SAHA | SAN ANTONIO HOUSING AUTHORITY
Opportunity Lives Here
818 S. FLORES ST. ⓪ SAN ANTONIO, TEXAS 78204 ⓪ www.saha.org

Procurement Department

QUICK QUOTE

For

Demolition of House & Driveway at 1021 El Paso Street

For

HOUSING AUTHORITY OF THE CITY OF SAN ANTONIO, TEXAS AND AFFILIATED ENTITIES

Date Issued: July 25, 2019

Quick Quote #: 1907-912-40-4945

Closes: August 8, 2019 at 2:00 PM

Prepared by:

Department of Procurement
of the
San Antonio Housing Authority
818 South Flores Street
San Antonio, Texas 78204

President and CEO.....…….…….. David Nisivoccia

1.0 The Housing Authority of the City of San Antonio, Texas and its affiliated entities (the "San Antonio Housing Authority or SAHA") hereby invites independent Contractors to submit bids for the demolition of a house located at 1021 El Paso Street and the deteriorated concrete drive and back patio, San Antonio, TX 78207 as specified herein.

2.0 SAN ANTONIO HOUSING AUTHORITY (SAHA) CONTACT: All questions or request for documents pertaining to this solicitation shall be addressed to Lucio Tovar, Contract Specialist 210-477-6172, fax 210-477-6172 or e-mail at lucio_tovar@saha.org.

3.0 APPLICABILITY: By submitting a bid, the bidder is agreeing to abide by all terms and conditions listed herein, including those terms and conditions within HUD Handbook 7460.8 REV 2, Procurement Handbook for Public Housing Agencies, dated 2/2007and HUD Table 5.1, Mandatory Contract Clauses for Small Purchases Other Than Construction and if attached; HUD 5370EZ, Davis Bacon or HUD Wage Decision.

4.0 SAHA's RESERVATION OF RIGHTS: SAHA reserves the right to:

4.1 Reject any or all bids, to waive any informalities in the solicitation process, or to terminate the solicitation process at any time, if deemed by SAHA to be in its best interest.

4.2 Terminate a contract awarded pursuant to this solicitation at any time for its convenience upon delivery of a 30-day written notice.

4.3 Determine the days, hours and locations that the successful bidder shall provide the items or services called for in this solicitation.

4.4 Reject and not consider any bid that does not, in the opinion of SAHA, meet the requirements of this solicitation, including but not necessarily limited to incomplete bids and/or bids offering alternate (not including "or equal" items) or non-requested items or services.

4.5 SAHA reserves the right to:

4.5.1 To make an award to the same bidder (aggregate) for all items; or,

4.5.2 To make an award to multiple bidders for the same or different items.

5.0 BIDDER'S RESPONSIBILITY: Each bidder shall carefully review and comply with all instructions provided herein, or provided within any named attachments or addenda.

6.0 DEADLINE: Bids are due at the time and date posted herein. SAHA reserves the right to extend the posted deadline at any time prior to the deadline.

7.0 QUESTIONS: All questions or request for information concerning this solicitation must be submitted in writing eight (8) days prior to the closing deadline.

8.0 HOLD PRICES/NON-ESCALATION: By submitting a bid, the bidder agrees to "hold" or not increase the bid prices for a minimum period of ninety (90) days. Quantities listed in this solicitation are for the purpose of determining best pricing per line item. Contractor shall field verify all quantities and dimensions.

9.0 METHOD OF AWARD: SAHA may, at its sole discretion, procure the applicable goods or services by issuance of a PO or execution of a contract. By submitting a bid, the successful proposer agrees to accept the PO or execute the contract.

10.0 FEES and FORMS:

10.1 FEE: All fees are all-inclusive of all related costs that a proposer will incur to provide the noted goods or services in compliance with this solicitation, including, but not limited to: employee wages and benefits, clerical support, travel and lodging, overhead, profit, licensing, insurance, materials, supplies, tools, equipment, long distance telephone calls, document copying and motor vehicle fuel, all costs shall be fully burdened.

10.2 FORMS: Bids shall be submitted utilizing the bid/fee forms included herein. Submission on forms other than the SAHA forms may result in disqualification of the response. Any bidder attached or included Terms and Conditions (Ts & Cs) are subject to acceptance by SAHA at its sole discretion.

11.0 AWARD CRITERIA: Award shall be made to the responsive and responsible contractor that submits the best value to SAHA using price and other factors listed below.

- Experience in demolition
- Timeline to safely demolish the structure

12.0 BID COSTS: SAHA shall not compensate any bidder for any costs that may be incurred in responding to this solicitation.

13.0 ASSIGNMENT OF PERSONNEL: SAHA retains the right to demand and receive a change in personnel assigned by the Contractor to provide services to SAHA if SAHA believes that such change is in its best interest.

14.0 UNAUTHORIZED SUB-CONTRACTING PROHIBITED: The successful bidder shall not assign any right, nor delegate any duty for the work proposed pursuant to this solicitation (including, but not limited to, selling or transferring the ensuing PO or contract without the prior written consent of SAHA. Any purported assignment of interest or delegation of duty, without the prior written consent of SAHA shall be void and may result in the cancellation of the PO or contract with SAHA.

15.0 LICENSING REQUIREMENTS: By submitting a bid the successful bidder certifies that he/she possess and will, prior to issuance of a PO or execution of a contract, present to SAHA, proof and/or certification of the following:

15.1 If applicable, local business license issued by the City of San Antonio.

15.2 If applicable, a copy of the bidder's license issued by the State of Texas licensing authority allowing the bidder to provide the services or products as detailed herein.

16.0 PERMITS: Contractor shall obtain all permits required to complete the work per the specifications.

17.0 INSURANCE: Contractor shall present to SAHA prior to PO issuance or execution of a contract, proof of insurance compliant with the requirements below.

Professional Liability	**Required Limits**
SAHA and its affiliates must be named as a Certificate Holder. This is required for vendors who render observational services to SAHA such as appraisers, inspectors, attorneys, engineers or consultants.	~~$1,000,000~~ Not Required for this project
Business Automobile Liability	**Required Limits**
SAHA and its affiliates must be named as an additional insured and as the certificate holder. This is required for any vendor that will be using their vehicle to do work on SAHA properties.	$500,000 combined single limit, per occurrence
Workers Compensation and Employer's Liability	**Required Limits**
Workers' Compensation coverage is Statutory and has no pre-set limits. Employer's Liability limit is $500,000. Workers' Compensation is required for any vendor made up of more than two people. A Waiver of Subrogation in favor of SAHA must be included in the Workers' Compensation policy. SAHA and its affiliates must be a Certificate Holder.	Statutory $500,000
Commercial General Liability	**Required Limits**
This is required for any vendor who will be doing hands on work at SAHA properties. SAHA and its affiliates must be named as an Additional Insured and as the Certificate Holder.	$1,000,000 per accident $2,000,000 aggregate

18.0 INVOICING: To help insure timely payments and unless utilizing a progress payment schedule invoices shall be sent to the following address:

Accounts_Payable@saha.org.

If contractor lacks electronic invoicing capability they may send invoices to:

San Antonio Housing Authority,
Accounts Payable,
P.O. Box 830428,
San Antonio, TX 78283-0428.

Contractor shall invoice SAHA within 60 days after the delivery of the goods or service. If contractor fails to invoice within 60 days SAHA reserves the right to not pay the invoice. In an effort to be more efficient, SAHA processes all payments electronically. Contractors will be required to complete a direct deposit form. SAHA's standard payment terms are net 30 days.

19.0 Fair Labor Standards Act: Both parties hereby agree to comply with the provisions of the Fair Labor Standards Act (29 U.S.C. 201, et seq).

20.0 Indemnification. The Contractor shall indemnify and hold harmless SAHA and its officers, agents, representatives, and employees from and against all claims, losses, damages, actions, causes of action and/or expenses resulting from, brought for, or on account of any bodily injury or death of an employee of the Contractor, its agent, or its subcontractor of any tier received or sustained by any persons or property growing out of, occurring, or attributable to any work performed under or related to this Agreement, resulting in whole or in part from the negligent acts or omissions of the Contractor, any subcontractor, or any employee, agent or representative of the Contractor or any subcontractor. **CONTRACTOR ACKNOWLEDGES AND AGREES THAT THIS INDEMNITY CONTROLS OVER ALL OTHER PROVISIONS IN THE AGREEMENT, SURVIVES TERMINATION OF THIS AGREEMENT.**

Contractor shall indemnify and hold harmless SAHA, their agents, consultants and employees from and against any and all property damage claims, losses, damages, costs and expenses relating to the performance of this Agreement, including any resulting loss of use, *but only to the extent caused by the negligent acts or omissions of Contractor*, its employees, sub-subcontractors, suppliers, manufacturers, or other persons or entities for whose acts Contractor may be liable.

21.0 SECTION 3: Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3.

22.0 EPA REQUIREMENTS (This section applies only to Painting): Contractor must be EPA certified. Contractors performing renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities, and schools built before 1978 must be certified by EPA and must follow specific work practices to prevent lead contamination.

This includes, but is not limited to:

- **Contain the work area**
- **Minimize dust**
- **Clean up thoroughly**

Contractors must provide to SAHA and tenants a copy of the EPA pamphlet *"Renovate Right: Important Lead Hazard Information for Families, Childcare Providers and Schools,"* before the renovations start. Federal law requires this in housing, child-care facilities and schools built before 1978 and when renovating six square feet or more of painted surfaces in a room for interior projects or more than twenty square feet of painted surfaces for exterior projects. For a copy of this pamphlet go to**:**

www.epa.gov/lead/pubs/renovaterightbrochure.pdf

23.0 GENERAL CONDITIONS:

23.1 Scope of Work is Attachment A.

23.2 Location of Property:

1021 El Paso Street
San Antonio, TX 78207

23.3 WARRANTY: All services and goods provided pursuant to this solicitation and the resulting contract shall be covered by the most favorable commercial warranties given to any customer for same or similar supplies or services, but in any event such goods and services shall be warranted for at least a period of two (2) years.

23.4 OR EQUAL: Catalogs, brand names or manufacturer's references where provided are descriptive only and indicate type and quality desired. Bids on brands of like nature and quality will be considered unless specified otherwise. If bidding other than the referenced manufacturer, brand or trade name, Bidder must provide a complete description of product offered, and illustrations and must be included in the bid submittal. Failure to include the above referenced data will require Contractor to furnish specified brand names, numbers, etc.

23.5 Acceptance by SAHA is required prior to payment. Acceptance will be based on adherence to the specifications, best industry practice and inspection by SAHA personnel.

23.6 Contractor shall supply all material, labor and equipment to complete the requirement of this solicitation unless otherwise specified in this solicitation.

23.7 Contractor shall dispose of all debris and trash offsite in accordance with all local, State and Federal laws and codes. At no time will Contractor discard any debris or trash into any SAHA refuse container.

23.8 Responses may be hand delivered to:

San Antonio Housing Authority,
Attn: Lucio Tovar, Contract Specialist
818 S. Flores, San Antonio, TX 78204
or
Faxed to: Attn. Lucio Tovar at 210-477-6172
or
Emailed to: lucio_tovar@saha.org

Quote Fee Sheet
Quick Quote Closes on August 2, 2019 at 2:00 PM
1907-912-40-4945

State Law limits procurements using this method of solicitation to $50,000.00 or less.

1. **Fee: Shall be all inclusive of all labor, materials, equipment, insurance, permits, overhead and profit, etc. to execute the demolition of the specified structure.**

Item	Unit	Cost	Completion
Demolition of House and Concrete Driveway. Note: Old concrete patio to be removed as part of solicitation.	Job	**$**	Days

If the Contractor fails to list days to complete, the project must be completed in 15 calendar days from notification to begin work.

2. **Additional Information:** Enclose a one page summary of your company's {insert other criteria from Section if applicable, if not delete and renumber}.

3. **Sub-Contractors:** Proposer shall identify his sub-contractors if any:

   a) _____

   b) _____

Acknowledge Receipt of Addenda

Addendum #1_____ Date_____

Addendum #2_____ Date_____

Addendum #3_____ Date_____

_____ _____
Signature **Date**

_____ _____
Printed Name **Company**

_____
E-mail address if available

_____ _____
Phone **Fax**

Bidder's Certification

By signing below, Bidder certifies that the following statements are true and correct:

1. He/she has full authority to bind Bidder and that no member Bidder's organization is disbarred, suspended or otherwise prohibited from contracting with any federal, state or local agency,

2. Items for which Bids were provided herein will be delivered as specified in the Bid,

3. In performing this contract, the contractor(s) shall comply with any and all applicable federal, state or local laws including but not limited to: Occupational Safety & Health, Equal Employment Opportunity, Immigration and Naturalization, The Americans with Disabilities Act, State Tax and Insurance Law, and the Fair Housing Act.,

4. Bidder agrees that this bid shall remain open and valid for at least a period of 90 days from the date of the Bid Opening and that this bid shall constitute an offer, which, if accepted by SAHA and subject to the terms and conditions of such acceptance, shall result in a contract between SAHA and the undersigned Bidder,

5. He/she has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with this Bid,

6. Bidder, nor the firm, corporation, partnership, or institution represented by the Bidder, or anyone acting for such firm, corporation or institution has violated the antitrust laws of the State of Texas or the Federal Antitrust laws, nor communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business,

7. Bidder has not received compensation for participation in the preparation of the specifications for this IFB,

8. Non-Collusive Affidavit: The undersigned party submitting this bid hereby certifies that such bid is genuine and not collusive and that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any Bidder or person, to put in a sham Bid or to refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other Bidder, to fix overhead, profit or cost element of said bid price, or that of any other Bidder or to secure any advantage against SAHA or any person interested in the proposed contract; and that all statements in said bid are true.

9. Child Support: Pursuant to Section 231.006 (d) of the Texas Family Code, regarding child support, the bidder certifies that the individual or business entity named in this bid is not ineligible to receive the specified payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate.

10. Lobbying Prohibition: The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

11. Non-Boycott of Israel: SAHA may not enter into a contract with a company for goods and services unless the contract contains a written verification from the company that; (i) it does not Boycott Israel; and (ii) will not Boycott Israel during the term of the contract. (Texas Government Code chapter 2270) by accepting these General Conditions and any associated contract, the CONTRACTOR certifies that it does not Boycott Israel, and agrees that during the term of this contract will not Boycott Israel as that term is defined in the Texas Government Code Section 808.001, as amended.

12. **TX Gov. Code 2252.152:** Prohibits a government entity from awarding a contract to a company identified as Iran, Sudan, or a Foreign Terrorist Organization as identified on a list maintained by the Texas Comptroller of Public Accounts. By signature hereon bidder certifies that it is not affiliated in any manner with the businesses on this list.

Submitted by: _____ Date: _____
(Firm)

_____
(Signature) (Printed name and title)

_____
(Business address)

_____ _____
(Phone) (E-mail)

ATTACHMENT A
Scope of Work/Specifications
And Pictures

Concrete to be removed

Concrete to be removed

Concrete to be removed

Concrete to be removed

Concrete to be removed

SCOPE OF WORK

The demolition contractor will provide the following services:

1. Provide all labor, material, supplies, equipment, supervision and insurance, etc. to accomplish the abatement as per Terracon attached specifications and demolition of the entire existing structure, shed, concrete driveway and old chain link fence in front of property. Respondents must provide additional detail regarding the schedule to include times for removal work, starting and ending dates for each activity and final timeline to complete the project.
2. Existing city curbs and sidewalks are to remain in place if present.
3. Leave lot level where the foundation was removed and insure that the area is level, smooth and free of debris after demolition and does not allow for standing water. If fill is needed it shall not be spoil materials.
4. Install a temporary construction fence around the site to be demolished before the actual demolition is scheduled to occur.
5. Cap any existing water and sewer lines to include underground electrical conduit below grade per COSA requirements.
6. Remove debris in accordance with City, State and Federal regulations and dispose of at a landfill meeting regulatory requirements. Respondent will provide location of landfill being used to dispose of debris.
7. Perform all work in accordance with OSHA, EPA, TDH, and Federal, State and local rules and regulations.
8. Fill and lightly compact any depressions or holes left by the removal with sandy loam topsoil free of debris and noxious weeds etc.
9. Contractor is responsible to check for any utilities (call 811) and have them marked prior to start of demolition.

In connection with these services, the contractor must perform demolition related tasks associated with this project to include but not limited to the following:

1. Obtain and pay for all required permits.
2. Establish a mutually agreeable schedule with SAHA regarding times and length of daily working hours for demolition activities that will minimize the impact to the neighborhood.
3. Must comply with all governing EPA, State and Local notification regulations before starting demolition.
4. Install temporary construction fence or other suitable barricade for site security and safety prior to any demolition activity.
5. Demolish entire structure to include the foundation and/or footings.
6. Implement measures that will insure control of soil erosion-sedimentation and properly deal with excavating, filling and grading for soil materials, excavating, backfilling and site grading.
7. Minimize other impacts to the neighborhood. Implement measures that will insure dust and noise control, protection of people from injury (to include safe passage around the demolition site) and items not being demolished.
8. Load and haul-off of all debris created as a result of these demolition activities to an approved landfill site and in accordance with all hauling and disposal regulations. Contractor shall collect, remove and dispose of chemicals, gases, explosives, acids, flammables and other dangerous materials before demolition commences. SAHA reserves the right to request landfill records indicating receipt and acceptance of debris delivered to

include any hazardous waste. Contractor will be responsible for payment of all disposal fees.

9. Backfill area where building foundation and site concrete flatwork is removed free from debris.
10. Protect trees that are located in close proximity to the structure being demolished (as applicable) in accordance with all City of San Antonio ordinance(s) and requirements. Contractor will be responsible for any trees that they damage or remove and shall be responsible for replacement in accordance with the City of San Antonio requirements.
11. All demolition debris shall be removed from site at the end of each work day.

ASBESTOS ABATEMENT SPECIFICATIONS

VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS

Terracon Project No. 90187142

August 24, 2018

Prepared for:
San Antonio Housing Authority
San Antonio, Texas

Prepared by:
Terracon Consultants, Inc.
San Antonio, Texas
TDSHS Consultant Agency License No. 100157

Will C. DeVeau
Individual Asbestos Consultant
TDSHS License No. 105734
Expires 03/10/2019

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Attachments:

Abatement Drawing
Asbestos Inspection Report Information

Will C. DeVeau / TDSHS IAC # 105734
Expiration Date: 03/10/2019

SCOPE OF WORK - ASBESTOS ABATEMENT

Project: Vacant Residence
1021 El Paso Street
San Antonio, Texas
Terracon Project No. 90187142

Asbestos abatement will be accomplished in one phase. Asbestos abatement is to be conducted in interior and exterior spaces to accommodate proposed demolition activities.

I. Material, Quantity and Location

The work will consist of the removal of the following materials in the approximate quantities listed at the site. All work will be conducted by properly licensed personnel in accordance with applicable Federal, State and Municipal regulations. ***(Note: The material quantities listed below are estimates only. The Contractor is responsible for verifying material quantities and locations prior to submission of the price quote to the Owner. The Contractor will perform work for the materials indicated, regardless of actual quantities. Please see the attached drawings for approximate locations.)***

- Drywall Construction – The multi-colored drywall construction materials with an orange peel texture utilized on the walls and ceilings of the Store were found to contain 5% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 3,800 square feet of these materials will be removed in the Store area.

- Drywall Construction – The multi-colored drywall construction materials with an orange peel texture utilized on the majority of walls and ceilings in the Apartment (behind wood panel) were found to contain 2% - 3% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 1,580 square feet of these materials will be removed from the above listed areas.

- Drywall Construction – The green drywall construction materials with an orange peel texture utilized on the majority of walls and ceilings in the House behind wood paneling (except Room #3 ceiling) were found to contain 2% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 1,800 square feet of these materials will be removed from the above listed areas.

Will C. DeVeau / TDSHS IAC # 105734
Expiration Date: 03/10/2019

- Drywall Construction – The green drywall construction materials with an orange peel texture utilized on the walls and ceiling in the House Restroom were found to contain 2% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 530 square feet of these materials will be removed from the above listed areas.

- Plaster – The green plaster materials with a brick pattern utilized on the exterior walls of the Apartment (north and west) and interior wall of the Apartment Restroom (west) were found to contain 5% Chrysotile asbestos. The asbestos-containing plaster materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 450 square feet of these materials will be removed from the above listed areas.

- Plaster – The white plaster materials with a medium texture utilized on the south wall of Apartment Room #1 was found to contain 3% Chrysotile asbestos. The asbestos-containing plaster materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 120 square feet of these materials will be removed from the above listed area.

- Resilient Floor Tile and Associated Mastic – The 9” x 9”, maroon floor tile with white streaks and black mastic utilized as the flooring in the Store Sales Area was found to contain 5% Chrysotile asbestos in the floor tile and 5% Chrysotile asbestos in the mastic. The asbestos-containing floor tile and mastic materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 360 square feet of these materials will be removed from the Store Sales Area.

- Exterior Window Glazing Compound – The white exterior window glazing compound materials utilized on the exterior windows of Apartment Room #2, Apartment Room #3, Apartment Restroom, and Store Kitchen were found to contain 5% Chrysotile asbestos. The asbestos-containing window glazing compound materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that approximately 120 linear feet of these materials will be removed from the above listed areas.

II. Work Practices

A. Respiratory Protection:

During the removal of any asbestos-containing drywall construction, plaster, flooring and window glazing compound materials from the building, half-face respirators, equipped with filter cartridges designed for asbestos-containing dusts and mists, vapors, and color coded in accordance with ANSI Z228.2 (1980), will be employed by all workers working within the regulated area(s). Certification that the workers

Will C. DeVeau / TDSHS IAC # 105734
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have been fit tested in accordance with current OSHA guidelines will be provided as part of Worker Documentation. **The Abatement Contractor shall ensure use of the appropriate respiratory protection for the work being performed and recognizes that these requirements are only minimum acceptable standards.** The **Contractor** will furnish respirator filter cartridges as required by the **Consultant**.

B. Protective Clothing

During removal of the drywall construction, plaster (interior/exterior), and flooring, materials, single protective suits, as a minimum, will be worn by the workers and boots, gloves, eye protection and hard hats will be available to each worker as needed. Each suit will be properly disposed of at the conclusion of each work period. The **Contractor** will furnish protective suits for the **Consultant's** use during the project. The workers performing the abatement will decontaminate through a three-chambered wet decontamination system which will be constructed as an integral part of the containment.

During removal of the exterior window glazing compound materials (component removal), double protective suits will be worn by the workers and boots and gloves will be available to each worker as needed. The workers will remove the outer suit within the regulated work area and will proceed directly to the decontamination area. Each suit will be properly disposed of at the conclusion of the work period. The workers performing the abatement will decontaminate through a single-chambered wet decontamination system which will be constructed in a remote location easily accessible by workers who will proceed to the decontamination area after removing the outer suit within the regulated work area.

C. Containment/Temporary Facilities

The asbestos-containing drywall construction, interior/exterior plaster, and flooring materials are intended to be removed using wet removal techniques under negative pressure within a contained area which has an integral three-chamber wet decontamination unit. The full containment will consist of a double layer of 4-mil poly covering all walls not scheduled for removal and a double layer of 6-mil poly covering all floor areas not scheduled for removal within the contained area. Critical barriers consisting of 6-mil poly will be installed on all building openings. Inverted prep will not be required, however, secondary prep may be necessary directly above and adjacent to areas where drywall construction materials are scheduled to be removed, negative pressure (minimum of -0.020 in/H20) will be maintained in all work areas. A functioning manometer will be required to show proof of appropriate pressure. Any remaining furnishings and/or contents will be removed from the work area prior to commencement of work.

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The **Contracto**r will construct a three-chambered wet decontamination system consisting of a serial arrangement of connected rooms or spaces (Changing Room, Shower Room, and Equipment Room), with overlapping door flaps, constructed as an integral part of any containment. The Decontamination System shower chamber will consist of a hard enclosure with drain and water supply fittings designed for the purpose rather than a disposable/pop up chamber. Disposable/pop up chamber units are acceptable for the clean and dirty room portions of the decontamination system. The **Contracto**r shall require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit.

Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing. Construct using polyethylene sheeting, at least 6 mil in thickness, to provide an airtight seal between the Changing Room and the rest of the building. Locate so that access to Work Area from Changing Room is through Shower Room. Separate Changing Room from the building by a polyethylene overlapping flapped doorway. Maintain the floor of the changing room in a dry and clean condition at all times. Do not allow overflow water from shower to wet the floor in the changing room. Damp wipe all surfaces after each shift change with a disinfectant solution.

Provide a continuously adequate supply of disposable bath towels.

Provide all mandated warning signage, and posted information for all emergency phone numbers and procedures.

Shower Room: Provide a completely water tight, design built operational shower to be used for transit by appropriately dressed workers heading into the Work Area from the Changing Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining floor in the shower pan at an elevation that is at the top of pan.

Separate this room from the Changing and Equipment Rooms with moveable overlapping flaps fabricated of 6 mil polyethylene.

Provide splash-proof entrances to Changing and Equipment Rooms with 2 doors arranged in the following configuration:

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At each entrance to the Shower Room construct a doorframe out of lumber, PVC Pipe or equivalent. Attach to this door frame two overlapping flaps fastened at the head (top) and jambs (sides). Overlap the flaps that present a shingle-like configuration to the water stream from the shower. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.

Provide shower head and controls. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.

Provide a continuously adequate supply of soap and maintain the area in a sanitary condition. Arrange so that water from showering does not splash into the Changing or Equipment Rooms.

Provide flexible hose showerhead. Pump wastewater to a sanitary sewer drain or to storage for use in amended water. If pumped to a sanitary sewer drain, provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Provide Hose Bib.

Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6 mil polyethylene overlapping flap doorway. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6 mil overlapping flapped polyethylene.

Work Area: Separate work area from the Equipment Room by polyethylene barriers. If the airborne asbestos level in the work area is expected to be high, add an intermediate cleaning space between the Equipment room and the Work area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil polyethylene per shift change and remove contaminated layer after each shift.

Waste Load Out Area: where applicable, the **Contracto**r will construct a waste load out chamber separately from the three chambered personnel decontamination unit. The waste load out chamber will be connected to the work area, and ingress and egress will be through an overlapping flapped doorway constructed of six millimeter polyethylene sheeting. The exit of the waste load out area will also be constructed with six millimeter polyethylene overlapping flapped doorway. The water generated during the waste load out procedures as a result of cleaning the outside of the bags will be properly filtered and/or containerized prior to discharge into the sanitary sewer.

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In Exterior Locations Where Materials are to be removed (asbestos-containing window glazing compound)**,** the work area will be Regulated with appropriate barrier tape and the Contractor shall display all appropriate OSHA and TDSHS signage. The Workers shall be in proper protective equipment and decontaminate through a wet decontamination unit erected in a central location accessible to the workers. The materials will be removed in an exterior regulated area with a double layer of 6-mil polyethylene covering the area in the vicinity/below the work areas utilizing wet methods.

D. Removal

The **Contractor** will perform the removal and disposal in accordance with current local, state and federal regulations.

1. **Asbestos-Containing Drywall Construction Materials:** Comply with wet removal procedures. Removal shall be accomplished under negative pressure within a contained area which has an integral three-chamber wet decontamination unit. The full containment will consist of a double layer of 4- mil poly covering all walls not scheduled for removal and a double layer of 6- mil poly covering all floor areas not scheduled for removal within the contained area. A single layer of 6-mil polyethylene shall be secured with tape and/or spray adhesive atop any areas of flooring scheduled for removal in the vicinity of the gypsum wallboard removal (as a drop sheet). Critical barriers consisting of 6-mil poly will be installed on all building openings. Inverted prep will not be required, however, secondary prep may be necessary directly above and adjacent to areas where drywall construction materials are scheduled to be removed. Negative pressure (minimum of -0.020 in/H20) will be maintained in all work areas. A functioning manometer will be required to show proof of appropriate pressure. **Where specified for removal, the drywall construction materials will be removed in their entirety including any associated overspray texture, insulation, Kraft paper, and/or fastening devices and disposed of as ACM.**

   The drywall construction materials will be addressed as follows: Spray asbestos-containing materials with amended water or removal encapsulant. During the removal of the drywall construction materials, continual wetting of the material will occur. The drywall construction materials will be removed as intact as possible. Any blown-in insulation, batt insulation, Kraft paper and drywall texture overspray materials shall be removed and disposed of as **ACM**. Exposed nail heads or hangers will be removed with the drywall construction materials. The removed materials will be placed in disposable bags or wrapped in poly as soon as practical, and no later than the end of the work period. Loose (unbagged) waste materials will not remain in the work area after the end of the work shift. The clean surfaces will

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be encapsulated after passing a visual inspection conducted by a Terracon representative. The waste resulting from the removal operations will be double bagged and/or component wrapped in two layers of 6-mil poly, labeled and disposed of in accordance with the guidelines discussed in Item E of this section. **If woven poly or burlap bags (onion sacks) are utilized for bagging of waste materials, the woven bags will be double bagged in proper poly disposal bags prior to loading into the waste receptacle.**

2. **Asbestos-Containing Plaster Texture Materials:** Comply with wet removal procedures within a contained area as specified for drywall construction materials previously listed. The asbestos-containing plaster materials shall be removed in their entirety including any associated insulation, black iron, fixtures**,** felt, and/or fastening devices and disposed of as ACM.

   The plaster materials will be addressed as follows: Spray asbestos-containing materials with amended water or removal encapsulant. During the removal of the plaster materials, continual wetting of the material will occur. The plaster materials will be removed as intact as possible. The black iron and metal lath components will be removed with the wall construction materials. The removed materials will be placed in disposable bags or wrapped in poly as soon as practical, and no later than the end of the work period. Loose (unbagged) waste materials will not remain in the work area after the end of the work shift. The clean surfaces will be encapsulated after passing a visual inspection conducted by a Terracon representative. The waste resulting from the removal operations will be double bagged, labeled and disposed of in accordance with the guidelines discussed in Item E of this section. **If woven poly or burlap bags (onion sacks) are utilized for bagging of waste materials, the woven bags will be double bagged in proper poly disposal bags prior to loading into the waste receptacle.**

3. **Asbestos-Containing Resilient Floor Tile and Associated Black Mastic Materials:** Comply with wet removal procedures within a contained area as specified for drywall construction materials previously listed. The asbestos-containing flooring materials shall be removed in their entirety. Work area preparation (post abatement of drywall construction and plaster materials) within the existing containment will consist of a single layer of 4-mil poly splash guards extending 4 feet (as a minimum) up the walls and/or wood/metal studs of the work area. If any carpeting is glued directly on floor tile and/or mastic, it will be treated as asbestos-containing materials. If any areas of carpeting are installed by tack strips and can be removed without disturbing the underlying floor tile and/or mastic, they can be removed as general construction debris prior to starting any abatement of the identified asbestos-containing materials.

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The flooring materials will be addressed as follows: Spray the asbestos- containing flooring materials with amended water or removal encapsulant. During the removal of the materials, continual wetting of the material will occur. Any mastic will be removed with the selected mastic remover and/or by manual methods. A buffer may be used to remove the mastic. The removed materials will be placed in disposable bags as soon as practical, and no later than the end of the work period. Loose (unbagged) waste materials will not remain in the work area after the end of the work shift. The clean surfaces will be encapsulated after passing a visual inspection conducted by a Terracon representative. The waste resulting from the removal operations will be double bagged, labeled and disposed of in accordance with the guidelines discussed in Item E of this section. **If woven poly or burlap bags (onion sacks) are utilized for bagging of waste materials, the woven bags will be double bagged in proper poly disposal bags prior to loading into the waste receptacle.**

4. **Asbestos-Containing Window Glazing Compound Materials:** Removal of the asbestos-containing exterior window glazing compound shall be accomplished by removing the window frames as intact components with as little disturbance as possible with wet removal procedures in regulated work areas. **Workers shall wear proper protective equipment during removal and decontaminate through a remote single-chamber wet decontamination unit as a minimum, erected in a central location readily accessible to the workers.** The exterior regulated work area will consist of asbestos specific barrier tape, and a double layer of 6-mil polyethylene, as a **minimum,** extending out a **minimum** of five feet (5') on the ground area in the vicinity of and below the window glazing compound materials and window components to be removed. The edges of the poly covering the ground areas will be weighted or staked to insure that the poly remains in place during removal activities. A single layer of 6-mil polyethylene shall be installed on the inside of the window opening to act as a critical barrier.

   The window glazing compound materials and window components will be addressed as follows: Thoroughly saturate the window glazing compound material with a removal encapsulant or cover the glazing compound materials with duct tape and/or polyethylene. This method of removal will allow the window glazing compound material to remain intact in the window frame prior to the entire component being removed and wrapped in two layers of 6-mil polyethylene for disposal. Following removal of the window units, the window opening area shall be wet wiped or HEPA vacuumed. **The mechanical fasteners, which secure the window units, if applicable, will be removed with the window glazing compound remaining in the window frame component.** The removed materials will be placed in disposable bags or wrapped in poly as soon as practical, and no later than the end of the work period. Loose (unbagged) waste materials will not remain in the work area after the

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end of the work shift. The clean surfaces will be encapsulated after passing a visual inspection conducted by a Terracon representative. The waste resulting from the removal operations will be double bagged, labeled and disposed of in accordance with the guidelines discussed in Item E of this section.

E. Disposal

1. Once the ACM is removed (including containment construction materials, i.e., poly, tape, etc.) it will be double bagged or component wrapped (2-layers of 6-mil poly) and labeled in accordance with Texas Department of State Health Services (TDSHS) and OSHA guidelines. Pre-printed Generator Labels shall be affixed to each bag or wrapped component prior to being placed in the lined waste disposal dumpster or trailer.

2. All waste will be labeled in accordance with 29 CFR 1910.1200 (f) of OSHA's Hazard Communication standard, and will contain the following information:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

3. The area between the bag-out area and the prepared waste receptacle shall be regulated with barrier tape during bag-out operations. The waste receptacle will have asbestos specific signage attached during loading and unloading activities. The waste dumpster or trailer shall remain secured during all other periods.

4. The waste will be disposed in an approved landfill. The waste will be transported to the landfill in a lined closed top receptacle. Verification of disposal at the landfill will be provided to the Owner by **Contractor** via the TDSHS Waste Manifest.

F. Clearance

Aggressive Phase-Contrast Microscopy (PCM) clearance sampling will be conducted in accordance with the NIOSH 7400 Method A, in any contained area in which abatement has occurred.

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III. Contractor Submittals

Submittals required for proper execution include but are not limited to the following:

Pre-Construction Submittals (submitted to **Consultant**)

Regulatory Notification Information
Plan of Action
Fire Action Plan
Emergency Phone List
Project Schedule
Copy of Written Respirator Program which conforms to 29 CFR 1910.134(b)
OSHA Material Safety and Data Sheets (Product Handling)

Construction Submittals (submitted to **Consultant** before start of work on-site)

Licenses: Contractor, Supervisor, Transporter(s)
NESHAP Training Certificate
Personal Air Monitoring Lab Results
List of Workers
Worker Registration Certificates
Medical Examination Results
Worker Training Certificates
Respiratory Fit Test Certificate
Certificates of Worker Acknowledgement

Project Closeout (**submitted to Consultant no later than ten (10) working days following completion of the project**)

Contractor's Daily Log
Waste Disposal Manifest Copies
Certificate of Completion (if required)
Releases, Occupancy Permits (if applicable)
Personal Air Monitoring Lab Results (If applicable)

RESUBMISSION:

Revise submittals as required and resubmit as specified for initial submittal. Indicate any changes which have been made other than those requested by **Consultant**.

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CONTRACTOR RESPONSIBILITIES:

Illegible submittals will be rejected and returned for re-submittal.

Schedule submittals according to general flow of Work and so as to allow for adequate and timely review of submittals by **Consultant**.

Review submittals prior to submission and submit to **Consultant** in accordance with provisions herein.

Verify field measurements, construction criteria, catalog numbers and similar data.

Coordinate submittals with requirements of Work and Contract Documents.

Contractor's responsibility for errors or omissions is not relieved by **Consultant's** review. **Contractor's** responsibility for deviations from requirements of Contract Documents is not relieved by **Consultant's** review, unless **Consultant** is notified of deviations in writing at time of submittal, and gives written review of specific deviations.

Do not begin work which requires submittals until reviewed submittals have been reviewed and approved by **Consultant**.

If required, reproduce and distribute copies after **Consultant's** review.

CONSULTANT'S RESPONSIBILITIES:

Review submittals within two working days or indicate in writing reasons for reviews which require additional time.

Review for conformance with design concept of project and information given in Contract Documents.

Indicate results of review and return submittals to **Contractor** for distribution.

Consultant is not responsible for verification of field measurements, construction criteria, catalog numbers and other similar data.

Review of separate items does not constitute review of an assembly in which items function.

IV. Construction Notes

No asbestos related activities will take place at the work site without prior notification to the **Consultant** by the **Contractor** and the presence of the **Consultant** at the work site.

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The **Contractor** shall be responsible for submission of the TDSHS 10-day Asbestos/Demolition Notification Form. The **Owner** shall be responsible for payment of notification fees associated with the TDSHS 10-day Asbestos/Demolition Notification Form.

The **Contractor** or the **Owner**, at the **Owner's** discretion, will remove all movable items from the work areas prior to commencement of abatement activities.

During the pre-cleaning phase of abatement operations, all exposed non-movable equipment will be wet wiped, HEPA vacuumed and covered with six-mil polyethylene.

The **Contractor** will be responsible for providing water and electricity to the work areas and as needed by the Consultant. **Water and electrical service are not present at the site at this time, and will not be available for Contractor use.** All electrical connections and outlets shall be protected at all times by ground fault circuit interrupters.

The **Contractor** is to be current and in good standing on all asbestos abatement notification fees. The **Owner** reserves the right to verify **Contractor's** standing.

The **Contractor** shall maintain all records required by TDSHS Texas Asbestos Health Protection Rules Section 295.62 Operations: Recordkeeping

Contractor parking and disposal dumpster areas will be as designated by the **Owner**. The **Contractor** will keep work and parking areas clean.

Prior to any asbestos abatement activities, the **Contractor** will provide a licensed electrician to provide power lock-out and tag-out of all circuits to be affected by the asbestos abatement activities. Lock-out/Tag-out must meet OSHA 1910.147 requirements. All electrical circuits in the regulated and/or contained area shall have ground-fault interrupter (GFCI) units installed outside the contained work area.

Exhaust negative pressure ventilation system to outside of building. Plywood inserts or a similar hard barrier shall be required for building security on any building openings used for exhaust purposes.

The **Contractor** shall arrange the use of on-site toilet facilities with the Owner or provide temporary self-contained toilet units for use by **Contractor**'s personnel throughout the duration of abatement activities.

The **Contractor** shall install one functioning fire extinguisher in the work area for each 1,000 square feet of work area or part thereof. Additional fire extinguishers shall be installed in the Equipment Room and Clean Room of the decontamination unit.

The **Contractor** shall conduct a safety meeting for **Contractor's** employees with emphasis on operation of fire extinguishers and emergency exits in case of fire.

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Contractor shall have posted emergency phone numbers for the fire department and police.

Contractor shall store a minimum of volatile substances on the job site and in fire resistant containers only.

Contractor will furnish disposable suits, respirator filter cartridges and routing of water and GFCI-equipped electrical services for **Consultant's** use for the duration of the project.

Stop Work Order – The Owner or the Consultant may issue a verbal or written Stop Work Order when deemed necessary by the Owner or Consultant at any time during the abatement activities. When a Stop Work Order is issued, the Contractor will cease all activities requested, and shall not resume those activities until authorized by the Owner or Consultant.

V. Products

Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the **ACM** and retardation of fiber release during disturbance of the material. As an option, the **Contractor** may utilize water to which a mild detergent has been added in lieu of a commercially available surfactant product.

Disposal Bags: Provide as a minimum, individual, 6 mil thick, leak-tight, manufactured polyethylene bags.

Disposal Bag Labels: Provide labels with **Owner's** name, **Contractor's** name, Project site address and the following warnings and labels, in accordance with regulatory requirements. Labels shall be lettered with indelible ink.

First Label:

CAUTION
CONTAINS ASBESTOS FIBERS
AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

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Third Label: Provide in accordance with U.S. Department of Transportation Regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule:

RQ HAZARDOUS
SUBSTANCE,
CLASS 9,
NA 2212, PG III
(ASBESTOS)

Polyethylene Wrap: Provide minimum 6 mil polyethylene sheeting as a wrapping for large sections of rigid waste material and for construction of floors and critical barriers in the containment areas. Provide minimum 4 mil polyethylene sheeting for construction of walls of the containment.

Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of **ACM**. Utilize an encapsulant that will meet or exceed the results produced by use of Amended Water, as described above.

Lockdown Encapsulant: Provide a tinted or untinted encapsulant designed specifically for lockdown of asbestos fibers.

Sprayer: Provide an airless-type sprayer suitable for the type and volume of work being performed. For small volume work, provide a hand pump type pressure-can sprayer fabricated out of either metal or plastic, equipped with a metal or plastic wand at the end of a hose that can deliver a stream or spray of liquid under pressure.

Mastic Remover/Solvent: Solvents with a flash point of 140 degrees Fahrenheit or below will not be used.

VI. Air Monitoring Services

The **Consultant** shall verify that the Work performed is in compliance with applicable regulations and that the building areas beyond the Work Area and the outside environment remain free of contamination. This section also sets forth airborne fiber levels both inside and outside the Work Area as action levels, and describes the action required by the **Contractor** if an action level is met or exceeded.

AIR MONITORING:

The **Consultant** will be conducting air monitoring throughout the course of the project.

Base Line Fiber Counts: The **Consultant** will monitor airborne fiber counts prior to start of Work. The purpose of this air monitoring will be to establish existing airborne fiber counts prior to beginning abatement operations.

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Work Area Isolation: The **Consultant** will monitor airborne fiber counts outside the Work Area. The purpose of this air monitoring will be to detect faults in the Work Area isolation including, but not limited to, contamination of the building outside of the Work Area with airborne asbestos fibers, failure of filtration or rupture in the ventilation system, or contamination of the exterior of the building with airborne asbestos fibers.

Should any of the above occur, the **Contractor** shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the **Consultant**.

Work Area Airborne Fiber Count: The **Consultant** will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the integrity of Work Area isolation procedures that protect the balance of the building or outside of the building from contamination by airborne fibers.

Final Clearance: The **Consultant** will conduct Final Clearance air sampling in accordance with the Final Clearance Section of this Specification. Aggressive PCM clearance sampling will be conducted in accordance with the NIOSH 7400 Method A, in any contained area in which abatement has occurred. Three (3) clearance samples will be run for each contained work area at a minimum volume of 1,250 liters per sample. Clearance will be achieved if no sample is reported greater than 0.01 fibers per cubic centimeter (≤0.01 f/cc) by the analysis report from the TDSHS licensed laboratory.

AIRBORNE FIBER COUNTS:

Inside Work Area: Maintain an average airborne count in the Work Area of less than 0.2 fibers per cubic centimeter. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any Work shift or eight (8) hour period exceeds 0.2 fibers per cubic centimeter, stop Work and leave ventilation system in operation. Do not recommence Work until authorized by the **Consultant**.

Outside Work Area: Maintain an average airborne count outside the Work Area of less than or equal to Base Line.

If any air sample taken outside the Work Area exceeds the Base Line, immediately and automatically stop Work until the source of the high fiber readings can be determined by the **Consultant**. If no outside non-asbestos source can be located by the **Consultant** and if this air sample was taken inside the building and outside of Critical Barriers around the Work Area, immediately erect new Critical Barriers to isolate the affected area from the balance of the building or as instructed by the **Consultant**.

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Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).

Decontaminate the affected area in accordance industry standard methods.

Respiratory protection as set forth in the Work Practices Section shall be worn in affected area until area is cleared for reoccupancy.

Leave Critical Barriers in place until completion of Work and insure that the operation of the negative pressure ventilation system in the Work Area results in a flow of air from the balance of the building into the affected area.

If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a new decontamination facility.

After visual inspection in the extended work area, remove Critical Barriers separating the work area from the affected area. Final Clearance air samples will be taken within the entire area.

Fiber Type Disputes: The following procedure will be used to resolve any disputes regarding fiber types when the Project has been stopped due to excessive airborne fiber counts:

Air samples will be secured in the same area by the **Consultant** for analysis by Transmission Electron Microscopy at the option of the **Consultant** and classified as retests and back charged to the **Contractor** in accordance with the procedures in this specification.

ANALYTICAL METHODS:

The following methods will be utilized at the discretion of the **Consultant** in collecting and analyzing air samples:

Phase Contrast Microscopy (NIOSH 7400 Method, Issue 2, Revision 3 or OSHA Reference Method)

Transmission Electron Microscopy (40 CFR Part 763, Subpart E, Appendix A)

SAMPLE PROTOCOLS:

General: The number and volume of air samples taken by the **Consultant** will generally be in accordance with the following schedule. Sample quantities, locations, volumes and methodologies may vary depending upon the analytical method, project layout, procedures used and at the discretion of the **Consultant**.

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SCHEDULE OF AIR SAMPLES:

Base Line Sample Schedule: The **Consultant** will secure the following air samples to establish a Base Line before start of Work. The number of samples may vary according to site plan and on authorization of **Consultant**.

Location Sampled	Minimum Number of Samples	Minimum Volume	Planned Analytical Method
Each Work Area	3	1250 Liters	PCM
Outside Each Work Area	1	1250 Liters	PCM
Outside Building	1	1250 Liters	PCM

Base Line Fiber Level: is an action level expressed in fibers per cubic centimeter which is the larger of either the average of the samples collected outside each work area or 0.01 fibers per cubic centimeter of air. The Base Line samples may be collected but archived (not read) at the discretion of the **CONSULTANT.**

Daily Sample Schedule (per 8-hour work period): The **Consultant** will generally take the following samples on a daily (8-hour work period) basis. The number of samples may vary according to site plan and on authorization of **Consultant**.

Location Sampled	Minimum Number of Samples	Minimum Volume	Planned Analytical Method
Each Work Area	2	500	PCM
Outside Each Work Area/Inside Building	2	500	PCM
Decon Clean Room	2	500	PCM
Output of Negative Pressure Ventilation System	2	500	PCM

If airborne fiber counts exceed baseline limits, additional samples will be taken (and classified as retests) as necessary to monitor fiber levels and confirm sources.

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Final Clearance Schedule (per containment): The **Consultant** will collect the following samples after completing a visual inspection of the work area. The number of samples may vary according to site plan and on authorization of **Consultant**.

Location Sampled	Minimum Number of Samples	Minimum Volume	Planned Analytical Method
Each Work Area	3	1,250 Liters	PCM

Release Criteria: Gross decontamination is complete when every Work Area sample is equal to or less than 0.01 fibers/cc. If any sample is above the limit indicated, then the gross decontamination is incomplete and recleaning by decontamination procedures and/or ventilation system cycling is required and primary containment barriers cannot be removed.

INSPECTIONS:

The **Consultant**, in addition to providing air monitoring services, will provide full-time, on-site inspection of Work activities. Work shall not proceed without prior notice to the **Consultant** and presence of the **Consultant** on the Work site (requires 48 hours advance notice of Work).

The **Consultant** will conduct the following key Project inspections and no work by the **Contractor** will proceed beyond these points until all discrepancies noted during the inspection have been corrected.

The **Consultant**'s inspections do not relieve the **Contractor** of Contract obligations and are not designed to locate all project discrepancies. The **Contractor** is responsible for project quality.

First Key Inspection:

Inspection of Work Area and Containments Prior to Start of Removal: Removal operations shall not proceed until the **Consultant** has completed inspection of the Work Area preparations and until all discrepancies noted have been corrected.
Second Key Inspection:

Inspection During Removal: Removal Work shall not be conducted unless the **Consultant** is on the Project site. Daily inspection of the Work Area and Work practices will be conducted; upon discovery and report of a discrepancy the **Contractor** shall immediately stop Work and correct the discrepancy.

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Third Key Inspection:

Inspection of Work Area or Containment After Completion of Removal Work, but Prior to Encapsulation and Containment Disassembly: A visual inspection of the Work site and/or Containment areas and removal surfaces will be conducted at this point by the **Consultant** and encapsulation and/or containment disassembly shall not proceed until discrepancies noted have been corrected.

Fourth Key Inspection:

Final Clearance: After encapsulation and final clean-up of the Work Area, but prior to removal of Critical Barriers, the **Consultant** will conduct a visual inspection followed by final air tests. Final air sampling will be conducted in accordance with the Final Clearance Sections of this Specification.

Final Key Inspection:

Project Closeout Inspection: A final inspection will be conducted by the **Consultant** after the **Contractor** has removed Critical Barriers, equipment, and supplies. A Project "Punch List" will be provided of any items requiring correction or completion. Punch List items shall be completed prior to issuance of final completion notice by the **Contractor**.

Discrepancies or needed corrective measures observed by the **Consultant** will be reported to the **Contractor's** Superintendent on-site and shall be immediately corrected.

The above inspections are not necessarily single events. Failed inspections will be re-conducted and time classified as retests and charged back to the **Contractor** in accordance with the project documents.

Inspections will require 24 hours advance notice to the **Consultant**.

PERSONAL MONITORING:

The **Contractor** may perform air monitoring as required to meet OSHA requirements for maintenance of Time Weighted Average (TWA) and excursion limit fiber counts for types of respiratory protection provided. The **Consultant** and/or **Owner** will not be providing air monitoring services to meet these OSHA requirements. A listing of all personal monitoring results obtained during the project will be submitted to the **Consultant** with the **Contractor** closeout submittals.

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LABORATORY TESTING:

The **Consultant** will perform field analysis of the air samples. A microscope and field laboratory will be set up at the jobsite, at the option of the **Consultant**, so that verbal reports on air samples can be obtained promptly after collection.

Reports to the **Owner** by the **Consultant** will include air monitoring data and pertinent information on work being conducted such as: work hours, number of workers, procedures used, contractor discrepancies and corrective measures, containment methods and construction, and amount of **ACM** removed.

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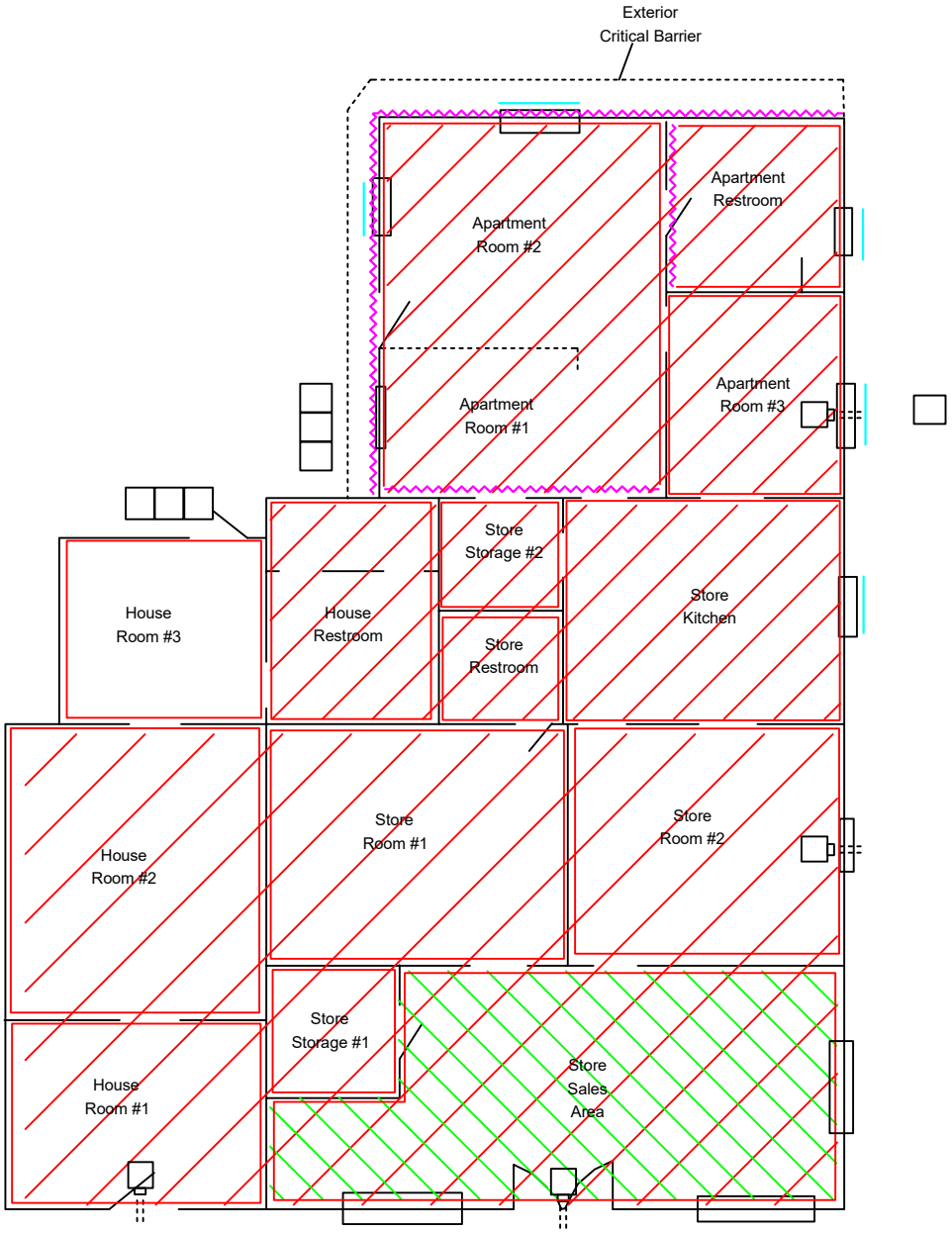
Abatement Drawings



LEGEND

- THOROUGHLY WET, REMOVE AND DISPOSE OF ASBESTOS-CONTAINING DRYWALL CONSTRUCTION
- STRIP, REMOVE, AND DISPOSE OF ASBESTOS-CONTAINING RESILIENT FLOORING AND ASSOCIATED MASTIC
- THOROUGHLY WET, COMPONENT REMOVE, AND DISPOSE OF ASBESTOS-CONTAINING EXTERIOR WINDOW GLAZING COMPOUND
- THOROUGHLY WET, REMOVE, AND DISPOSE OF ASBESTOS-CONTAINING PLASTER
- POTENTIAL LOCATION TO ESTABLISH 3-STAGE DECONTAMINATION CHAMBER
- POTENTIAL LOCATION TO ESTABLISH ONE-STAGE DECONTAMINATION CHAMBER
- POTENTIAL LOCATION TO VENT HFU TO BUILDING EXTERIOR

Will C. DeVeau

WILL C. DEVEAU
INDIVIDUAL ASBESTOS CONSULTANT
TDSHS LICENSE NO. 105734
EXPIRES 03/10/2019

Project Mngr:	WCD
Drawn By:	NJM
Checked By:	WCD
Approved By:	MS

Project No.	90187142
Scale:	N.T.S.
File No.	90187142
Date:	7-18-18

Terracon
Consulting Engineers and Scientists
6911 BLANCO ROAD SAN ANTONIO, TX 78216
PH. (210) 641-2112 FAX. (210) 641-2124

ASBESTOS ABATEMENT DRAWING

Vacant Residence
1021 El Paso Street
San Antonio, Texas

Appendix

A

Asbestos Inspection Report Information

Asbestos and Lead-Containing Paint Survey Report

VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS

January 17, 2018
Terracon Project No. 90177733

Prepared for:
San Antonio Housing Authority
San Antonio, Texas

Prepared by:
Terracon Consultants, Inc.
San Antonio, Texas

6911 Blanco Road
San Antonio, TX 78216
(210) 641-2112
terracon.com

Terracon

Environmental • Facilities • Geotechnical • Materials

January 17, 2018

Mr. David Casso
San Antonio Housing Authority
818 S. Flores Street
San Antonio, Texas 78204

Telephone: (210) 477-6023
Mobile: (210) 389-2437

Re: Asbestos & Lead-Containing Paint Survey Report
Vacant Residence
1021 El Paso Street
San Antonio, Texas 78207
Terracon Project No. 90177733

Dear Mr. Casso:

The purpose of this report is to present the results of the asbestos and lead-containing paint survey performed on December 26, 2017, at the above referenced site in San Antonio, Texas. This survey was conducted in general accordance with our proposal dated December 19, 2017. We understand that this survey was requested to identify and quantify asbestos-containing materials and lead-containing paint/coatings present in the building.

Asbestos-containing drywall construction, plaster, window glazing compound, floor tile and associated mastic materials were identified in various locations within/on the vacant residence. Nine (9) of the twelve (12) paint coatings sampled were found to be lead-containing and two (2) paint coatings contain quantities of lead considered lead-based paint. Please refer to the attached report for details.

Terracon appreciates the opportunity to provide this service to San Antonio Housing Authority. If you have any questions regarding this report, please contact the undersigned at (210) 641-2112.

Sincerely,
Terracon Consultants, Inc.

Inspected By:

Warren P. Dean
TDSHS Asbestos Inspector
License No. 60-3403
Lead Risk Assessor
TDSHS Certificate No. 2071063

Inspected By:

Gabriel A. Gonzalez
TDSHS Asbestos Inspector
License No. 60-3052
Lead Risk Assessor
TDSHS Certificate No. 2071064

Reviewed By:

Richard Ian Howes
TDSHS Individual Asbestos Consultant
License No. 10-5406
Lead Inspector/Project Designer
Certificate No. 2060584/2090034

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1.0 INTRODUCTION

Terracon conducted an asbestos-containing materials (ACM) survey and lead-containing paint (LCP) sampling of the vacant residence located at 1021 El Paso Street in San Antonio, Texas. The survey was conducted on December 26, 2017, by Texas Department of State Health Services (TDSHS) licensed and Environmental Protection Agency (EPA) accredited Asbestos Inspectors and certified Lead Risk Assessors in general accordance with our proposal dated December 19, 2017.

Interior and exterior building components were surveyed and homogeneous areas of suspect asbestos-containing materials (ACM) were visually identified and documented. Although reasonable effort was made to survey accessible suspect materials, additional suspect but un-sampled materials could be located in walls, in voids or in other concealed areas. Suspect ACM samples were collected in general accordance with the sampling protocols outlined in Environmental Protection Agency (EPA) regulation 40 CFR 763, The Asbestos Hazard Emergency Response Act (AHERA). Samples were delivered to a National Voluntary Laboratory Accreditation Program (NVLAP) accredited and Texas Department of State Health Services (TDSHS) licensed laboratory for analysis by Polarized Light Microscopy (PLM) protocol.

The lead-containing paint sampling was conducted in general accordance with Texas Environmental Lead Reduction Rules (TELRR) and was intended to identify and assess the lead content of the materials which might be disturbed in the planned demolition activities. An X-ray fluorescence (XRF) type analyzer was used to obtain direct readouts of lead content in coated surfaces associated with the building. XRF values are read and recorded in the field. Where XRF analyses resulted in readings below the standard set by TDSHS, EPA and HUD of 1.0 mg/cm^2, or exceptionally high concentrations of lead, the sample team randomly selected locations for collection of paint chip samples for laboratory confirmation. Samples of suspect LCP were delivered to an American Industrial Hygiene Association (AIHA) accredited laboratory for analysis utilizing Atomic Absorption Spectrometry (AAS Flame) methodology.

1.1 Project Objective

We understand that this survey was requested to identify and quantify asbestos-containing materials and lead-containing paint/coatings present in the vacant residence. The Texas Asbestos Health Protection Rules (TAHPR) and EPA regulation 40 CFR 61, Subpart M, The National Emission Standards for Hazardous Air Pollutants (NESHAP) requires that an asbestos survey be performed prior to renovation or demolition activities.

The Texas Department of State Health Services (TDSHS) regulates asbestos-related activities in the State of Texas. The TDSHS Texas Asbestos Health Protection Rules (TAHPR) require that a licensed Asbestos Inspector conduct an asbestos survey which conforms to generally accepted industry standards such as the protocol specified in 40 CFR Part 763.85, commonly referred to as the Asbestos Hazard Emergency Response Act (AHERA) that applies to schools. Other factors are taken into consideration when determining the best method to determine the location, extent and condition of Asbestos-Containing Materials (ACMs) in a non-school building.

EPA regulation 40 CFR 61, Subpart M, National Emission Standards for Hazardous Air Pollutants (NESHAP), prohibits the release of asbestos fibers to the atmosphere during renovation or demolition activities. The asbestos NESHAP, which is enforced by the TDSHS, requires that prior to the commencement of demolition or renovation, that the facility or part of the facility affected be thoroughly inspected for the presence of both Friable (Regulated Asbestos-Containing Building Materials), and Non-Friable (Category I & II Asbestos-Containing Materials). The Occupational Health and Safety Administration (OSHA) has promulgated a worker protection standard for the disturbance of asbestos during renovation and demolition projects.

The Department of Housing and Urban Development (HUD) guidelines consider a lead content equal to or greater than 5,000 parts per million (PPM) to be the level at which paint is considered to be “lead-based” and at which point a potential hazard exists. The Occupational Safety and Health Administration (OSHA) considers paint containing any level of lead above the analytical method detection limit a potential hazard which should be communicated to any employees or contractors who may disturb the materials in the course of their assigned work.

OSHA recognizes that HUD and the EPA find XRF analyzers acceptable for analyzing lead in paint at their clearance level of 1.0 mg/cm^2. They also recognize that some instruments can measure accurately at substantially lower levels. However, please be aware that while XRF analyzers may be an acceptable method of analysis for meeting HUD/EPA requirements, OSHA's concerns are different from those of HUD and EPA.

OSHA does not consider any method that relies solely on the analysis of bulk materials or surface content of lead (or other toxic material) to be acceptable for safely predicting employee exposure to airborne contaminants. Without air monitoring results or without the benefit of historical or objective data (including air sampling which clearly demonstrates that the employee cannot be exposed above the action level during any process, operation, or activity) the analysis of bulk or surface samples cannot be used to determine employee airborne exposure.

2.0 BUILDING DESCRIPTION

The vacant residence is a one-story wood frame structure atop a pier and beam foundation. The roof of the building is a sloped composition roof system. Interior walls and ceilings throughout the building consisted of a combination of drywall construction and plaster with a painted textured finish. The majority of the floors consisted of rolled sheet flooring.

3.0 FIELD ACTIVITIES

The survey was conducted by Mr. Warren Dean and Mr. Gabriel Gonzalez; TDSHS licensed and EPA accredited Asbestos Inspectors and TDSHS certified Lead Risk Assessors. Copies of each individual's licenses are attached as Appendix H. The asbestos survey was conducted in general accordance with the sample collection protocols established in the TAHPR and/or EPA regulation 40 CFR 763, the Asbestos Hazard Emergency Response Act (AHERA). The lead testing was conducted in general accordance with Texas Environmental Lead Reduction Rules (TELRR). A summary of survey activities is provided below.

3.1 Visual Assessment

Our survey activities began with a visual observation of the interior and exterior areas of the building to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color, texture and date of application. Interior and exterior assessment was conducted throughout visually accessible areas of the building. Building materials identified as concrete, glass, wood, masonry, metal or rubber were not considered suspect ACM.

Suspect materials located within wall cavities and behind ceramic tile were not sampled in order to prevent excessive damage to the material. Suspect materials, such as vermiculite fill, mastic or other materials (i.e. overspray texturizers) which were not accessible on the day of the survey should be sampled prior to demolition or renovation activities if the activities will disturb the materials.

Terracon visually assessed interior and exterior areas of the building to identify painted/coated surfaces with suspect LCP. Painted/coated surfaces which appear similar throughout in terms of color, texture, substrate and date of application are treated as a homogeneous paint combination for paint chip collection purposes. Painted/coated surfaces were visually assessed for evidence of distress, flaking, chipping and/or peeling. The visual assessment included evaluating the condition of the building, condition of painted surfaces, dust accumulation in interior spaces, and painted components at impact or friction surfaces. The information gathered in the visual assessment was utilized in determining the collection points of LCP samples collected.

The LCP sampling was limited to readily observable and accessible surfaces. It should be noted that suspect lead-containing paint (LCP), other than those identified during the sampling, may exist within the building and/or on the building exterior. Materials which have not been specifically evaluated should be tested prior to disturbance of the material. If suspect LCP is identified during the demolition process, those materials should be assumed LCP until testing can be performed to determine if lead is present in the paint.

3.2 Physical Assessment

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the EPA as a material which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

A physical assessment of each painted/coated surface was conducted to assess its condition. The painted/coated surfaces were assessed to be in good, fair or poor condition depending on degree of cracking, flaking, chipping and/or peeling.

3.3 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM were collected in general accordance with AHERA and TAHPA sampling protocols. Random samples of suspect materials were collected in each homogeneous area. The sample team members collected bulk samples using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Sixty-three (63) bulk samples were collected from seventeen (17) homogeneous areas of suspect ACM. A summary of suspect ACM samples collected during the survey is included as Appendix A.

Where XRF analyses resulted in readings below the standard set by TDSHS, EPA and HUD of 1.0 mg/cm2, or exceptionally high concentrations of lead, the sample team randomly selected locations for collection of paint chip samples for laboratory confirmation. Ten (10) chip samples of suspect paint materials were collected in general accordance with TELRR and HUD Guidelines. Each chip sample was placed in a sealable container and labeled with a unique sample number using an indelible marker. A summary of the suspect lead-containing samples collected during the survey is included as Appendix D.

3.4 Sample Analysis

Bulk suspect asbestos samples were submitted under chain of custody to Omni Environmental, Inc. of Round Rock, Texas for analysis by PLM with dispersion staining techniques per EPA's Method for the Determination of Asbestos in Bulk Building Materials (600/R-93-116). The percentage of asbestos, where applicable, was determined by microscopical visual estimation.

Omni Environmental, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP Accreditation No. 102061-0) and licensed by the TDSHS (License Number 30-0087). Reports of laboratory analysis of all suspect asbestos samples collected and sample chain-of-custody documentation are included in Appendix C.

Bulk samples of the suspect lead-containing paint materials collected during the survey were analyzed by Environmental Hazards Services (EHS), L.L.C., an American Industrial Hygiene Association (AIHA) accredited laboratory utilizing Atomic Absorption Spectrometry (AAS Flame) methodology. Reports of laboratory analysis of the suspect lead-containing paint samples collected and sample chain-of-custody documentation are included in Appendix E.

3.5 LCP Methodology and Analysis

A Heuresis Pb200i XRF instrument was used to determine whether surface coatings contained lead-based paint. The building was evaluated to identify different testing combinations present. For the purposes of this survey and in the absence of published guidelines for testing commercial buildings, Terracon generally observed HUD Guidelines for testing housing; per these guidelines, individual tests are to be classified as part of a group based on the testing combination (room equivalent, component, and substrate). Substrates are classified as brick, masonry, concrete, drywall, metal, plaster, or wood. A component is defined as an item, such as doors, windows, walls, etc. When using testing combinations, LBP results are classified by summing the individual component test results of positive, negative, or inconclusive.

For more detailed information, including testing location, component, color, and substrate, refer to the XRF testing results contained in Appendix F.

No materials were assumed to be LBP. Any inaccessible areas that contain painted surfaces should be tested when access permits or should be assumed to be positive for LBP.

3.6 LCP Wall and Component Identification System

Wall sides were identified with letters A, B, C and D. Side A is the north side. Sides B, C, and D are identified clockwise, starting from the “3 o’clock" position from Side A as one faces north; thus, Side B is to the right, Side C is across from Side A, and Side D is to the left of Side A.

3.7 XRF Instrumentation

The Heuresis Pb200i XRF instrument (Serial No. 1570; Reference Date: June 15, 2017) was used in the testing for lead based paint for this project. During the inspection, the standard set by TDSHS, EPA and HUD of 1.0 mg/cm^2 was followed to determine the components that contained LBP.

The calibration of the Heuresis Pb200i XRF instrument was done in accordance with the Performance Characteristic Sheet (PCS). The Heuresis Pb200i XRF instrument was calibrated using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM).

Using protocols provided by HUD and the instrument manufacturer and in accordance with NIST reference standard, calibration checks are performed at least twice daily, once prior to the inspection and once immediately after the inspection and every four hours in-between. If for any reason the Heuresis Pbi200 XRF instrument is not maintaining a consistent calibration reading within the manufacturer's standards for performance on the calibration sheet supplied by the manufacturer, manufacturer's recommendations are used to bring the instrument into calibration. If the instrument cannot be brought back into calibration, the instrument will be returned to the manufacturer for repair and/or re-calibration. The PCS is located in Appendix G.

An XRF reading above the standard of 1.0 mg/cm^2 of lead is considered positive for the presence of lead-based paint; however, while a reading below 1.0 mg/cm^2 is considered negative for the presence of lead-based paint, disturbance of the material could still create harmful conditions if proper precautions are not taken during activities that disturb these paint combinations

4.0 REGULATORY OVERVIEW

The State of Texas has established the Texas Asbestos Health Protection Rules (TAHPR) which requires any asbestos-related activity to be performed by an individual licensed by the State of Texas, through the TDSHS. An asbestos related activity consists of the disturbance (whether intentional or unintentional), removal, encapsulation, or enclosure of asbestos, including preparations or final clearance, the performance of asbestos surveys, the development of management plans and response actions, asbestos project design, the collection or analysis of asbestos samples, monitoring for airborne asbestos, bidding for a contract for any of these activities, or any other activity required to be licensed under TAHPR.

Abatement must be performed by a State of Texas licensed asbestos abatement contractor in accordance with a project design prepared by a State of Texas licensed asbestos consultant. In addition, third party air monitoring must be conducted during the abatement activities.

The asbestos NESHAP (40 CFR Part 61 Subpart M) regulates asbestos fiber emission and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos containing building materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non-friable ACM includes packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, Category I and II non-friable ACM in poor condition and has become friable or which will be subject to drilling, sanding, grinding, cutting, or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated ACM (RACM). RACM must be removed prior to renovation or demolition activities.

The TAHPR and NESHAP require that written notification be submitted before beginning renovation or demolition projects which include the disturbance of any asbestos-containing material (ACM) in a building or facility, or before the demolition of a building or facility, even when no asbestos is present. This written notification must be provided to the TDSHS at least 10 working days prior to the commencement of asbestos abatement or demolition activities. Removal of RACM must be conducted by a State of Texas licensed asbestos contractor. In addition, third party air monitoring must be performed during the abatement.

The OSHA Asbestos standard for the construction industry (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc).

The OSHA standard classifies construction and maintenance activities which could disturb ACM and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. States that administer their own federally approved state OSHA programs may require other precautions.

The State of Texas has established the Texas Environmental Lead Reduction Rules (TELRR) Texas Administrative Code (TAC), Title 25, Part 1, Chapter I, Subchapter 295 to establish the means to control and minimize public exposure to lead by regulating lead-based paint activities in target housing and child-occupied facilities. The TELRR contains procedures and requirements for the accreditation of lead training providers, procedures and requirements for the certification of individuals and firms engaged in lead-based paint activities and standards for performing such activities in target housing and child-occupied facilities. The TELRR requires that all lead-based paint activities in target housing and child-occupied facilities be performed by certified individuals. Regulatory agencies (HUD, TDSHS) have defined LBP as a paint or other surface coating that contain equal to or greater than ≥5,000 parts per million (ppm) of lead or more than 0.5% of lead by weight for buildings that meet the definition of target housing. The Occupational Safety and Health Administration (OSHA) define LBP as a paint which contains lead, regardless of the concentration.

The OSHA Lead Standard for Construction (29 CFR 1926.62) applies to construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint. OSHA considers paint containing any level of lead above the analytical method detection limit a potential hazard which should be communicated to any employees or contractors who may disturb the materials in the course of their assigned work.

5.0 FINDINGS AND RECOMMENDATIONS

Eight (8) of the homogeneous materials sampled and analyzed as part of this survey were found to contain asbestos.

- Drywall Construction – The multi-colored drywall construction materials with an orange peel texture utilized on the walls and ceilings of the Store were found to contain 5% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 3,800 square feet of these materials in the Store area.

- Resilient Floor Tile and Associated Mastic – The 9" x 9", maroon floor tile with white streaks and black mastic utilized as the flooring in the Store Sales Area was found to contain 5% Chrysotile asbestos in the floor tile and 5% Chrysotile asbestos in the mastic. The asbestos-containing floor tile and mastic materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 360 square feet of these materials in the Store Sales Area.

- Plaster – The white plaster materials with a medium texture utilized on the south wall of the Apartment, Room #1 was found to contain 3% Chrysotile asbestos. The asbestos-containing plaster materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 120 square feet of these materials in the above listed areas.

- Drywall Construction – The multi-colored drywall construction materials with an orange peel texture utilized on the walls and ceilings in the Apartment (behind wood panel) were found to contain 2% - 3% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 1,580 square feet of these materials in the above listed areas.

- Drywall Construction – The green drywall construction materials with an orange peel texture utilized on the walls and ceilings in the House behind wood paneling (except Room #3 ceiling) were found to contain 2% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 1,800 square feet of these materials in the above listed areas.

- Drywall Construction – The green drywall construction materials with an orange peel texture utilized on the walls and ceiling in the House Restroom were found to contain 2% Chrysotile asbestos. The asbestos-containing drywall construction materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 530 square feet of these materials in the above listed areas.

- Plaster – The green plaster materials with a brick pattern utilized on the exterior walls of the Apartment (north and south) and interior wall of the Apartment Restroom (west) were found to contain 5% Chrysotile asbestos. The asbestos-containing plaster materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 450 square feet of these materials in the above listed areas.

- Exterior Window Glazing Compound – The white exterior window glazing compound materials utilized on the exterior windows of Apartment Room #2, Room #3, Restroom, and Store Kitchen were found to contain 5% Chrysotile asbestos. The asbestos-containing window glazing materials identified were noted to be in a damaged condition and were assessed as being non-friable. It is estimated that there exists approximately 120 linear feet of these materials in the above listed areas.

None of the other suspect building materials sampled and analyzed were found to contain asbestos.

It should be noted that suspect materials, other than those identified during the December 26, 2017, survey may exist within the building. Should suspect materials other than those which were identified during this survey be uncovered prior to or during the renovation process, those materials should be assumed asbestos-containing until sampling and analysis can confirm or deny their asbestos content.

A summary of the classification, condition and approximate quantity of confirmed ACM are presented in Appendix B. Laboratory analytical reports are included in Appendix C.

If the Client does not intend to renovate or demolish the building, the asbestos-containing materials associated with the building, should be managed in place. This in-place management should include such operations as repairing any damaged materials, protecting the remaining asbestos-containing materials from further damage, and developing a plan to periodically monitor the condition of the asbestos-containing materials. Notification of the presence of the materials should also be made to residents, employees and outside contractors so that they do not inadvertently disturb the remaining asbestos-containing materials.

If repair, renovation or demolition operations which may disturb any of the asbestos-containing materials are planned, it is recommended that the affected materials be removed. The TDSHS TAHPR require that any removal of asbestos-containing materials associated with the building be conducted by trained and licensed asbestos abatement personnel.

According to the TDSHS TAHPR, a removal project involving the removal of more than 160 square feet or 260 linear feet of non-friable asbestos-containing materials would need to be designed by a licensed Individual Asbestos Consultant. Air monitoring by a licensed third-party Air Monitor would be required during the actual removal work regardless of the size of the project. Terracon would be pleased to provide a proposal to provide these services.

It is important to note the TAHPR and NESHAP require that written notification be submitted before beginning renovation or demolition projects which include the disturbance of any asbestos-containing material (ACM) in a building or facility, or before the demolition of a building or facility, even when no asbestos is present. This written notification must be provided to the TDSHS at least 10 working days prior to the commencement of asbestos abatement or demolition activities. These activities must be performed in accordance with the current TDSHS, EPA, and OSHA guidelines.

One (1) of the ten (10) paint/coating materials sampled and analyzed as part of this survey was found to contain lead in concentrations below the detection limit and would be considered by OSHA to present no workforce hazard.

- L-04 – The white paint material applied to the walls and ceilings in the Store Restroom (east), and ceilings in the Apartment was found to contain <36 ppm lead. Where observed, this material was found to be in poor condition.

Nine (9) of the ten (10) paint/coating materials sampled and analyzed as part of this survey were found to contain lead in a concentration exceeding the detection limit, but less than 5,000 PPM which would render the material "Lead-Containing" and be considered a potential hazard by OSHA.

- L-01 – The tan paint material applied to the walls in the Store Sales Area, Store Storage #1, and Apartment Rooms #1, #2, and #3 was found to contain 150 ppm lead. Where observed, this material was found to be in fair condition.

- L-02 – The light-blue paint material applied to the walls and ceilings in Store Room #2 were found to contain 330 ppm lead. Where observed, this material was found to be in fair condition.

- L-03 – The pink paint material applied to the walls, ceilings, doors, door frames and baseboards in the Store, Room #1 and behind wood paneling in Apartment Room #3 was found to contain 75 ppm lead. Where observed, this material was found to be in poor condition.

- L-05 – The green paint material applied to the walls and ceilings in the Store, Restroom (west) was found to contain 200 ppm lead. Where observed, this material was found to be in fair condition.

- L-06 – The blue paint material applied to the walls in the Store Storage #2 (west) was found to contain 400 ppm lead. Where observed, this material was found to be in fair condition.

- L-07 – The light green paint material applied to the walls and ceilings throughout the House (except walls in Room #1) was found to contain 580 ppm lead. Where observed, this material was found to be in fair condition.

- L-08 – The light blue paint material applied to the exterior elevations (south portion) of the Main Building was found to contain 210 ppm lead. Where observed, this material was found to be in fair condition.

- L-09 – The light green brown paint material applied to the exterior elevations (north portion) of the Main Building was found to contain 45 ppm lead. Where observed, this material was found to be in fair condition.

- L-10 – The green paint material applied to the exterior door frame and window frame of the Apartment was found to contain 4,700 ppm lead. Where observed, this material was found to be in fair condition.

Analysis using the XRF unit indicated two (2) paint testing combinations exceeded the unit's analytical detection of 1.0 mg/cm^2 and is considered "Lead-Based-Paint" by HUD:

- L-11 – The light blue paint material applied to the interior window frames, door frames, baseboards, and doors in Store Sales Area was found to contain 1.1 to 4.4 mg/cm^2 lead. Where observed, this material was found to be in poor condition.

- L-12 – The light green paint material applied to the baseboards, window frames, door frames, and walls in the House, Room #1 was found to contain 1.1 to 2.2 mg/cm^2 lead. Where observed, this material was found to be in fair condition.

Laboratory analytical reports are included in Appendix D.

The XRF testing results are contained in Appendix F. No readings were measured as inconclusive. The possibility exists that LBP coated surfaces may be hidden from sight or in inaccessible locations, or the homogeneous construction areas identified may not be homogeneous.

In areas where the Client does not intend to renovate or demolish the building, the lead-based/lead-containing paint materials, which will remain in the building, should be managed in place. It is recommended that this in-place management should include such operations as stabilizing or repairing any damaged materials, protecting the remaining lead-containing paint materials from further damage, and developing a plan to periodically monitor the condition of the lead-based/lead-containing paint materials. Notification of the presence of the materials should also be made to employees and outside contractors so that they do not inadvertently disturb the remaining paint materials.

Any project which would disturb the lead-containing materials within the facility is to be conducted, it is recommended that contracting personnel who may disturb the lead-containing paint materials within the facility be made aware of the lead content in the materials so that they may exercise proper OSHA procedures for personnel protection or possibly employ protective procedures when working with the coatings.

Planned renovation/demolition activities impacting those materials determined to contain measurable concentrations of lead will be subject to OSHA regulations (29 CFR 1926.62 – Lead Exposure in Construction). The OSHA regulation defines specific training requirements, engineering controls and working practices for construction personnel subject to this standard. There are also federal and state regulations, which require characterization of demolition debris to determine the proper disposal procedures.

Construction work covered by 29 CFR 1926.62 includes any repair, renovation, or other activities that disturb in-place, lead-containing materials, but does not include routine cleaning and repainting where there is insignificant damage, wear, or corrosion of existing lead-containing coatings or substrates. Employers must assure that no employee will be exposed to lead at concentrations greater than the PEL of 50 micrograms per cubic meter (mg/m^3) averaged over an eight-hour period without adequate protection. The OSHA standard also establishes an action level of 30 mg/m^3, which if exceeded, triggers certain requirements, including periodic exposure monitoring and medical monitoring. Terracon recommends personnel air sampling of workers that perform work on surfaces with lead-containing paint. Personnel sampling should be performed in compliance with OSHA regulations. As it is understood a demolition project which would disturb the lead-containing materials on the building is to be conducted, it is recommended that contracting personnel who may disturb the lead-containing paint materials associated with the building be made aware of the lead content in the materials so that they may exercise proper OSHA procedures for personnel protection or possibly employ protective procedures when working with the coatings.

Compliance with applicable OSHA lead regulations is the responsibility of the contractor performing the work and it is recommended that they be required to communicate potential lead hazards to their workforce and utilize lead-safe work practices such as outlined in the EPA Renovation, Repair, and Painting (RRP) Final Rule (40 CFR 745) or applicable portions of the Structural Steel Painting Council (SSPC) Guidelines. It is further recommended that activities such as flame/torch dismantling, dry sanding and/or dry grinding of any components with lead-containing materials applied should be prohibited as part of any repair, renovation or demolition activity.

It is recommended that any painted metal components which are to be removed from the building be segregated from the waste stream and be transferred to a suitable metal recycling facility. As this building is a public building rather than Target Housing, HUD and TDSHS lead regulations do not apply to removal operations associated with the building. It is, however, recommended that they be consulted as a general guideline for employee/worker protection and that OSHA notification be made to all employees or contractors working on any repair, renovation or demolition projects associated with the building.

The EPA Resource Conservation and Recovery Act (RCRA) regulations set the limit of leachable lead in lead containing waste at 5.0 milligrams per liter (mg/L). Leachable lead means the amount of lead likely to leach from the waste into the surrounding soil of a landfill. This level is established by an analytical method called the toxicity characteristic leaching procedure (TCLP). Lead-containing waste that equals or exceeds the RCRA limit must be managed in accordance with RCRA regulations. This regulation affects the disposal of demolition or remodel debris containing lead or lead based paint.

6.0 GENERAL COMMENTS

This asbestos survey and lead-containing paint sampling was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our survey of the building. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by the San Antonio Housing Authority for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information which may have been used in the preparation of this report. No warranty, express or implied is made.

APPENDIX A

ASBESTOS SURVEY SAMPLE SUMMARY

APPENDIX A
ASBESTOS SURVEY SAMPLE SUMMARY
VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-01	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Kitchen – Southwest	5% Chrysotile
V-02	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Room #2 – Southwest	5% Chrysotile
V-03	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Sales Area – Northeast	5% Chrysotile
V-04	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Sales Area – Ceiling	5% Chrysotile
V-05	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Storage #1 – Southeast	5% Chrysotile
V-06	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Room #1 – Southeast	5% Chrysotile
V-07	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	Store - Kitchen Ceiling - Southeast	5% Chrysotile
V-08	Resilient Floor Tile – 9” x 9”, Maroon with White Streaks and Black Mastic	Utilized as the flooring in the Store Sales Area	Store – Sales Area - Southwest	5% Chrysotile in Floor Tile 5% Chrysotile in Black Mastic
V-09	Resilient Floor Tile – 9” x 9”, Maroon with White Streaks and Black Mastic	Utilized as the flooring in the Store Sales Area	Store – Sales Area - North	5% Chrysotile in Floor Tile 5% Chrysotile in Black Mastic

APPENDIX A
ASBESTOS SURVEY SAMPLE SUMMARY
VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-10	**Resilient Floor Tile – 9" x 9", Maroon with White Streaks and Black Mastic**	**Utilized as the flooring in the Store Sales Area**	**Store – Sales Area - Northeast**	**5% Chrysotile in Floor Tile** **5% Chrysotile in Black Mastic**
V-11	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Storage, Room #1 and Restroom in the Store	Storage Room - Northeast	No Asbestos Detected
V-12	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Storage, Room #1 and Restroom in the Store	Storage Room - Northwest	No Asbestos Detected
V-13	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Storage, Room #1 and Restroom in the Store	Storage Room - Southwest	No Asbestos Detected
V-14	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Room #2 in the Store	Room #2 - Northwest	No Asbestos Detected
V-15	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Room #2 in the Store	Room #2 - West	No Asbestos Detected
V-16	Rolled Sheet Flooring – Yellow with a Rock Design and Yellow Mastic	Utilized as flooring in Room #2 in the Store	Room #2 - Southwest	No Asbestos Detected
V-17	Rolled Sheet Flooring – Brown with a Wood Design and Yellow Mastic	Utilized as flooring in Store Kitchen and Apartment Room #1 and Room #2	Store Kitchen – Central	No Asbestos Detected
V-18	Rolled Sheet Flooring – Brown with a Wood Design and Yellow Mastic	Utilized as flooring in Store Kitchen and Apartment Room #1 and Room #2	Apartment Room #1 – South	No Asbestos Detected

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VACANT RESIDENCE
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SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-19	Rolled Sheet Flooring – Brown with a Wood Design and Yellow Mastic	Utilized as flooring in Store Kitchen and Apartment Room #1 and Room #2	Apartment Room #2 - North	No Asbestos Detected
V-20	**Plaster – White with a Medium Texture**	**Utilized as wall in Apartment #1 (south)**	**Apartment #1 - South Wall, West end**	**3% Chrysotile**
V-21	**Plaster – White with a Medium Texture**	**Utilized as wall in Apartment #1 (south)**	**Apartment #1 - South Wall, Central**	**3% Chrysotile**
V-22	**Plaster – White with a Medium Texture**	**Utilized as wall in Apartment #1 (south)**	**Apartment #1 - South Wall, East end**	**3% Chrysotile**
V-23	**Drywall Construction – Multi-Colored with an Orange Peel Texture**	**Utilized as walls and ceilings in Apartment (behind wall panels)**	**Apartment Restroom Ceiling – Southwest**	**3% Chrysotile**
V-24	**Drywall Construction – Multi-Colored with an Orange Peel Texture**	**Utilized as walls and ceilings in Apartment (behind wall panels)**	**Apartment Room #3 - South**	**2% Chrysotile**
V-25	**Drywall Construction – Multi-Colored with an Orange Peel Texture**	**Utilized as walls and ceilings in Apartment (behind wall panels)**	**Apartment Room #2 - Northeast**	**2% Chrysotile**
V-26	**Drywall Construction – Multi-Colored with an Orange Peel Texture**	**Utilized as walls and ceilings in Apartment (behind wall panels)**	**Apartment Room #1 - Southwest**	**2% Chrysotile**
V-27	**Drywall Construction – Multi-Colored with an Orange Peel Texture**	**Utilized as walls and ceilings in Apartment (behind wall panels)**	**Apartment Room #1 - Southeast**	**2% Chrysotile**
V-28	Vinyl Floor Tile – 1' x 1', Yellow and Brown with Clear Mastic	Utilized beneath rolled sheet flooring in Apartment Room #2	Apartment Room #2 - East	No Asbestos Detected
V-29	Vinyl Floor Tile – 1' x 1', Yellow and Brown with Clear Mastic	Utilized beneath rolled sheet flooring in Apartment Room #2	Apartment Room #2 - South	No Asbestos Detected

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Terracon Project No. 90177733

SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-30	Vinyl Floor Tile – 1' x 1', Yellow and Brown with Clear Mastic	Utilized beneath rolled sheet flooring in Apartment Room #2	Apartment Room #2 - Southwest	No Asbestos Detected
V-31	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)**	**House – Room #3 - Northwest**	**2% Chrysotile**
V-32	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)**	**House – Room #2 - Northeast**	**2% Chrysotile**
V-33	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)**	**House – Room #1 - Southwest**	**2% Chrysotile**
V-34	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)**	**House – Room #1 - South**	**2% Chrysotile**
V-35	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)**	**House – Room #2 - Southeast**	**2% Chrysotile**
V-36	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House Restroom**	**House Restroom - Northwest**	**2% Chrysotile**
V-37	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House Restroom**	**House Restroom - Southwest**	**2% Chrysotile**
V-38	**Drywall Construction – Green with an Orange Peel Texture**	**Utilized as walls and ceilings in the House Restroom**	**House Restroom Ceiling - South**	**2% Chrysotile**
V-39	Mastic - Black	Utilized behind wood paneling in House	House Room #2 - Northeast	No Asbestos Detected
V-40	Mastic - Black	Utilized behind wood paneling in House	House Room #2 - East	No Asbestos Detected

APPENDIX A
ASBESTOS SURVEY SAMPLE SUMMARY
VACANT RESIDENCE
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SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-41	Mastic - Black	Utilized behind wood paneling in House	House Room #2 - Southeast	No Asbestos Detected
V-42	Drywall Construction – Tape and Float Only	Utilized as ceiling in Room #3 of House	Apartment #3 Ceiling - Northwest	No Asbestos Detected
V-43	Drywall Construction – Tape and Float Only	Utilized as ceiling in Room #3 of House	Apartment #3 Ceiling - West	No Asbestos Detected
V-44	Drywall Construction – Tape and Float Only	Utilized as ceiling in Room #3 of House	Apartment #3 Ceiling - Southwest	No Asbestos Detected
V-45	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - North	No Asbestos Detected
V-46	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - Northwest	No Asbestos Detected
V-47	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - Southwest	No Asbestos Detected
V-48	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - Southwest	No Asbestos Detected
V-49	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - Southeast	No Asbestos Detected
V-50	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - East	No Asbestos Detected
V-51	Plaster – Blue and Green with a Bumpy Texture	Utilized as exterior walls of Store and House	Building Exterior - Northeast	No Asbestos Detected
V-52	Moisture Barrier - Black	Utilized behind the plaster on the exterior wall of the Store and House	Building Exterior - Northwest	No Asbestos Detected
V-53	Moisture Barrier - Black	Utilized behind the plaster on the exterior wall of the Store and House	Building Exterior - Southwest	No Asbestos Detected

APPENDIX A
ASBESTOS SURVEY SAMPLE SUMMARY
VACANT RESIDENCE
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SAMPLE NUMBER	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	SAMPLE LOCATION	LAB RESULTS
V-54	Moisture Barrier - Black	Utilized behind the plaster on the exterior wall of the Store and House	Building Exterior - East	No Asbestos Detected
V-55	**Plaster – Green with a Brick Texture**	**Utilized on the exterior walls of the Apartment (north and south) and interior wall of the Apartment Restroom (west)**	**Building Exterior - Northwest**	**No Asbestos Detected**
V-56	**Plaster – Green with a Brick Texture**	**Utilized on the exterior walls of the Apartment (north and south) and interior wall of the Apartment Restroom (west)**	**Building Exterior - North**	**No Asbestos Detected**
V-57	**Plaster – Green with a Brick Texture**	**Utilized on the exterior walls of the Apartment (north and south) and interior wall of the Apartment Restroom (west)**	**Building Exterior - Northeast**	**5% Chrysotile**
V-58	Roof Shingle – Gray with Black Felt Paper	Utilized as the roof of the building	Roof – Northwest	No Asbestos Detected
V-59	Roof Shingle – Gray with Black Felt Paper	Utilized as the roof of the building	Roof – North	No Asbestos Detected
V-60	Roof Shingle – Gray with Black Felt Paper	Utilized as the roof of the building	Roof - Northeast	No Asbestos Detected
V-61	**Exterior Window Glazing Compound - White**	**Utilized on the exterior windows of Apartment Room #2, Room #3, Restroom, and Store Kitchen**	**Kitchen – South**	**5% Chrysotile**
V-62	**Exterior Window Glazing Compound - White**	**Utilized on the exterior windows of Apartment Room #2, Room #3, Restroom, and Store Kitchen**	**Room #3 – South**	**5% Chrysotile**
V-63	**Exterior Window Glazing Compound - White**	**Utilized on the exterior windows of Apartment Room #2, Room #3, Restroom, and Store Kitchen**	**Kitchen - North**	**5% Chrysotile**

APPENDIX B

CONFIRMED ASBESTOS-CONTAINING MATERIALS

APPENDIX B
CONFIRMED ASBESTOS-CONTAINING MATERIALS
VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NO.	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	PERCENT / TYPE ASBESTOS	NESHAP CLASSIFICATION	MATERIAL CONDITION	ESTIMATED QUANTITY
V-01, 02, 03, 04, 05, 06, & 07	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings of the Store	5% Chrysotile	RACM	Damaged	3,800 Sq. Ft.
V-08, 09, & 10	Resilient Floor Tile – 9" x 9", Maroon with White Streaks and Black Mastic	Utilized as the flooring in the Store Sales Area	5% Chrysotile in Floor Tile 5% Chrysotile in Black Mastic	Category I Non-Friable	Damaged	360 Sq. Ft.
V-20, 21, & 22	Plaster – White with a Medium Texture	Utilized as wall in Apartment #1 (south)	3% Chrysotile	RACM	Damaged	120 Sq. Ft.
V-23, 24, 25, 26, & 27	Drywall Construction – Multi-Colored with an Orange Peel Texture	Utilized as walls and ceilings in Apartment (behind wall panels)	2-3% Chrysotile	RACM	Damaged	1,580 Sq. Ft.
V-31, 32, 33, 34, & 35	Drywall Construction – Green with an Orange Peel Texture	Utilized as walls and ceilings in the House (behind wall panels, except Room #3 ceiling)	2% Chrysotile	RACM	Damaged	1,800 Sq. Ft.
V-36, 37, & 38	Drywall Construction – Green with an Orange Peel Texture	Utilized as walls and ceilings in the House Restroom	2% Chrysotile	RACM	Damaged	530 Sq. Ft.
V-55, 56, & 57	Plaster – Green with a Brick Texture	Utilized on the exterior walls of the Apartment (north and south) and interior wall of the Apartment Restroom (west)	5% Chrysotile	RACM	Damaged	450 Sq. Ft.

APPENDIX B
CONFIRMED ASBESTOS-CONTAINING MATERIALS
VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NO.	MATERIAL DESCRIPTION	HOMOGENEOUS AREA	PERCENT / TYPE ASBESTOS	NESHAP CLASSIFICATION	MATERIAL CONDITION	ESTIMATED QUANTITY
V-61, 62, & 63	Exterior Window Glazing Compound - White	Utilized on the exterior windows of Apartment Room #2, Room #3, Restroom, and Store Kitchen	5% Chrysotile	Category II Non-Friable	Damaged	120 Lin. Ft.

Sq. Ft. = Square Feet
Lin. Ft. = Linear Feet

Category I: Includes asbestos-containing packings, gaskets, asphaltic roofing products, resilient flooring and associated mastics.

Category II: Includes any non-friable asbestos-containing material not categorized as Category I.

Regulated Asbestos-containing Material (RACM): Friable asbestos-containing materials and/or Category I and II non-friable asbestos-containing materials which have a high probability of or have become friable by forces expected to be exerted in the course of a renovation or demolition process.

APPENDIX C

ASBESTOS LABORATORY ANALYTICAL REPORT

SAMPLE SUMMARY REPORT

Omni Environmental, Inc.
2851 Joe DiMaggio Blvd Suite 10
Round Rock, TX 78665
(512) 258-9114
NVLAP LABCODE 102061.0
TDSHS Lab License 30-0087

Client Name: Terracon Consultants, Inc. San Antonio Contact Name: Gabriel Gonzalez

Client Project Number: 90177733 Vacant Residence Lab Project #: 226921

Client Sample Number	Lab Sample Number	Asbestos Type and %	Asbestos Content by Layer
V-01	**737924**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-02	**737925**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-03	**737926**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-04	**737927**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-05	**737928**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-06	**737929**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-07	**737930**	**Chry <1%**	**5% Chrysotile detected in Texturizer 5% Chrysotile detected in Joint Compound NAD detected in Drywall**
V-08	**737931**	**Chry 5%**	**5% Chrysotile detected in Floor Tile 5% Chrysotile detected in Tar**
V-09	**737932**	**Chry 5%**	**5% Chrysotile detected in Floor Tile 5% Chrysotile detected in Tar**
V-10	**737933**	**Chry 5%**	**5% Chrysotile detected in Floor Tile 5% Chrysotile detected in Tar**
V-11	737934	NAD	
V-12	737935	NAD	
V-13	737936	NAD	
V-14	737937	NAD	
V-15	737938	NAD	
V-16	737939	NAD	
V-17	737940	NAD	
V-18	737941	NAD	
V-19	737942	NAD	
V-20	**737943**	**Chry <1%**	**3% Chrysotile detected in White Binder**
V-21	**737944**	**Chry <1%**	**3% Chrysotile detected in White Binder**
V-22	**737945**	**Chry <1%**	**3% Chrysotile detected in White Binder**
V-23	**737946**	**Chry <1%**	**3% Chrysotile detected in Texturizer 3% Chrysotile detected in Joint Compound NAD detected in Drywall**

This report is only a summary. For complete information on each sample see the Bulk Sample Analysis Report.
Note that NAD means that No Asbestos was Detected in the sample or layer.

SAMPLE SUMMARY REPORT

Omni Environmental, Inc.
2851 Joe DiMaggio Blvd Suite 10
Round Rock, TX 78665
(512) 258-9114
NVLAP LABCODE 102061.0
TDSHS Lab License 30-0087

Client Name: Terracon Consultants, Inc. San Antonio Contact Name: Gabriel Gonzalez

Client Project Number: 90177733 Vacant Residence Lab Project #: 226921

Client Sample Number	Lab Sample Number	Asbestos Type and %	Asbestos Content by Layer
V-24	**737947**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-25	**737948**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-26	**737949**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-27	**737950**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-28	737951	NAD	
V-29	737952	NAD	
V-30	737953	NAD	
V-31	**737954**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-32	**737955**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-33	**737956**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-34	**737957**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-35	**737958**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-36	**737959**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-37	**737960**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-38	**737961**	**Chry <1%**	**2% Chrysotile detected in Texturizer NAD detected in Drywall**
V-39	737962	NAD	
V-40	737963	NAD	
V-41	737964	NAD	
V-42	737965	NAD	NAD detected in Texturizer NAD detected in Drywall
V-43	737966	NAD	NAD detected in Texturizer NAD detected in Drywall
V-44	737967	NAD	NAD detected in Texturizer NAD detected in Drywall
V-45	737968	NAD	
V-46	737969	NAD	
V-47	737970	NAD	
V-48	737971	NAD	
V-49	737972	NAD	
V-50	737973	NAD	
V-51	737974	NAD	
V-52	737975	NAD	
V-53	737976	NAD	
V-54	737977	NAD	
V-55	737978	NAD	
V-56	737979	NAD	

This report is only a summary. For complete information on each sample see the Bulk Sample Analysis Report.
Note that NAD means that No Asbestos was Detected in the sample or layer.

SAMPLE SUMMARY REPORT

Omni Environmental, Inc.
2851 Joe DiMaggio Blvd Suite 10
Round Rock, TX 78665
(512) 258-9114
NVLAP LABCODE 102061.0
TDSHS Lab License 30-0087

Client Name: Terracon Consultants, Inc. San Antonio Contact Name: Gabriel Gonzalez

Client Project Number: 90177733 Vacant Residence Lab Project #: 226921

Client Sample Number	Lab Sample Number	Asbestos Type and %	Asbestos Content by Layer
V-57	**737980**	**Chry 5%**	
V-58	737981	NAD	
V-59	737982	NAD	
V-60	737983	NAD	
V-61	**737984**	**Chry 5%**	
V-62	**737985**	**Chry 5%**	
V-63	**737986**	**Chry 5%**	

This report is only a summary. For complete information on each sample see the Bulk Sample Analysis Report.
Note that NAD means that No Asbestos was Detected in the sample or layer.

BULK SAMPLE ANALYSIS REPORT

Omni Environmental, Inc.
2851 Joe DiMaggio Blvd Suite 10
Round Rock, TX 78665
(512) 258-9114
NVLAP LABCODE 102061.0
TDSHS Lab License 30-0087

December 29, 2017

Gabriel Gonzalez

Terracon Consultants, Inc. San Antonio

6911 Blanco Road

San Antonio, TX 78216

Dear Mr Gonzalez:

Please find enclosed the bulk sample analytical results for the following project:

Client Project #:	**90177733 Vacant Residence**	Lab Project #:	226921
Date Received:	12/27/2017	Received By:	Steve Griffin
Delivery Agency:	Federal Express	Name/Tracking #:	6822 3535 7265
Date Logged:	12/27/2017	Logged in by:	Linda Griffin
Analysis Completed:	12/29/2017	Samples in Project:	63

The following procedures were used in sample analysis unless otherwise noted.

ANALYTICAL METHOD: EPA Method for the Determination of Asbestos in Bulk Building Materials (EPA 600/R-93/116) or EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples (EPA 600/M4-82-020), as applicable.
Percentages are visual estimates based on sample volume. Limit of Detection: <1%. Limit of Quantification: 1%.
Negative results of resinously bound materials such as roofing material or floor tile may be inconclusive. NAD means No Asbestos was Detected in the sample or layer. The term texturizer (where applicable) may include wall texturizing, tape and bed, and/or joint compound. This report relates only to the item tested. It may not be used to claim product endorsement by NVLAP or any agency of the federal government. This report may not be reproduced, except in full, without the expressed written consent of laboratory management. Subsamples of layers or other inhomogeneities were analyzed separately and their results combined in proportion to the quantity of each layer to obtain quantitative results for the sample as a whole. All samples are stored for 1 month from the original analysis date before being disposed of.

Please call us if you have any questions regarding this report

Thank you for your business.

Sincerely,

Steve Griffin

Steve Griffin, Lab Manager

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737924 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-01 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737925 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-02 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737926 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-03 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737927 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-04 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737928 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-05 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737929 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-06 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737930 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-07 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	80 %	Filler/Binder	10 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	80 %	Non-Fibrous Total:	20 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Texturizer.
Layer 2: 5% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737931 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-08 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	5 %			Filler/Binder	93 %
Amosite				Tar	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**5 %**	Fibrous Total:		Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Floor Tile.
Layer 2: 5% Chrysotile detected in Tar.

Lab Project #: 226921 Lab Sample #: 737932 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-09 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	5 %			Filler/Binder	93 %
Amosite				Tar	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**5 %**	Fibrous Total:		Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Floor Tile.
Layer 2: 5% Chrysotile detected in Tar.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737933 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-10 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	5 %			Filler/Binder	93 %
Amosite				Tar	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**5 %**	Fibrous Total:		Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Layer 1: 5% Chrysotile detected in Floor Tile.
Layer 2: 5% Chrysotile detected in Tar.

Lab Project #: 226921 Lab Sample #: 737934 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-11 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737935 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-12 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737936 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-13 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737937 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-14 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737938 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-15 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737939 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-16 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	45 %	Filler/Binder	10 %
Amosite				Tar	45 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737940 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-17 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	25 %	Filler/Binder	65 %
Amosite		Fibrous Glass	10 %		
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	35 %	Non-Fibrous Total:	65 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737941 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-18 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	25 %	Filler/Binder	65 %
Amosite		Fibrous Glass	10 %		
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	35 %	Non-Fibrous Total:	65 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737942 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-19 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	25 %	Filler/Binder	65 %
Amosite		Fibrous Glass	10 %		
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	35 %	Non-Fibrous Total:	65 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737943 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-20 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %			Filler/Binder	50 %
Amosite				Paint	10 %
Crocidolite				Aggregate	40 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:		Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Layer 1: 3% Chrysotile detected in White Binder.

Lab Project #: 226921 Lab Sample #: 737944 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-21 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %			Filler/Binder	50 %
Amosite				Paint	10 %
Crocidolite				Aggregate	40 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:		Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Layer 1: 3% Chrysotile detected in White Binder.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737945 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-22 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %			Filler/Binder	50 %
Amosite				Paint	10 %
Crocidolite				Aggregate	40 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:		Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Layer 1: 3% Chrysotile detected in White Binder.

Lab Project #: 226921 Lab Sample #: 737946 Color: Blue
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-23 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	50 %	Filler/Binder	40 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	50 %	Non-Fibrous Total:	50 %

SAMPLE LAYER DETAILS

Layer 1: 3% Chrysotile detected in Texturizer.
Layer 2: 3% Chrysotile detected in Joint Compound.
Layer 3: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737947 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-24 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737948 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-25 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737949 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-26 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737950 Color: Tan
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-27 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737951 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-28 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	68 %
Amosite			Mastic	2 %
Crocidolite			Aggregate	30 %
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737952 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-29 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	68 %
Amosite			Mastic	2 %
Crocidolite			Aggregate	30 %
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737953 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-30 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	68 %
Amosite			Mastic	2 %
Crocidolite			Aggregate	30 %
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737954 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-31 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737955 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-32 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737956 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-33 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737957 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-34 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737958 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-35 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737959 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-36 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737960 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-37 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737961 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Heterogeneous, Fibrous
Client Sample #: V-38 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile	<1 %	Cellulose	30 %	Filler/Binder	60 %
Amosite				Paint	10 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**<1 %**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: 2% Chrysotile detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737962 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-39 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	97 %	Filler/Binder	1 %
Amosite				Mastic	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	97 %	Non-Fibrous Total:	3 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737963 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-40 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	97 %	Filler/Binder	1 %
Amosite				Mastic	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	97 %	Non-Fibrous Total:	3 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737964 Color: Brown
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-41 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	97 %	Filler/Binder	1 %
Amosite				Mastic	2 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	97 %	Non-Fibrous Total:	3 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737965 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-42 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	30 %	Filler/Binder	70 %
Amosite					
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: No Asbestos Detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737966 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-43 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	30 %	Filler/Binder	70 %
Amosite					
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: No Asbestos Detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737967 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-44 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	30 %	Filler/Binder	70 %
Amosite					
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	30 %	Non-Fibrous Total:	70 %

SAMPLE LAYER DETAILS

Layer 1: No Asbestos Detected in Texturizer.
Layer 2: No Asbestos Detected in Drywall.

Lab Project #: 226921 Lab Sample #: 737968 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-45 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile				Filler/Binder	60 %
Amosite				Aggregate	40 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:		Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737969 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-46 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	60 %
Amosite			Aggregate	40 %
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737970 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-47 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	60 %
Amosite			Aggregate	40 %
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737971 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-48 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	60 %
Amosite			Aggregate	40 %
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737972 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-49 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS	FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile		Filler/Binder	60 %
Amosite		Aggregate	40 %
Crocidolite			
Tremolite			
Actinolite			
Anthophyllite			
Asbestos Total: NAD	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737973 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-50 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS	FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile		Filler/Binder	60 %
Amosite		Aggregate	40 %
Crocidolite			
Tremolite			
Actinolite			
Anthophyllite			
Asbestos Total: NAD	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737974 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-51 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS	FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile		Filler/Binder	60 %
Amosite		Aggregate	40 %
Crocidolite			
Tremolite			
Actinolite			
Anthophyllite			
Asbestos Total: NAD	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737975 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-52 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	50 %	Filler/Binder	
Amosite				Tar	50 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	50 %	Non-Fibrous Total:	50 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737976 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-53 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	50 %	Filler/Binder	
Amosite				Tar	50 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	50 %	Non-Fibrous Total:	50 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737977 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-54 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	50 %	Filler/Binder	
Amosite				Tar	50 %
Crocidolite					
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	50 %	Non-Fibrous Total:	50 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737978 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-55 Date Analyzed: 12/29/2017
Analyst: Steve Griffin QC'd By: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	60 %
Amosite			Paint	<1 %
Crocidolite			Aggregate	40 %
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737979 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Non-Fibrous
Client Sample #: V-56 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile			Filler/Binder	60 %
Amosite			Paint	<1 %
Crocidolite			Aggregate	40 %
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**NAD**	Fibrous Total:	Non-Fibrous Total:	100 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737980 Color: White
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-57 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile	5 %		Filler/Binder	55 %
Amosite			Aggregate	40 %
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**5 %**	Fibrous Total:	Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737981 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-58 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	20 %	Filler/Binder	
Amosite		Fibrous Glass	25 %	Tar	50 %
Crocidolite				Aggregate	5 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737982 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-59 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	20 %	Filler/Binder	
Amosite		Fibrous Glass	25 %	Tar	50 %
Crocidolite				Aggregate	5 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737983 Color: Black
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-60 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS		NON-FIBROUS COMPONENTS	
Chrysotile		Cellulose	20 %	Filler/Binder	
Amosite		Fibrous Glass	25 %	Tar	50 %
Crocidolite				Aggregate	5 %
Tremolite					
Actinolite					
Anthophyllite					
Asbestos Total:	**NAD**	Fibrous Total:	45 %	Non-Fibrous Total:	55 %

SAMPLE LAYER DETAILS

BULK SAMPLE ANALYSIS REPORT

Lab Project #: 226921 Lab Sample #: 737984 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-61 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile	5 %		Filler/Binder	95 %
Amosite				
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**5 %**	Fibrous Total:	Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737985 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-62 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile	5 %		Filler/Binder	95 %
Amosite				
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**5 %**	Fibrous Total:	Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Lab Project #: 226921 Lab Sample #: 737986 Color: Gray
Client Project #: 90177733 Vacant Residence Characterization: Homogeneous, Fibrous
Client Sample #: V-63 Date Analyzed: 12/29/2017
Analyst: Steve Griffin
Comments:

ASBESTOS COMPONENTS		FIBROUS COMPONENTS	NON-FIBROUS COMPONENTS	
Chrysotile	5 %		Filler/Binder	95 %
Amosite				
Crocidolite				
Tremolite				
Actinolite				
Anthophyllite				
Asbestos Total:	**5 %**	Fibrous Total:	Non-Fibrous Total:	95 %

SAMPLE LAYER DETAILS

Terracon

BULK ASBESTOS CHAIN OF CUSTODY

LABORATORY INFORMATION	CLIENT INFORMATION
Omni Environmental, Inc. 2851 Joe DiMaggio Blvd Suite 10 Round Rock, Texas 78665	**Terracon Consultants, Inc.** 6911 Blanco Road San Antonio, Texas 78216
Phone: (512) 258-9114	Phone: (210) 641-2112 Facsimile: (210) 641-2124

PROJECT INFORMATION	
Contact Person	Gabriel Gonzalez
Email Address	wpdean@terracon.com / wcdeveau@terracon.com / gagonzalez@terracon.com
Project Number	90177733
Project Name	Vacant Residence – 1021 El Paso Street
Total Number of Samples	63

SAMPLE IDENTIFICATION	REQUESTED ANALYSIS	TURNAROUND TIME
V - 01 to V - 63	PLM	Standard

Relinquished By:	GGaly	Received By:	
Date:	12-26-17	Date:	
Time:	1615	Time:	
Relinquished By:		Received By:	
Date:		Date:	
Time:		Time:	

Project#226921

APPENDIX D

LEAD-CONTAINING PAINT SAMPLE SUMMARY

APPENDIX D
LEAD-CONTAINING PAINT SAMPLE SUMMARY
VACANT RESIDENCE
1021 EL PASO STREET
SAN ANTONIO, TEXAS
Terracon Project No. 90177733

SAMPLE NO.	COMBINATION/ SUBSTRATE	FUNCTIONAL AREA	SAMPLE LOCATION	LEAD CONTENT
L-01	Tan / Drywall, Wood	Applied to the walls in the Store Sales Area, Store Storage #1, and Apartment Rooms #1, #2, and #3	Store Sales Area – South	150 ppm
L-02	Light Blue / Drywall, Wood	Applied to the walls and ceilings in Store Room #2	Store Room #2 - West	330 ppm
L-03	Pink / Drywall, Wood	Applied to the walls, ceilings, doors, door frames and baseboards in the Store, Room #1 and behind wood paneling in Apartment Room #3	Apartment Room #3 – South	75 ppm
L-04	White / Drywall, Wood, Plaster	Applied to the walls and ceilings in the Store Restroom (east), and ceilings in the Apartment	Room #1 – East	<36 ppm
L-05	Green / Drywall	Applied to the walls and ceilings in the Store, Restroom (west)	Restroom – West	200 ppm
L-06	Blue / Drywall	Applied to the walls in the Store Storage #2 (west)	Store Storage 2 – West	400 ppm
L-07	Light Green / Drywall, Wood	Applied to the walls and ceiling throughout the House (except walls in Room #1)	House Room #2 – East	580 ppm
L-08	Light Blue / Plaster	Applied to the exterior walls (south portion) of the Main Building	Exterior – West	210 ppm
L-09	Light Green / Plaster	Applied to the exterior walls (north portion) of the Main Building	Exterior – East	45 ppm
L-10	Green / Wood, Plaster	Applied to the exterior door and window frames of the Apartment	Exterior - West	4,700 ppm
L-11	**Light Blue / Wood**	**Applied to the window frames, door frames, baseboards, and doors in Store Sales Area**	**2 XRF readings throughout the functional areas**	**1.1 to 4.4 mg/cm²**
L-12	**Light Green / Wood, Drywall**	**Applied to the baseboards, window frame, door frame and walls in the House, Room #1**	**4 XRF readings throughout the functional areas**	**1.1 to 2.2 mg/cm²**

< = Less Than
ppm = Parts per Million

APPENDIX E

LEAD LABORATORY ANALYTICAL REPORT

Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 17-12-03655

Client: Terracon - San Antonio
6911 Blanco Road
San Antonio, TX 78216

Received Date: 12/27/2017
Analyzed Date: 01/02/2018
Reported Date: 01/02/2018

Project/Test Address: Vacant Residence; 1021 El Paso Street; San Antonio, Texas
Collection Date: 12/26/2017

Client Number: 45-4903

Laboratory Results

Fax Number: 210-641-2124

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
17-12-03655-001	V-L01		150	0.015	L04
17-12-03655-002	V-L02		330	0.033	L04
17-12-03655-003	V-L03		75	0.0075	L04
17-12-03655-004	V-L04		<36	<0.0036	
17-12-03655-005	V-L05		200	0.020	
17-12-03655-006	V-L06		400	0.040	
17-12-03655-007	V-L07		580	0.058	L04
17-12-03655-008	V-L08		210	0.021	
17-12-03655-009	V-L09		45	0.0045	L04
17-12-03655-010	V-L10		4700	0.47	

Environmental Hazards Services, L.L.C

Client Number: 45-4903 Report Number: 17-12-03655

Project/Test Address: Vacant Residence; 1021 El Paso Street; San Antonio, Texas

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID

Sample Narratives:

L04: Sample contains substantial amounts of substrate which may affect the calculated results with units of ppm and % by weight.

Preparation Method: ASTM E-1979-12

Analysis Method: EPA SW846 7000B

Accreditation #: TX T104704248-07TX

Reviewed By Authorized Signatory: Melissa Kanode

Missy Kanode
QA/QC Clerk

The HUD lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limit (RL) for samples prepared by ASTM E-1979-12 is 10.0 ug Total Pb. The RL for samples prepared by EPA SW846 3050B is 25.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm3 are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C.

ELLAP Accredtitation through AIHA-LAP, LLC (100420), NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

17-12-03655

Lead Chain-of-Custody

EHS Laboratories™

Due Date: 01/02/2018 (Tuesday) AE

KH

Environmental Hazards Services, LLC

www.leadlab.com
(800) 347-4010
(804) 275-4907 (fax)

7469 Whitepine Rd
Richmond, VA
23237

Company Name: Terracon Consultants, Inc. Address: 6911 Blanco Road City/State/Zip: San Antonio, Texas 78216

Phone: (210) 714-2086 Fax: (210) 641-2124 E-mail: gagonzalez@terracon.com Acct. Number: 45-4903

Project Name / Testing Address: Vacant Residence / 1021 El Paso Street **City/State (Required):** San Antonio, Texas

Collected by: Gabriel Gonzalez Certification Number: 2071064 Purchase Order Number: 90177733

*** Do wipe samples submitted meet ASTM E1792 requirements?** Yes ☐ No ☐

Turn Around Time (TAT)

☐ 1-Day ☑ 3-Day

☐ Same Day (Must Call Ahead)

☐ Weekend (Must Call Ahead)

If no TAT is specified, sample(s) will be processed and charged as 3-Day TAT.

Sample Type

Single Dust Wipe = DW Soil = S
Paint Chip = PC Air = A
Composite Soil = CS

Abbreviations

FR	= Family Room	F	= Front	0	= Basement
LR	= Living Room	R	= Rear	KT	= Kitchen
DN	= Den	LT	= Left	BA	= Bath
DR	= Dining Room	RT	= Right	BR	= Bedroom
1	= 1st Fl	2	= 2nd Fl		

Surface Type for Dust Wipe

FL = Floor
CP = Carpet
SL = Window Sill
WW = Window Well

No.	Sample Type	Date Collected	Client Sample ID	Collection Location (LR, KT, LTFBR, RTRBR, etc.)	Surface Type	Area: Length X Width in inches (Provide paint chip area only if requesting mg/cm2)	Paint Chip: mg/cm²	Paint Chip: PPM	Paint Chip: %	Air: Flow Rate (L/ min)	Air: Total Time (minutes)	Air: Volume (Total Liters)	Comments
1	PC	12/26/17	V-L01			X							
2	PC	12/26/17	V-L02			X							
3	PC	12/26/17	V-L03			X							
4	PC	12/26/17	V-L04			X							
5	PC	12/26/17	V-L05			X							
6	PC	12/26/17	V-L06			X							
7	PC	12/26/17	V-L07			X							
8	PC	12/26/17	V-L08			X							
9	PC	12/26/17	V-L09			X							
10	PC	12/26/17	V-L10			X							

10 KH

Released by:	KT HARRIS	Signature:	Date/Time: 12-26-17 1615
Received by:		Signature:	Date/Time: 12.27.17 @ 1:06pm

APPENDIX F

LEAD BASED PAINT XRF ANALYTICAL REPORT

LEAD BASED PAINT XRF ANALYTICAL REPORT

Terracon Consultants, Inc.
San Antonio, Texas

INSPECTION DATE:	12/26/2017
REPORT NUMBER:	90177733
INSTRUMENT TYPE:	Heuresis Corp. Pb200i XRF Lead Paint Analyzer 1570
ACTION LEVEL:	1.0 mg/cm²
STATEMENT:	The calibration of the Heuresis Pb200i XRF instrument was done in accordance with the Performance Characteristic Sheet (PCS). The Heuresis Pb200i XRF instrument was calibrated using the paint film nearest 1.0 mg/cm2 in the NIST Standard Reference Material (SRM).

LEAD BASED PAINT XRF ANALYTICAL REPORT

Inspection Date: 12/26/2017
Action Level: 1.0 mg/cm²
Report Number: 90177733
Total Readings: 57
Unit Started: 12/26/2017 13:05:59
Unit Ended: 12/26/2017 13:51:36

Inspection Site: Vacant Residence
1021 El Paso Street
San Antonio, TX

Read #	Result	Substrate	Side	Condition	Color	Calibration	Interior	Exterior	Lead (mg/cm²)	Mode
1	Positive			Intact		Calibration			1.1 mg/cm²	Action Level
2	Positive			Intact		Calibration			1.0 mg/cm²	Action Level
3	Positive			Intact		Calibration			1.1 mg/cm²	Action Level
4	Negative	Drywall	A	Intact	Tan		Store Sales Area		-0.1 mg/cm²	Action Level
5	Negative	Drywall	C	Intact	Tan		Store Sales Area		0.6 mg/cm²	Action Level
6	Negative	Drywall	B	Intact	Tan		Store Storage 1		0.1 mg/cm²	Action Level
7	Negative	Drywall	D	Intact	Tan		Store Storage 1		0.0 mg/cm²	Action Level
8	Negative	Drywall	A	Intact	Tan		Store Kitchen		0.1 mg/cm²	Action Level
9	Negative	Drywall	C	Intact	Tan		Store Kitchen		0.6 mg/cm²	Action Level
10	Negative	Wood	B	Intact	Tan		Apartment Room 3		0.1 mg/cm²	Action Level
11	Negative	Wood	D	Intact	Tan		Apartment Room 3		0.0 mg/cm²	Action Level
12	Negative	Wood	B	Intact	Tan		Apartment Room 2		-0.1 mg/cm²	Action Level
13	Negative	Wood	D	Intact	Tan		Apartment Room 2		-0.2 mg/cm²	Action Level
14	Positive	Wood		Intact	Lt-Blue		Store Sales Area		1.1 mg/cm²	Action Level
15	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.0 mg/cm²	Action Level
16	Positive	Wood		Intact	Lt-Blue		Store Sales Area		4.4 mg/cm²	Action Level
17	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.7 mg/cm²	Action Level
18	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.0 mg/cm²	Action Level
19	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.2 mg/cm²	Action Level
20	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.0 mg/cm²	Action Level
21	Negative	Wood		Intact	Lt-Blue		Store Sales Area		0.7 mg/cm²	Action Level
22	Negative	Drywall	A	Intact	Pink		Store Room 1		0.0 mg/cm²	Action Level
23	Negative	Drywall	D	Intact	Pink		Store Room 1		-0.3 mg/cm²	Action Level
24	Negative	Drywall	D	Intact	Lt-Green		Store Restroom		-0.2 mg/cm²	Action Level

LEAD BASED PAINT XRF ANALYTICAL REPORT

Inspection Date: 12/26/2017
Action Level: 1.0 mg/cm²
Report Number: 90177733
Total Readings: 57
Unit Started: 12/26/2017 13:05:59
Unit Ended: 12/26/2017 13:51:36

Inspection Site: Vacant Residence
1021 El Paso Street
San Antonio, TX

Read #	Result	Substrate	Side	Condition	Color	Calibration	Interior	Exterior	Lead (mg/cm²)	Mode
25	Negative	Drywall	B	Intact	White		Store Restroom		-0.1 mg/cm²	Action Level
26	Negative	Drywall	A	Intact	Lt-Blue		Store Room 2		0.0 mg/cm²	Action Level
27	Negative	Drywall	C	Intact	Lt-Blue		Store Room 2		-0.1 mg/cm²	Action Level
28	Negative	Drywall	D	Intact	Blue		Store Storage 2		0.0 mg/cm²	Action Level
29	Negative	Wood		Intact	White		Apartment Room 2		0.0 mg/cm²	Action Level
30	Negative	Wood		Intact	White		Apartment Room 2		-0.1 mg/cm²	Action Level
31	Negative	Wood		Intact	White		Apartment Room 2		-0.1 mg/cm²	Action Level
32	Negative	Wood		Intact	White		Apartment Room 2		-0.2 mg/cm²	Action Level
33	Positive	Drywall	C	Intact	Lt-Green		House Room 1		1.1 mg/cm²	Action Level
34	Positive	Drywall	C	Intact	Lt-Green		House Room 1		1.4 mg/cm²	Action Level
35	Negative	Drywall	B	Intact	Lt-Green		House Room 2		-0.3 mg/cm²	Action Level
36	Negative	Drywall	D	Intact	Lt-Green		House Room 2		0.0 mg/cm²	Action Level
37	Negative	Drywall	A	Intact	Lt-Green		House Room 3		0.2 mg/cm²	Action Level
38	Negative	Drywall	A	Intact	Lt-Green		House Room 3		-0.1 mg/cm²	Action Level
39	Negative	Drywall	A	Intact	Lt-Green		House Restroom		-0.1 mg/cm²	Action Level
40	Negative	Drywall	C	Intact	Lt-Green		House Restroom		-0.1 mg/cm²	Action Level
41	Positive	Drywall	D	Intact	Lt-Green		House Room 1		1.3 mg/cm²	Action Level
42	Negative	Drywall	D	Intact	Lt-Green		House Room 1		0.6 mg/cm²	Action Level
43	Positive	Drywall	D	Intact	Lt-Green		House Room 1		2.2 mg/cm²	Action Level
44	Negative	Drywall	B	Intact	Lt-Green		House Room 2		0.0 mg/cm²	Action Level
45	Negative	Drywall	B	Intact	Lt-Green		House Room 2		0.1 mg/cm²	Action Level
46	Negative	Plaster	B	Intact	Lt-Green			Walls	-0.3 mg/cm²	Action Level
47	Negative	Plaster	B	Intact	Lt-Blue			Walls	-0.3 mg/cm²	Action Level
48	Negative	Plaster	C	Intact	Lt-Blue			Walls	0.0 mg/cm²	Action Level

LEAD BASED PAINT XRF ANALYTICAL REPORT

Inspection Date: 12/26/2017
Action Level: 1.0 mg/cm²
Report Number: 90177733
Total Readings: 57
Unit Started: 12/26/2017 13:05:59
Unit Ended: 12/26/2017 13:51:36

Inspection Site: Vacant Residence
1021 El Paso Street
San Antonio, TX

Read #	Result	Substrate	Side	Condition	Color	Calibration	Interior	Exterior	Lead (mg/cm²)	Mode
49	Negative	Plaster	D	Intact	Lt-Blue			Walls	-0.4 mg/cm²	Action Level
50	Negative	Plaster	D	Intact	Lt-Green			Walls	-0.1 mg/cm²	Action Level
51	Negative	Plaster	A	Intact	Lt-Green			Walls	0.0 mg/cm²	Action Level
52	Negative	Plaster	D	Intact	Green			Walls	0.0 mg/cm²	Action Level
53	Negative	Wood	D	Intact	Green			Walls	0.3 mg/cm²	Action Level
54	Negative	Wood	D	Intact	Green			Walls	0.5 mg/cm²	Action Level
55	Positive			Intact		Calibration			1.1 mg/cm²	Action Level
56	Positive			Intact		Calibration			1.0 mg/cm²	Action Level
57	Positive			Intact		Calibration			1.1 mg/cm²	Action Level

------ END OF READINGS ------

APPENDIX G

XRF PERFORMANCE CHARACTERISTIC SHEET

Performance Characteristic Sheet

EFFECTIVE DATE: **December 1, 2015**

MANUFACTURER AND MODEL:

Make: ***Heuresis***
Models: ***Model Pb200i***
Source: ***^{57}Co, 5 mCi (nominal – new source)***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Action Level mode

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

Not applicable

INCONCLUSIVE RANGE OR THRESHOLD:

ACTION LEVEL MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick Concrete Drywall Metal Plaster Wood	1.0 1.0 1.0 1.0 1.0 1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated using test results on building components in the HUD archive. Testing was conducted on 146 test samples in November 2015, with two separate instruments running software version 2.1-2 in Action Level test mode. The actual source strength of each instrument on the day of testing was approximately 2.0 mCi; source ages were approximately one year.

OPERATING PARAMETERS

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If the average (rounded to 1 decimal place) of three readings is outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instrument into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

> Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.
>
> Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.
>
> <u>For each substrate type</u> (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):
>
> Correction value = (1st + 2nd + 3rd + 4th + 5th + 6th *Reading*)/6 - 1.02 mg/cm^2
>
> Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below. Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and the retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF readings.

Compute the average of all ten re-test XRF readings.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

In the Action Level paint test mode, the instrument takes the longest time to complete readings close to the Federal standard of 1.0 mg/cm^2. The table below shows the mean and standard deviation of actual reading times by reading level for paint samples during the November 2015 archive testing. The tested instruments reported readings to one decimal place. No significant differences in reading times by substrate were observed. These times apply only to instruments with the same source strength as those tested (2.0 mCi). Instruments with stronger sources will have shorter reading times and those with weaker sources, longer reading times, than those in the table.

Mean and Standard Deviation of Reading Times in Action Level Mode by Reading Level		
Reading (mg/cm^2)	**Mean Reading Time (seconds)**	**Standard Deviation (seconds)**
< 0.7	3.48	0.47
0.7	7.29	1.92
0.8	13.95	1.78
0.9 – 1.2	15.25	0.66
1.3 – 1.4	6.08	2.50
$\geq$ 1.5	3.32	0.05

CLASSIFICATION OF RESULTS:

XRF results are classified as **positive** if they are **greater than or equal** to the stated threshold for the instrument (1.0 mg/cm^2), and *negative* if they are *less than* the threshold.

DOCUMENTATION:

A report titled *Methodology for XRF Performance Characteristic Sheets* (EPA 747-R-95-008) provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. The report may be downloaded at http://www2.epa.gov/lead/methodology-xrf-performance-characteristic-sheets-epa-747-r-95-008-september-1997.

This XRF Performance Characteristic Sheet (PCS) was developed by QuanTech, Inc., under a contract with the XRF manufacturer.

APPENDIX H

LICENSES AND CERTIFICATIONS

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

TERRACON CONSULTANTS INC

is certified to perform as a

Asbestos Consultant Agency

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

JOHN HELLERSTEDT, M.D.
COMMISSIONER OF HEALTH

License Number: 100157

Control Number: 96944

Expiration Date: 11/30/2018

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

TERRACON CONSULTANTS INC

is certified to perform as a

Lead Firm

in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1955 and Title 25, Texas Administrative Code, Chapter 295 relating to Texas Environmental Lead Reduction, as long as this license is not suspended or revoked.

John Hellerstedt, M.D.
Commissioner of Health

License Number: 2110106

Control Number 6799

Expiration Date: 3/20/2018

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

Health Services

Asbestos Individual Consultant

WILL C DEVEAU
License No. 105734
Control No. 97166
Expiration Date: 3/10/2019

Texas Department of State Health Services

Asbestos Individual Consultant

RICHARD I HOWES

License No. 105406

Control No. 97017

Expiration Date: 3/21/2018

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

WARREN P DEAN

is certified to perform as a

Lead Risk Assessor

in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1955 and Title 25, Texas Administrative Code, Chapter 295 relating to Texas Environmental Lead Reduction, as long as this license is not suspended or revoked.

John Hellerstedt, M.D.
Commissioner of Health

License Number: 2071063

Expiration Date: 4/28/2018

Void After Expