materials (ACM) and asbestos waste.

PART 2 - PRODUCTS

2.1 SIGNS AND LABELS:

A. Provide labeling in accordance with U.S. EPA requirements. Provide the required signs, labels, warnings, or posted instructions for containers used to transport hazardous material to the landfill.

B. Location of Caution Signs and Labels: Provide bilingual caution signs at all approaches to work areas in languages used by the Contractor’s employees. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos, lead, PCBs, and mercury-containing materials, scrap, waste, debris, and other products contaminated with hazardous materials.

C. Warning Sign Format: Vertical format conforming to Title 8 CCR 1529:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

D. Warning Label Format: Provide labels that comply with Title 8 CCR 1529 of sufficient size to be clearly legible, displaying the following legend:

DANGER

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

E. Warning Sign Format: Vertical format conforming to Title 8 CCR 1532.1:

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

F. Wherever the treatment process is reasonably expected to impact any lead-containing substances:

1. Post a sign 14” by 14” that includes the phrase, “Caution Lead Hazard. Keep Out” in bold lettering at least 2” inches high.
2. Postings shall be in English and Spanish, and in any language used by any of the Contractor’s employees as the primary language of communication.

2.2 ENCAPSULANTS:

A. Encapsulants shall be U.L. Listed, in full-scale E-119 fire test.

B. Average depth of penetration shall meet manufacturer’s recommendations.

C. Dry mil thickness of bridging encapsulating systems (if used) shall be as indicated in the specific treatment instructions included in this specification, and as recommended by the manufacturer.

D. Performance Requirements: Classification - penetrating encapsulant; spray applied and brushable. Product shall be tested and listed by EPA and possess the following characteristics:

1. Impact Resistance- minimum 60 inches-lbs; (Batelle Standard).
2. Fire hazard classification ratings:
    a. Flame resistance/flame spread ~25 (ASTM E162) V6
    b. Fire classification - UL Class A approved in the specific or similar assembly to its intended application.
3. Product shall be tested and rated non-toxic and non-irritating under the Federal Hazardous Substances Control Act and contain no methylene chloride.
4. Product shall have been successfully applied in similar applications.
5. Material shall be tinted sufficiently to provide a readable contrast to background color to which it is applied.

2.3 PLASTIC SHEETING:

A. Use fire-retardant (FR) polyethylene (poly) film manufactured by PolyAmerica, Grand Prairie, Texas 75051, or equal.

1. Thickness - 6-mil, minimum, NO EXCEPTIONS.
2. Flame Resistance/Flame Spread Rate <25.
3. Conforms to NFPA #701 and Tested in accordance with ASTM E-84.

B. Spray adhesive for sealing polyethylene to polyethylene shall contain no methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.

2.4 TAPE:

A. Tape, 2” or wider, shall be capable of sealing joints of adjacent sheet of polyethylene and shall attach polyethylene sheet to finished or unfinished surfaces or similar materials. Tape shall be capable of adhering under dry and wet conditions, including use of amended water. Taping to critical or sensitive surfaces shall be completed using preservation sealing tape, such as 3M Scotch Brand No. 4811 Preservation Tape; or 3M Scotch Branch No. 472 Plastic Film Tape or approved equal.

2.5 STRIP CHART RECORDER(S):

A. Each containment shall have a minimum differential pressure of -0.03 inches water gage at all times. Fluctuations below -0.025 inches of water column are unacceptable and may require temporary cessation of work until conditions are corrected.

B. Continuous circular or strip chart recorder(s) shall be used to document the level of pressure difference between the containment space and all other spaces as deemed necessary by the Environmental Consultant. Defective or non-operating instrumentation may require temporary cessation of work until instrumentation is repaired or replaced.

C. Differential air pressure systems shall be in accordance with Appendix J of EPA’s “Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA 560/5-85-024. The Differential pressure system shall be continuously monitored by the Contractor using a recording instrument equal to a Dwyer Instrument Co.’s “ Photohelic Gauge” connected to an appropriate recorder. The recording instrument shall be connected to an audible alarm that will activate at a pressure differential of -0.03 inches water gauge air pressure.

D. The chart recorder will be checked a minimum of four times per day by a person familiar with the operation. Each check shall be documented on the circular chart with a time and date notation and the initials of the person performing the check. A copy of the circular chart shall be submitted daily to the Consultant.

E. Air, which is exhausted to maintain negative pressure, shall be exhausted from the building at locations, approved by the Environmental Consultant. Exhausted air shall not be near or adjacent to other building intake vents or louvers or at entrances to buildings. The Contractor shall provide on-site independent DOP testing to document the effectiveness of the air filtration units. The test results shall be signed by the individual performing the testing. Repeat testing if the unit or the air filtration units have been repaired or replaced.

2.6 VACUUM EQUIPMENT:

A. All vacuum equipment used in the work area shall use HEPA filtration systems and be of the wet-dry type. The Contractor shall provide independent DOP-equivalent testing to document the effectiveness of the vacuum units. The test results shall be signed by the individual performing the testing.

2.7 LOCAL EXHAUST SYSTEM:

A. Sufficient High Efficiency Particulate Absolute (HEPA) ventilation units shall be used to maintain the negative pressure in each interior work area at -0.03 inches of water column. These exhaust systems shall be in accordance with ANSI and the HEPA unit shall bear a UL 586 label. The ventilation system shall remain in operation 24 hours a day, until clearance of the containment is achieved. HEPA-filtered air necessary to maintain pressure differential shall be vented to non-contaminated areas outside the building. Other HEPA units shall operate within the enclosure to circulate air and control fiber counts. All HEPA units shall be fitted as follows:

1. A two-stage pre-filter as follows: 100-micron low efficiency filter and a second stage medium prefilter for particle sizes down to 5 microns;

2. Lapse time meter showing accumulated hours of operation;

3. Electrical interlock preventing the operation of the unit without a HEPA filter;

4. Audible alarm and automatic shutdown system in the event of filter rupture or blockage of the discharge

5. Warning lights that indicate the status of the HEPA unit;

6. HEPA systems must provide sufficient exhaust air to maintain a negative pressure of 0.03 inches of water.

2.8 HOURS OF OPERATION FOR HEPA FILTRATION UNITS:

A. The ventilation system shall remain in operation 24 hours a day until the work area has passed the specified clearance criteria. HEPA filtered air necessary to maintain pressure differential shall be vented to non-contaminated areas outside the building. Other HEPA units shall operate within the enclosure to circulate air and control fiber counts.

2.9 RESERVE EQUIPMENT:

A. Contractor to have the following equipment on site: two reserve, functioning and DOP-tested HEPA Filter Vacuum Cleaning Units, two reserve and DOP-tested HEPA area filtration units, and sufficient polyethylene (poly), respirators, protective equipment, tape, tools, decontamination units, etc.

B. Provide authorized visitors, Owner, Consultants or other contractors requiring access to the work area with suitable protective clothing, headgear, eye protection, as described in this specification, whenever the visitor must enter the work area. The Contractor shall have available and maintain at all times a minimum of three (3) suits and other suitable protective equipment for this purpose. All protective equipment shall be new and for the exclusive use of visitors.

C. The Contractor shall document that each visitor has been trained and fit-tested prior to entering an abatement area.

2.10 SCAFFOLDING:

A Scaffolding, as required to do the specified work, shall meet all applicable safety regulations and DOSH standards. A non-skid surface shall be furnished on all scaffold surfaces subject to foot traffic.

2.11 TRANSPORTATION EQUIPMENT:

A. Transportation equipment, as required, shall be lockable and suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. Any vehicle used to transport asbestos waste shall be properly registered with all applicable controlling agencies.

2.12 CONNECTIONS TO WATER SUPPLY:

A. Contractor shall assure that all connections to the site's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water shall not damage existing finishes or equipment.

B. Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system in each work area. Provide fittings as required to allow for connection to existing wall hydrants or spouts.

2.13 OTHER TOOLS AND EQUIPMENT:

A. The Contractor shall provide other suitable tools for the stripping, removal and disposal activities. Tools shall include: hand-held scrapers, plastic brushes, sponges, rounded edge shovels, brooms, polyethylene, carts, etc. All tools shall be inspected for contamination by the Owner's Consultant prior to use. Equipment not inspected by the Owner's Consultant or contaminated equipment shall be removed from the site immediately. The Contractor shall bear the cost of any clean-up, laboratory costs and Environmental Consultant's time associated with any clearance work resulting from the use of contaminated tools and equipment.

B. All other materials not specifically described herein but required shall be provided by the Contractor subject to the approval of the Environmental Consultant.

C. Prohibited Equipment: The following equipment is prohibited from use on this project unless accepted in writing by the Environmental Consultant:

1. High or low-pressure water blasting equipment for hosing of work areas.

2. Vacuum-powered removal or collection equipment located outside the asbestos work area, such as a "Vacu-Loader".

3. Gasoline, propane, diesel or other fuel powered equipment inside the building, unless previously approved in writing by the Owner and the Environmental Consultant.

4. Equipment that creates excessive noise or vibration that would affect the safety of the building or generate complaints from neighboring building occupants. No equipment shall exceed an A-weighted sound level of 85 dB as measured at 3 ft. from the radiating source without written permission of the Owner's Consultant and/or Owner.
5. Metal wire-brushes.
6. Flammable solvents with a flash point below 140 degrees F or materials containing ethylene glycol ether, methylene chloride, ethyl chloroform (1,1,1-trichloroethane), or other hazardous substances.
7. Non-fire retardant polyethylene sheeting.
8. Polyurethane spray foam for application in fire-rated assemblies, including but not limited to penetrations into stairwells, mechanical rooms, electrical closets, rated floor-to-floor assemblies, etc.

2.14 MASTIC REMOVERS

A. Mastic Removers shall conform to the following:

1. Non-flammable solvent or gel, with a flash point above one hundred- and forty-degrees Fahrenheit (>140 deg. F.).
2. Solvent waste shall not result in the generation of hazardous waste as described under 22 CCR, Division 4.
3. Removers shall not contain methylene chloride, halogenated hydrocarbons, or any of the following glycol ethers:

Common Name	Abbrev.	CAS# Chemical Name
ethylene glycol methyl ether	EGME	109-86-4 2-methoxyethanol
ethylene glycol methyl ether acetate	EGMEA	110-49-6 2-methoxyethyl acetate
ethylene glycol ethyl ether	EGEE	110-80-5 2-ethoxyethanol
ethylene glycol ethyl ether acetate	EGEEA	111-15-9 2-ethoxyethyl acetate
ethylene glycol dimethyl ether	EGDME	110-71-4 1,2-dimethoxyethane
ethylene glycol diethyl ether	EGDEE	629-14-1 1,2-diethoxyethane
diethylene glycol	DEG	111-46-6 2,2'-dihydroxyethyl ether
diethylene glycol methyl ether	DEGME	111-77-32-(2-methoxyethoxy) ethanol
diethylene glycol ethyl ether	DEGEE	111-90-0 2-(2-ethoxyethoxy) ethanol
diethylene glycol dimethyl ether dimethyl ether	DEGDME TEGDME	111-90-6bis(2-methoxyethoxy) ethertriethylene glycol 112-49-22,5,8,11-etraoxadodecane
dipropylene glycol	DPG	110-98-5 2,2-dihydroxyisopropyl ether

PART 3 - EXECUTION

3.1 INITIAL AREA ISOLATION (ASBESTOS)

A. Shut down and disconnect all electrical power, gas, sewage, water, phone lines, fire life safety lines and sprinkler systems to the work area so that there is no possibility of reactivation and electrical shock.

B. Provide all connections for temporary utilities in the work area needed throughout abatement. Temporary electrical power shall be according to OSHA and the National Electrical Code for Wet Environments.

C. As required, establish designated limits for the hazardous materials work area with continuous barriers. Use barrier tape (3-inch) with a pre-printed asbestos warning throughout asbestos abatement activities. Provide signs around the perimeter of the work area according to EPA, OSHA, and Cal-OSHA.

D. Contractor shall conform to the Owner's lockout requirements and secure the work area at all times. Area entrances and exits shall be secured by the Contractor throughout the abatement phase. Unauthorized

visitors are strictly prohibited. Only the Contractor, Environmental Consultant, and Owner's representatives are permitted at the job site. Contractor shall ensure that all doors, gates, windows, and potential entrances to the work areas and the designated waste location areas are secured and locked at the end of each workday.

E. Contractor shall store all materials, equipment, and supplies for the project inside the building or in areas designated by the Owner.

F. Contractor shall provide temporary sanitary services of adequate capacity to handle the maximum estimated crew size. Contractor shall maintain the temporary facilities throughout the duration of the project.

G. The Owner's Consultant will inspect and approve all containment setups before any abatement is undertaken. If a containment area is breached (failure of polyethylene seals, visible dust emission, fiber counts above background level, etc.), the Contractor shall take immediate action to control the breach and clean the area to the satisfaction of the Environmental Consultant. Clearance for any contaminated areas will be determined by the Owner's Consultant and may include air sampling. The Contractor shall be responsible for all costs associated with the clean-up and testing (including costs associated with the Environmental Consultant) resulting from containment breaches.

3.2 CONTAINMENT SET-UP PROCEDURES - ASBESTOS

A. Contractor shall construct negative pressure containments for the removal of all identified asbestos and lead containing materials.

B. To permit the inspector to view the majority of the work area, the Contractor shall provide easily accessible viewing ports from the clean space into each abatement area. Viewing ports must be a minimum of 2' x 2', clear-see-through plastic with no scratches, tape or glue/encapsulant marks.

C. Pressure differential recorders with circular or strip charts are required to monitor the pressure differential in the work areas. The recorders must be calibrated prior to arriving on site and shall be periodically recalibrated throughout the project. Recalibration shall be performed by qualified technicians following the procedures outlined by the manufacturers. The original charts or copies thereof shall be provided to the Consultant at the end of each workday. Contractor shall be immediately notified of any variance in pressure that may result in asbestos fiber concentrations above the baseline in adjacent areas.

D. The work area(s) shall be placed under negative pressure as outlined in this specification throughout the abatement work period.

E. Approved fire extinguishers (Class ABC, multi-purpose, dry chemical type, rated: 4A; 60BC) shall be readily available to workers (maximum travel distance of 50 feet) inside and adjacent to work area(s). Personnel and emergency exits shall be clearly indicated on the inside of the containment area. The emergency exit plan shall be approved by the Owner's Consultant prior to the set up of any work areas.

F. A decontamination unit shall be required for any abatement work conducted in full containment. The unit shall be located inside the building and shall be relocated as necessary to access materials that may be under or behind it.

G. The clean/change room of the worker decontamination unit shall be of sufficient size to accommodate the work crew and their belongings. It shall include a respirator storage area and be fully equipped with reserve equipment and materials such as clean suits, towels, soap, tape, and respirator filters.

H. Worker decontamination unit walls shall be a minimum of two layers of 6-mil fire retardant poly and floors shall be constructed with a minimum of three (3) layers of fire-retardant poly. All entry and exit doorways shall consist of at least two (2) sheets of overlapping, fire resistant poly. At no time shall the flapped doors be taped open in order to expedite material or personnel load-out.

3.3 CONTAINMENT SET-UP PROCEDURES – LEAD, MERCURY AND PCB BALLASTS

A. All work involving the removal or abatement of lead-containing materials, light tubes, mercury switches, and ballasts shall be conducted within the same containment areas constructed for the asbestos abatement work, described above.

B. Lead-painted doors shall be removed intact and wrapped for appropriate disposal.

C. The ceramic tiles with lead in the glazing shall be bagged and disposed of as hazardous waste.

D. The Contractor shall wrap or package the ballasts, mercury switches and tubes in a manner appropriate to

their method of transportation and disposal and/or recycling.

3.4 PERSONNEL PROTECTION

A. Informed Workers:

1. All workers shall be informed of the hazards of asbestos, lead, PCBs, mercury and any other hazardous materials exposure. Workers shall also be instructed in the use and fitting of respirators, protective clothing, decontamination procedures, and all other aspects associated with abatement work.

B. Personal Hygiene Practices:

1. The Contractor shall enforce and follow good personal hygiene practices during the abatement of hazardous materials. These practices will include but not be limited to the following:

a. No eating, drinking, smoking, or applying cosmetics in the work area. The Contractor shall provide a clean space, separated from the work area, for these activities.

2. If air monitoring data gathered by the Owner's Consultant in areas adjacent to the work areas shows exposure to airborne asbestos, lead or other hazardous materials exceeding Cal-OSHA criteria, that area will become regulated and workers must wear protective clothing and approved respirators and must have a decontamination facility provided to them.

E. Respirators:

1. Establish a respirator program as outlined by ANSI and required by Cal-OSHA. Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH). Respirators selected must be approved by the Competent Person. Submit program for review a minimum of five (5) working days prior to the commencement of abatement activities.

2. Respirators and Protective Equipment for Handling Asbestos:

a. At minimum, provide each employee with the following respiratory protection and protective clothing for each work phase:

i. Pre-cleaning, containment set-up, and containment removal work: NIOSH-approved, half-face respirators with HEPA cartridges.

b. Interior asbestos abatement of wall mastics as well as roof level penetration mastics and/or any other Category 1 & 2 non-friable ACM, as applicable: half-face respirators with HEPA cartridges and organic vapor cartridges (as necessary).

F. Protective Clothing:

1. Provide personnel exposed to asbestos fibers, mercury and PCBs with fire retardant disposable protective whole-body clothing, head coverings, gloves, and foot coverings. Provide appropriate gloves to protect workers hands from exposure to hazardous materials. Make sleeves secure at the wrists and make foot coverings secure at the ankles with tape. Ensure that all personnel entering and leaving the workspace follow this procedure.

2. Suits shall be of adequate size to accommodate the largest employee. Foot covers may be part of the coveralls. Non-disposable footwear shall be left in the work area until it is decontaminated or disposed of at the completion of the job.

3. Protective clothing will be worn inside the work area after the area passes pre-abatement inspection and shall remain in use until the area passes final clearance inspection.

G. Eye Protection: Provide safety glasses or goggles to personnel engaged in asbestos operations when half-face respirators are in use.

3.5 CONTAINMENT AND DECONTAMINATION AREAS/SYSTEMS

A. Prior to each work shift and continuously throughout the project, each containment and decontamination enclosure shall be inspected and repaired as needed.

B. Ambient asbestos fiber levels outside each work area shall not exceed 0.01 f/cc (PCM) or 70 s/mm^2 (TEM). If the asbestos fiber concentrations outside each work area should exceed those concentrations, then abatement must stop, and operations be reviewed and modified until the fiber count can be reduced to within

the acceptable limits.

3.6 ASBESTOS AND LEAD REMOVAL

A. The Contractor shall abate all asbestos and lead-containing materials shown in the demo drawings and listed in this specification.

B. The Contractor shall continuously apply wetting agent throughout the removal process. The wetting agent shall be applied with a low-pressure fine spray to minimize fiber releases. The materials shall be thoroughly saturated so that there is no detectable fiber release. All ACM and lead waste shall be immediately packaged in leak-tight containers following removal.

C. Minimize removal activities that generate airborne particulate. To the extent feasible, use manual methods to remove materials in sections or substantially intact, wetting along the scoring line continually, and misting the air with an airless sprayer to knock down suspended particulate.

D. Perimeter air sample results shall not exceed 0.01 f/cc (PCM) or 30 micrograms per cubic meter (m/m^3) for airborne lead. If airborne fiber concentrations should exceed the level shown above, then abatement must stop, and operations be reviewed and modified until the fiber levels can be reduced to within acceptable limits.

E. The Contractor shall transport asbestos-containing waste bags to the waste debris box at designated hours approved by the Owner. Asbestos and hazardous lead waste shall be packaged in a minimum of two (2) 6-mil polyethylene bags. Bags shall have site specific generator labels for proper RACM disposal.

F. Asbestos-containing debris and contaminated water shall be cleaned from the work area at the end of each work shift. The Contractor shall clean the work area using wet methods and HEPA vacuum equipment.

3.7 PCB-CONTAINING BALLAST, FLUORESCENT LIGHT TUBE, AND MERCURY SWITCH REMOVAL

A. The EPA (EPA; 40 CFR 761.60 and 761.65) and the DOHS (22 CCR Section 66508) consider PCBs in ballasts a hazardous waste.

B. PCB-containing light ballasts and mercury-containing light tubes and thermostat switches shall be removed and segregated.

C. Workers removing ballasts from fixtures shall wear appropriate protective clothing and nitrile or neoprene gloves. Ballasts showing signs of overheating or leakage will require wipe-down of the fixture with clean paper towels/rags after the unit has cooled to room temperature.

D. All removed ballasts shall be properly drummed with absorbent for disposal. Contractor shall package and dispose of fluorescent light tubes and mercury-containing thermostat switches according to the appropriate local, state, and federal regulations.

3.8 AIR MONITORING - ASBESTOS:

A. The purpose of the air monitoring, if conducted at the option of the Owner, will be to detect possible release of fibers or dusts emanating from the work areas.

B. The Owner, at his discretion, may provide area monitoring as described in this specification. If sample results indicate that conditions have exceeded the baseline, as determined by the Owner, all work shall cease. Work shall not recommence until the condition(s) causing the increase have been corrected.

C. All PCM air sample analysis shall comply with NIOSH Method 7400. All TEM analysis shall be consistent with modified-AHERA protocols.

D. The Owner's representative shall perform all final clearance inspection and sampling.

E. The method of analysis for pre-abatement and clearance air samples shall be via Transmission Electron Microscopy (TEM). The method of analysis for in-progress asbestos air samples shall be phase contrast microscopy (PCM) with TEM at the option of the Owner.

F. Lead clearances will be via visual assessment with the option of wipe sampling if requested by the Owner. Wipe sample results shall be less than ten (10) micrograms of lead per square foot of floor area wiped.

G. The Contractor shall be responsible for all personal air sampling. During the performance of any work in the contaminated work area, sufficient personnel breathing zone samples shall be taken to constitute

representative sampling. These samples shall be taken each shift and for each distinct crew operation, and shall be used to verify adequacy of fiber control and respiratory protection. Personal breathing zone air sampling shall be in accordance with Cal-OSHA asbestos standards.

3.9 DECONTAMINATION - ASBESTOS AND LEAD

A. Decontamination:

1. Following the abatement work, all reusable, contaminated equipment, such as masks, hard hats, boots, etc. shall be thoroughly decontaminated through wet cleaning methods before removal from the work area.

2. No accumulation of debris or standing water will be permitted following the initial decontamination. All visible asbestos debris on soil will be removed to baseline concentrations.

3.10 CLEARANCE INSPECTIONS – ASBESTOS AND LEAD

A. Initial Visual Inspection: Contractor shall notify the Owner's representative when the decontamination process in each containment area is complete. Evidence of asbestos dusts will require additional clean up by the Contractor. Contractor shall be responsible for re-cleaning all areas found to be deficient.

B. Once the initial visual is passed, the Contractor shall remove all but the containment critical barriers.

C. If the Owner determines that the work area is sufficiently clean, the Contractor may proceed. If the Owner determines that certain areas require additional cleaning, the Contractor shall re-clean the work area and request a second inspection of the recleaned area. All costs incurred by the Owner for inspections required after the second inspection will be charged to the Contractor.

D. Following the visual inspection for asbestos, the Contractor shall provide a coating of non-diluted encapsulant in the work area. The Contractor shall allow the encapsulant to dry for the period specified by the manufacturer.

E. Asbestos Clearance Testing: Following encapsulation and drying time, the Contractor shall request that the Owner's Consultant conduct air clearance sampling. Clearance air sampling shall not take place until all encapsulant is dry.

3.11 CLEARANCE CRITERIA - ASBESTOS

A. The Owner's Consultant will conduct a final inspection of each work area. Any material found shall be cleaned by the Contractor and any repairs to existing conditions shall be made at no additional cost to the Environmental Consultant. When the area is clean, the Owner's Consultant shall provide the Contractor with a written notice of acceptance.

B. The clearance level for each containment shall be less than 70 structures per square millimeter of filter (s/mm^2) per TEM analytical methodology. Aggressive sampling shall be used for clearance purposes.

C. Multiple samples will be collected depending on the size and configuration of the work areas.

D. If air samples do not pass the required clearance criteria, the area shall be re-cleaned and new samples shall be collected by the Environmental Consultant. The Contractor shall be responsible for all costs associated with re-sampling and re-analyses. This amount will be deducted by the Owner from the Contractor's final payment.

E. The Owner's Consultant shall notify the Contractor in writing of acceptable asbestos fiber concentrations. The Contractor shall then remove all the remaining barriers in the work area.

3.12 HAZARDOUS MATERIALS DISPOSAL

A. Load-Out Procedures:

1. Ensure that polyethylene bags are sealed air-tight. All bags shall be wet cleaned prior to removing them from the equipment decontamination unit.

2. Ensure all disposal containers are properly labeled according to 8 CCR 1529, 5194 (HAZCOM), 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), and any local regulations and state regulations as required by this specification.

3. Asbestos containing materials removed from roof level areas must be lowered to the ground in a controlled

manner. Materials cannot be dropped, thrown or otherwise removed from the roof in any method that may damage bags containing material wastes.

B. Asbestos and Lead Disposal Procedures:

1. The Contractor is responsible to determine current waste handling, labeling, transportation and disposal regulations for the work site and for each waste disposal landfill. The Contractor must comply fully with these regulations, local, state, and federal regulations and provide documentation of the same.
2. Filter all wastewater to the technically feasible limit, but not more than five (5) microns before disposal. Comply with all current local, state and federal codes relating to waste water release.
3. Asbestos-containing waste that is properly labeled and double-bagged, may be temporarily stored in areas approved by the Owner. Areas must be made secure before storing the waste. Waste is not to remain in temporary storage area for longer than four (4) days before final load-out of materials.
4. All asbestos waste shall be double-wrapped prior to transport from the site.
5. All vehicles used to transport hazardous waste must be registered with the Department of Toxic Substance Control and display the proper registration and expiration stickers.
6. Trucks must have an enclosed cargo area with a storage compartment that is fully lined with a minimum of one (1) layer of 6-mil polyethylene on the walls and two (2) layers on the floor.
7. Contractor shall not throw bags into the truck in a way that may cause the bags to burst open.
8. Contractor shall provide at minimum one (1) day advance notification to the Owner when signatures are required on manifest(s). The Contractor shall ensure that the Hazardous Waste Manifest is correctly filled out. The Contractor shall give the appropriate copies to the Owner and shall also instruct the Owner in writing that they must send the appropriate copy to the Department of Toxic Substance Control.
9. If a debris box is used, the Contractor shall make all necessary arrangement with the Owner including obtaining all appropriate permits.
10. Contractor is responsible for all coordination with the waste disposal site and with the waste hauling company.
11. Debris box for hazardous waste shall be fully lined with a double layer of polyethylene sheeting and must be locked at all times when unattended.
12. Debris box shall be constructed with minimum 20-gauge steel with no windows or openings other than the door. The door of the container shall have a secure cover on the locking device with access to the lock only at the key-hole. Once the debris box is filled and the manifest is signed, Contractor must transport the debris box off the job site.
13. Disposal shall be in a landfill that meets EPA requirements. Do not throw bags into landfills in a way that may cause the bags to burst open. If bags cannot be taken out of the drums undamaged, then include the disposal of the drums with the bags. Ensure that bags remain intact during this process.

C. Fluorescent Light Tube and Mercury Switch Disposal Procedures:

1. Mercury in the fluorescent light tubes is considered a hazardous waste by the California Department of Health Services (DOHS; 22 CCR Section 66699(b)). Mercury in the thermostat switches is also considered hazardous waste.
2. Tubes shall be shipped to a commercial recycler for reclamations of mercury. The recycler shall comply with DOT requirements for manifests and submit copies of manifests to the Owner, including a log of shipment dates and quantities. Contractor shall handle, disposal, and/or recycling fluorescent light tubes according to the appropriate local, state, and federal regulations.

D. The Contractor is responsible to determine current waste handling, labeling, transportation and disposal regulations for the mercury-containing thermostat switches. The Contractor must comply fully with these regulations, local, state, and federal regulations and provide documentation of the same.

E. PCB-Containing Ballast Disposal Procedures:

1. PCB-containing light ballasts shall be segregated prior to disposal and/or recycling.

2. The Environmental Protection Agency (EPA; 40 CFR 761.60 & 761.65) and the DOHS (22 CCR Section 66508) consider PCB from ballasts a hazardous waste.
3. The Contractor shall pack all ballasts not specifically marked as “non-PCB containing” as hazardous waste.
4. Workers handling ballasts shall wear protective clothing and nitrile or neoprene gloves. Ballasts showing signs of overheating or leakage will require wipe-down of the fixture with clean paper towels/rags.
5. Leaking ballasts and contaminated towels/rags should be placed in plastic bags and sealed. Remaining ballasts and bagged waste shall be packed in steel drums, sealed, labeled, and transported to an approved incinerator or disposal facility following require manifest procedures.

6. Drum loading shall not exceed the incinerator’s requirements (typically 350 to 500 pounds limit per drum).

END OF SECTION 02 08 0

Limited Asbestos & Lead Survey Report

Lafayette Community Center
500 St. Mary's Road
Restroom and Custodial Room
Lafayette, California

June 6, 2021

Terracon Project No. R1217451

Prepared for:

Jonathan "ACE" Katayanagi
City of Lafayette
3675 Mt. Diablo Blvd. Ste 210
Lafayette, CA 94549

Prepared by:

Terracon Consultants, Inc.
1466 66th Street
Emeryville, California 94608
510-547-7771

Report Prepared by: _____ Annabelle Call
Industrial Hygienist, CAC # 12-4856

Report Reviewed by: _____ Karin Schroeter
Project Manager CAC #92-0772, CDPH #2228

Table of Contents

Appendices

Limited Asbestos & Lead Survey Report

City of Lafayette
Lafayette Community Center
500 St. Mary's Road
Restrooms and Custodial Room
Lafayette, California

1. Executive Summary

The following is a report of a limited asbestos and lead survey conducted by Wyatt Renner, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) Lead Sampling Technician with Terracon Consultants, Inc. (Terracon). The survey was performed on June 8, 2021 in the restrooms and custodial room of the 500 St. Mary's Road building located in Lafayette, California.

Terracon was asked to limit the sampling to the materials that will be impacted by the scheduled work which included the full gut of the restrooms and all fixtures and finishes and the infill of the restroom doorways, replacement of custodial room door and removal of wall finishes and substrate in the custodial room. No other suspect materials within the building were sampled.

A total of five (5) homogeneous suspect asbestos-containing materials (ACMs) were identified in the impacted areas of the restrooms and custodial room during the survey. The samples were analyzed using polarized light microscopy (PLM) techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume.

Asbestos was detected in one (1) of the sampled materials.

One (1) paint sample and four (4) ceramic tile samples were analyzed for lead content. Lead was detected in the paint sample and in the glazing associated with one (1) of the ceramic tile samples.

2. Scope of Work

The scope of the survey was as follows:

- Collect samples of suspect ACMs that will be impacted by the scheduled work in the restrooms and custodial room. Other areas in the building and the building exterior were excluded.

- Collect a representative number of samples of suspect ACMs following a National Emissions Standards for Hazardous Air Pollutants (NESHAPS) protocol for sample collection. Asbestos bulk samples were analyzed using polarized light microscopy (PLM) in accordance with EPA's July 1993 method for the determination of asbestos in bulk building materials - EPA 600/R-93/116.

- Collect samples of building materials suspected to be lead containing for purposes of compliance with California Department of Occupational Safety and Health (DOSH) Lead in Construction Standard. Lead samples were analyzed at an accredited laboratory by Flame Atomic Absorption (AA) for Total Lead reported in parts per million (ppm).

- Submit written report including analytical results and conclusions.

3. Asbestos Sample Results

During the survey, a total of five (5) suspect homogeneous ACMs were identified. One (1) of the sampled materials was found to contain asbestos. A summary of the sample results is provided in the following tables.

TABLE I
ASBESTOS-CONTAINING MATERIAL

Material Description	Sampling Locations	Asbestos Content
Drywall with Joint Compound	Custodial Room Northwest Corner Women's Restroom Southwest Corner Men's Restroom at Entry **Note: Material is located throughout the restrooms and custodial room.**	Drywall: ND Joint Compound: 3% CH Tape/Paint: ND Composite DW&JC: <1% CH

CH = Chrysotile, ND = None Detected

The following materials were sampled but did not contain asbestos.

TABLE II
NON-ASBESTOS CONTAINING MATERIALS

Material Description	General Sample Locations	Sample Results
Ceramic Floor Tile Yellow with White with Mortar and Grout	Women's Restroom Handicap Stall Women's Restroom at Entry Men's Restroom at Entry	None Detected
4" Off-White Ceramic Wall Tile with Mortar and Grout	Women's Restroom Behind Entry Door Men's Restroom Behind Entry Door	None Detected
Black Mirror Mastic	Men's Restroom Mirror	None Detected
Vapor Barrier	Men's Restroom Exterior Women's Restroom Exterior	None Detected

Any additional materials found during construction activities and not identified in this survey report should be assumed to be ACM.

4. Lead Sample Results

One (1) paint sample and four (4) ceramic tile samples were submitted for lead analysis. All paint and other suspect materials samples were analyzed for lead content using the Flame Atomic Absorption spectroscopy in accordance to EPA Method SW846-3050B-7420. When "<" appears in the lead sample report, it should be interpreted as meaning below analytical detection limit.

Two (2) of the samples contained lead in detectable concentrations and are bolded in the Table III below.

TABLE III
LEAD IN PAINT AND CERAMIC

Sample Number	Description/Location of Sample	Results mg/kg (ppm)
Pb-01	2" Yellow Ceramic Floor Tile on Mortar Women's Restroom Handicap Stall	<6.9 ppm
Pb-02	1"x2" Light Yellow Ceramic Floor Tile on Mortar Women's Restroom Handicap Stall	<7.4 ppm
Pb-03	1" White Ceramic Floor Tile on Mortar Women's Restroom Entry	<9.1 ppm
Pb-04	**4" Off-White Ceramic Wall Tile on Mortar Women's Restroom Entry**	**5,600 ppm**

Sample Number	Description/Location of Sample	Results mg/kg (ppm)
Pb-05	**Brown Paint over Blue Paint on Wood Door Men's Restroom West Door**	**3,000 ppm**

mg/kg – milligrams per kilogram, ppm – parts per million

5. Limitations

Our services consist of professional opinions, conclusions and recommendations that are made in accordance with generally accepted consulting standards, principles and practices. Reasonable attempts have been made to ensure that the report is complete and accurate with respect to Terracon's authorized scope of work. Terracon assumes no liability for damages, which might result from errors contained in the report or conditions, which the report fails to disclose. The quantity of samples, sample locations, and analyses performed were selected to provide analytical data to document and evaluate current site conditions.

The information provided in this report is not intended to be used as a biddable document for abatement purposes.

Appendix 1:

Laboratory Results and Chain of Custody - Asbestos

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1023
Karin Schroeter
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1217451
LAFAYETTE COMMUNITY CENTER
RESTROOM PROJECT - SURVEY

Micro Log In	**282091**
Total Samples	14
Date Sampled	06/08/2021
Date Received	06/08/2021
Date Analyzed	06/08/2021

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS If absent, ND Is Reported (No Asbestos Detected)	DOMINANT OTHER MATERIALS
Client #: 1A Micro #: 282091-01 Analyst: GR HM #01 - DRYWALL WITH JOINT COMPOUND CUSTODIAL ROOM NW CORNER	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS DRYWALL: ND JOINT COMPOUND (BEIGE): 3% CHRYSOTILE ASBESTOS TAPE / PAINT: ND	15 % CELLULOSE NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: 1B Micro #: 282091-02 Analyst: GR HM #01 - DRYWALL WITH JOINT COMPOUND WOMENS RESTROOM SW CORNER	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS DRYWALL: ND JOINT COMPOUND (BEIGE): 3% CHRYSOTILE ASBESTOS TAPE / PAINT: ND	20 % CELLULOSE NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: 1C Micro #: 282091-03 Analyst: GR HM #01 - DRYWALL WITH JOINT COMPOUND MENS RESTROOM AT ENTRY	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS DRYWALL: ND JOINT COMPOUND (BEIGE): 3% CHRYSOTILE ASBESTOS TAPE / PAINT: ND	25 % CELLULOSE NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: 2A Micro #: 282091-04 Analyst: GR HM #02 - CERAMIC FLOOR TILE YELLOW / WHITE WITH MORTAR AND GROUT WOMENS RESTROOM HANDICAP STALL	CERAMIC TILE: ND MORTAR / GROUT: ND	NFM: ROCK FRAGMENTS CARBONATE CERAMIC
Client #: 2B Micro #: 282091-05 Analyst: GR HM #02 - CERAMIC FLOOR TILE YELLOW / WHITE WITH MORTAR AND GROUT WOMENS RESTROOM AT ENTRY	MORTAR / GROUT: ND (NO CERAMIC TILE IN THE SAMPLE)	NFM: ROCK FRAGMENTS CARBONATE

Technical Supervisor: Baojia Ke, Ph.D. 6/8/2021 Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 μm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1023
Karin Schroeter
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1217451
LAFAYETTE COMMUNITY CENTER
RESTROOM PROJECT - SURVEY

Micro Log In **282091**
Total Samples 14
Date Sampled 06/08/2021
Date Received 06/08/2021
Date Analyzed 06/08/2021

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS If absent, ND Is Reported (No Asbestos Detected)	DOMINANT OTHER MATERIALS
Client #: 2C Micro #: 282091-06 Analyst: GR HM #02 - CERAMIC FLOOR TILE YELLOW / WHITE WITH MORTAR AND GROUT MENS RESTROOM AT ENTRY	MORTAR / GROUT: ND (NO CERAMIC TILE IN THE SAMPLE)	NFM: ROCK FRAGMENTS CARBONATE
Client #: 3A Micro #: 282091-07 Analyst: GR HM #03 - 4" OFF WHITE CERAMIC WALL TILE WITH MORTAR AND GROUT WOMENS RESTROOM BEHIND ENTRY DOOR	CERAMIC TILE: ND MORTAR / GROUT: ND TEXTURE / PAINT: ND	NFM: ROCK FRAGMENTS CARBONATE CERAMIC
Client #: 3B Micro #: 282091-08 Analyst: GR HM #03 - 4" OFF WHITE CERAMIC WALL TILE WITH MORTAR AND GROUT MENS RESTROOM BEHIND ENTRY DOOR	CERAMIC TILE: ND MORTAR / GROUT: ND TEXTURE / PAINT: ND	NFM: ROCK FRAGMENTS CARBONATE CERAMIC
Client #: 3C Micro #: 282091-09 Analyst: GR HM #03 - 4" OFF WHITE CERAMIC WALL TILE WITH MORTAR AND GROUT MENS RESTROOM BEHIND ENTRY DOOR	CERAMIC TILE: ND MORTAR / GROUT: ND TEXTURE / PAINT: ND	NFM: ROCK FRAGMENTS CARBONATE CERAMIC
Client #: 4A Micro #: 282091-10 Analyst: GR HM #04 - BLACK MIRROR MASTIC MENS RESTROOM MIRROR	ND	5 % CELLULOSE NFM: SYNTHETIC MATERIAL CARBONATE BINDER

Technical Supervisor: for Baojia Ke, Ph.D. 6/8/2021 Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 μm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1023
Karin Schroeter
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1217451
LAFAYETTE COMMUNITY CENTER
RESTROOM PROJECT - SURVEY

Micro Log In **282091**
Total Samples 14
Date Sampled 06/08/2021
Date Received 06/08/2021
Date Analyzed 06/08/2021

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS If absent, ND Is Reported (No Asbestos Detected)	DOMINANT OTHER MATERIALS
Client #: 4B Micro #: 282091-11 Analyst: GR GR **HM #04 - BLACK MIRROR MASTIC** **MENS RESTROOM MIRROR**	**ND**	5 % CELLULOSE NFM: SYNTHETIC MATERIAL CARBONATE BINDER
Client #: 5A Micro #: 282091-12 Analyst: GR **HM #05 - VAPOR BARRIER** **MENS RESTROOM EXTERIOR**	**TAR PAPER: ND**	60 % CELLULOSE NFM: TAR SYNTHETIC MATERIAL
Client #: 5B Micro #: 282091-13 Analyst: GR **HM #05 - VAPOR BARRIER** **MENS RESTROOM EXTERIOR**	**TAR PAPER: ND**	60 % CELLULOSE NFM: TAR SYNTHETIC MATERIAL
Client #: 5C Micro #: 282091-14 Analyst: GR **HM #05 - VAPOR BARRIER** **WOMENS RESTROOM EXTERIOR**	**TAR PAPER: ND**	60 % CELLULOSE NFM: TAR SYNTHETIC MATERIAL

Technical Supervisor: Baoja Ke, Ph.D. 6/8/2021 Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 μm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

Wyatt.renner@terracon.com
Heidi.Santos@terracon.com

RUSH!

282091

Terracon

E-MAIL REPORT TO: *SEE BELOW PROJECT MANAGER (PM)

☐ PM – S. Steiner spsteiner@terracon.com	☒ PM – K. Schroeter kmschroeter@terracon.com	☐ PM – K. Pilgrim kmpilgrim@terracon.com
☐ PM- M. Benefield msbenefield@terracon.com	☐ PM – T. Kattchee takattchee@terracon.com	☐ PM – W. Frieszell wmfrieszell@terracon.com
☐ PM- D. Block David.block@terracon.com	☐ denise.wallen@terracon.com Engineering Assistant	☐ [redacted]@terracon.com Engineering Assistant

ACM BULK SAMPLE DATA SHEET

☒ PLM Analysis (Analyze all samples)
☐ Stop Analysis at First Positive
☐ Point Count Analysis (400-point)

Project Name/ Address/ Building No. Lafayette Community center Restroom project - Survey

Project# R127451 **Sampled By:** Wyatt Renner **Sampling Date:** 6/8/21

Sample(s) sent to: ☒ MAL ☐ ASB TEM ☐ EMLAB ☐ Other

TAT ☒ Rush ☐ 24HRS ☐ 48HR ☐ 3-5 days

	HM# 01	**Material Description** Dry wall w/ Joint compound
	Sample ID	**Sample Location & Material Location** — **Quantity:**
1	1A	Custodial Room NW corner
2	1B	Womens Restroom SW corner
3	1C	Mens Restroom at entry
	HM# 02	**Material Description:** Ceramic floor tile Yellow/white w/ mortar and grout
	Sample ID	**Sample Location & Material Location** — **Quantity:**
4	2A	Womens Restroom Handicap stall
5	2B	Womens Restroom at entry
6	2C	Mens Restroom at entry
	HM# 03	**Material Description:** 4" off white ceramic wall tile w/ mortar and grout
	Sample ID	**Sample Location & Material Location** — **Quantity:**
7	3A	Womens Restroom behind entry door
8	3B	Mens Restroom behind entry door
9	3C	Mens Restroom behind entry door
	HM# 04	**Material Description:** Black Mirror Mastic
	Sample ID	**Sample Location & Material Location** — **Quantity:**
10	4A	Mens Restroom Mirror
11	4B	Mens Restroom Mirror
	HM# 05	**Material Description:** Vapor Barrier
	Sample ID	**Sample Location & Material Location** — **Quantity:**
12	5A	Mens restroom exterior
13	5B	Mens rest room exterior
14	5C	Womens Restroom exterior

Relinquished By:	Wyatt Renner	**Signature:**	Wyatt R	**Date/Time:**	6/8/21
Received By:	[illegible]	**Signature:**	[illegible]	**Date/ Time:**	6/9/21 11:00am
Relinquished By:		**Signature:**		**Date/Time:**	
Received By:		**Signature:**		**Date/Time:**	

Appendix 2:

Laboratory Results and Chain of Custody - Lead

MICRO ANALYTICAL LABORATORIES, INC.

EPA SW-846 LEAD-TTLC

1023
Karin Schroeter
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:

JOB NO. R1217451
LAFAYETTE COMMUNITY CENTER
RESTROOM PROJECT - SURVEY

Micro Log In	282092
Total Samples	4
Date Sampled	06/08/2021
Date Received	06/08/2021
Date Analyzed	06/08/2021

Sample ID	Lead Concentration, ppm	RDL, ppm	Comments
Client PB-01 Micro 282092-01 2" YELLOW CERAMIC - MORTAR - FLOOR 2" YELLOW CERAMIC FLOOR TILE IN WOMENS RR HANDICAP STALL	< 6.9	6.9	
Client PB-02 Micro 282092-02 1" X 2" LIGHT YELLOW CERAMIC - MORTAR - FLOOR 1" X 2" LIGHT YELLOW TILE IN WOMENS RR HANDICAP STALL	< 7.4	7.4	
Client PB-03 Micro 282092-03 1" WHITE CERAMIC - MORTAR - FLOOR 1" WHITE CERAMIC TILE IN WOMENS RR ENTRY	< 9.1	9.1	
Client PB-04 Micro 282092-04 4" OFF WHITE CERAMIC - MORTAR - WALL 4" OFF WHITE CERAMIC TILE AT WOMENS RR ENTRY	5600	900	

Technical Supervisor: _____ 6/8/2021 Analyst: CZ
Long T. Nguyen, Chemistry Supervisor — Date Reported

AIHA-LAP LLC ELLAP Accredited Laboratory, ID #101768. Samples are analyzed by Flame Atomic Absorption Spectrometry (FLAA) using SOP 23-Soil (in accordance with EPA Methods 3050B for Acid Digestion (SW 846, 3rd edition, 2007) and 7420 for Analysis (SW-846, 3rd edition, 2007)). NOTE: Water samples are analyzed by FLAA in accordance with Method 3111B (Standard Methods for the Examination of Water and Wastewater, 18th edition). Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. This report must not be reproduced except in full without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION. L = liters. RDL = Report Detection Limit. Note: mg / Kg is the same as ppm for solids, and mg/L is the same as ppm for water.

RUSH!

282092 (TTLC)

Terracon

Wyatt.renner@terracon.com

Heidi.Santos@terracon.com

E-MAIL REPORT TO: PROJECT MANAGER (PM)				
☐ denise.wallen@terracon.com Engineering Assistant	☐ eric.dyer@terracon.com Engineering Assistant			
☐ PM – S. Steiner spsteiner@terracon.com	☒ PM – K. Schroeter kmschroeter@terracon.com			
☐ PM – K. Pilgrim kmpilgrim@terracon.com	☐ PM- M. Benefield msbenefield@terracon.com	☐ PM – W. Frieszell wmfrieszell@terracon.com	☐ PM – T. Kattchee takattchee@terracon.com	☐ PM – D. Block david.block@terracon.com

LEAD PAINT SAMPLE DATA SHEET

* Lead Analysis

____ Flame AA (EPA 7420) ____ TTLC

PAGE 1 OF 1

Project Name/ Address/ Building No. Lafayette Community Center Restroom Project Survey

Project# R121 7451 **Sampled By:** Wyatt Renner **Sampling Date:** 6/8/21

Sample(s) sent to: ☒ MAL ☐ EMSL ☐ Aerobiology ☐ Quantem **Other** ____

TAT ☒ Rush ☐ 24HRS ☐ 48HRS ☐ 3-5 Day

	Sample ID	Paint Description and Sample Location	Condition (I/F/P)
1	Pb-01	Paint Color: 2" yellow ceramic Substrate: Mortar Component: Floor Sample Location: Bldg # ____ Unit # ____ Room ____ 2" yellow ceramic Floor tile in womens RR Handicap Stall.	
2	Pb-02	Paint Color: 1"X2" light yellow ceramic Substrate: Mortar Component: Floor Sample Location: Bldg # ____ Unit # ____ Room ____ 1"X2" light yellow tile in Womens RR Handicap Stall	
3	Pb-03	Paint Color: 1" White ceramic Substrate: Mortar Component: Floor Sample Location: Bldg # ____ Unit # ____ Room ____ 1" White ceramic tile in womens RR entry	
4	Pb-04	Paint Color: 4" OFF white ceramic Substrate: Mortar Component: Wall Sample Location: Bldg # ____ Unit # ____ Room ____ 4" off white ceramic tile at womens RR entry	
	Pb-05	Paint Color: Brown on Blue Substrate: Wood Component: Door Sample Location: Bldg # ____ Unit # ____ Room ____ Mens Restroom west door	

Relinquished By:	Wyatt Renner	**Signature:**	Wyatt R	**Date/Time:**	6/8/21
Received By:		**Signature:**		**Date/ Time:**	6/8/21 11:40am
Received By:		**Signature:**		**Date/Time:**	

MICRO ANALYTICAL LABORATORIES, INC.

LEAD IN PAINT - FLAME AAS (SW846)

1023
Karin Schroeter
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1217451
LAFAYETTE COMMUNITY CENTER
RESTROOM PROJECT - SURVEY

Micro Log In 282094
Total Samples 1
Date Sampled 06/08/2021
Date Received 06/08/2021
Date Analyzed 06/08/2021

Sample ID	Lead Concentration Weight Percent	mg/kg (ppm)	RDL
Client: PB-05 Lab: 282094-01 BROWN ON BLUE - WOOD - WALL MENS RESTROOM WEST DOOR	0.30 %	3000	0.0410 % 410 mg/kg

Technical Supervisor: _____ 6/8/2021 Analyst: KG
Long T. Nguyen, Chemistry Supervisor Date Reported

AIHA-LAP, LLC Accredited Laboratory, ID #101768. Samples are analyzed by Flame Atomic Absorption Spectrometry (AAS) using SOP 23-Paint. This SOP is based on U.S. EPA SW-846 Method 7420 for instrumental analysis, and on ASTM E-1645-16 for nitric acid and hydrogen peroxide digestion. Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. If the amount of sample available for analysis is lower than advisable for this method, detection limits and uncertainty will be higher. This report must not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. N/A = Not Applicable. RDL = Report Detection Limit.

Wyatt.renner@terracon.com

Heidi.Santos@terracon.com

RUSH!

282094 (AA Paint)

Terracon

E-MAIL REPORT TO: *PROJECT MANAGER (PM)

☐ denise.wallen@terracon.com Engineering Assistant	☐ eric.dyer@terracon.com Engineering Assistant
☐ PM – S. Steiner spsteiner@terracon.com	☒ PM – K. Schroeter kmschroeter@terracon.com
☐ PM – K. Pilgrim kmpilgrim@terracon.com	☐ PM- M. Benefield msbenefield@terracon.com
☐ PM – W. Frieszell wmfrieszell@terracon.com	☐ PM – T. Kattchee takattchee@terracon.com
☐ PM – D. Block david.block@terracon.com	

LEAD PAINT SAMPLE DATA SHEET

* Lead Analysis

_____ Flame AA (EPA 7420) _____ TTLC

PAGE 1 OF 1

Project Name/ Address/ Building No. Lafayette Community center Restroom Project Survey

Project# R121 7451 **Sampled By:** Wyatt Renner **Sampling Date:** 6/8/21

Sample(s) sent to: ☒ MAL ☐ EMSL ☐ Aerobiology ☐ Quantem **Other** _____

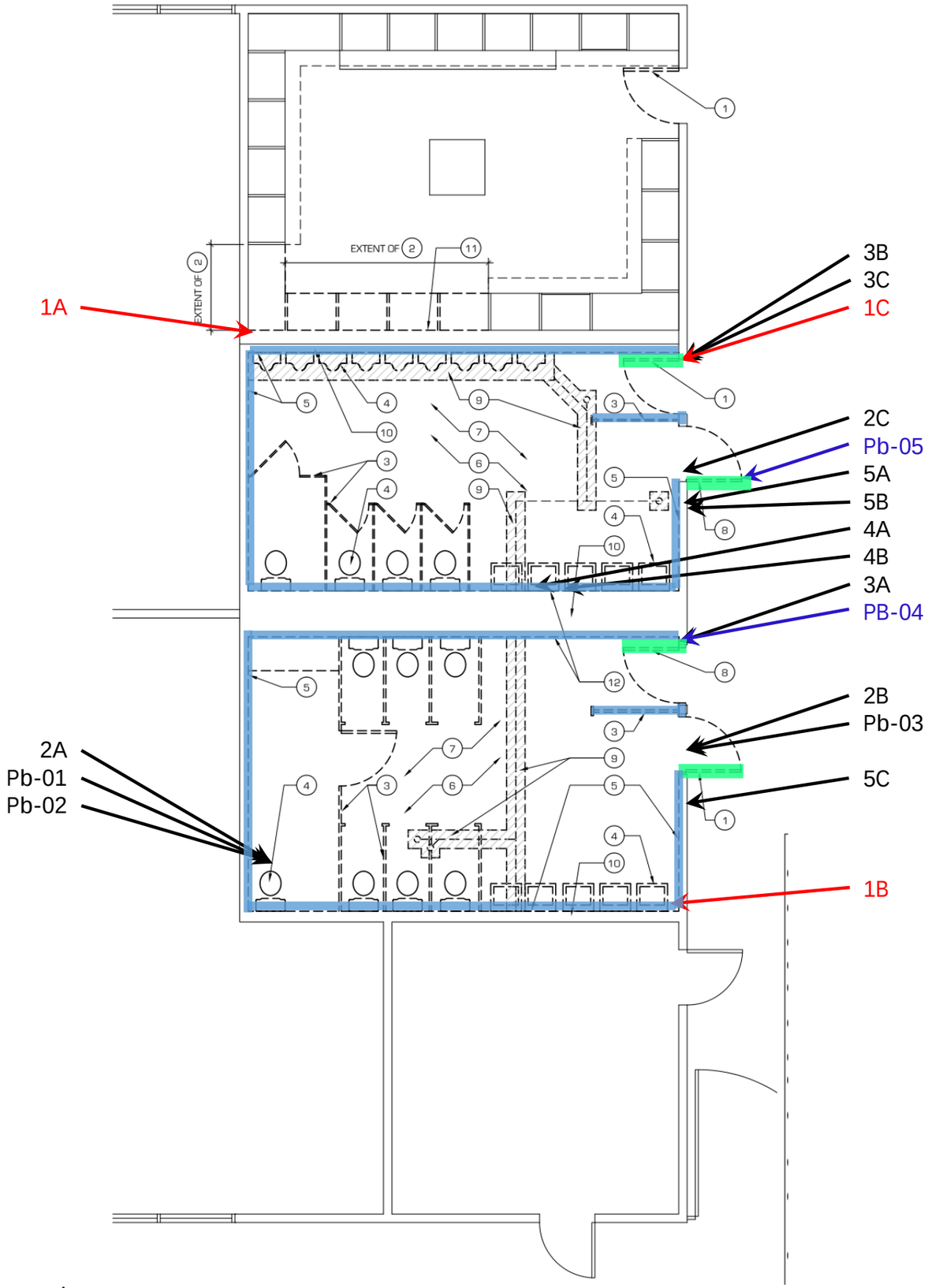
TAT ☒ Rush ☐ 24HRS ☐ 48HRS ☐ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: 2" yellow ceramic Substrate: Mortar Component: Floor Sample Location: Bldg # _____ Unit # _____ Room _____ 2" yellow ceramic Floor tile in womens RR Handicap Stall.	
Pb-02	Paint Color: 1"X2" light yellow ceramic Substrate: Morta Component: Floor Sample Location: Bldg # _____ Unit # _____ Room _____ 1"X2" light yellow tile in Womens RR Handicap Stall	
Pb-03	Paint Color: 1" White Ceramic Substrate: Morter Component: Floor Sample Location: Bldg # _____ Unit # _____ Room _____ 1" White ceramic tile in womens RR entry	
Pb-04	Paint Color: 4" OFF white ceramic Substrate: Morte Component: Wall Sample Location: Bldg # _____ Unit # _____ Room _____ 4" off white ceramic tile at womens RR entry	
Pb-05	Paint Color: Brown on Blue Substrate: Wood Component: Door Sample Location: Bldg # _____ Unit # _____ Room _____ Mens Restroom west door	

Relinquished By:	Wyatt Renner	**Signature:**	Wyatt	**Date/Time:** 6/8/21
Received By:		**Signature:**		**Date/ Time:** 6/8/21 11:40am
Received By:		**Signature:**		**Date/Time:**

Appendix 3:

Material and Sample Location Drawing



Legend:

Lead containing brown paint over blue paint (3,000 ppm).

Lead containing 4” off-white ceramic wall tile (5,600 ppm).

The following material is not depicted:

- Asbestos containing drywall system with drywall and joint compound composite (<1% CH) and joint compound (3%CH) located in the restrooms and custodial room.

N
No Scale

Terracon

Lafayette Community Center

500 St Mary’s Road

Restroom and Custodial Room

Lafayette, California

Sample and Material Locations

Date	Drafted By
June 2021	ALC
Project Number	**Checked By**
R1217451	KMS

Sheet Name

Restrooms and Custodial Room

Sheet Number

Figure 1

Appendix 4:

Site Inspector Certificate

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 **Wyatt Renner**	Lead Sampling Technician	LRC-00002620	10/4/2021

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD.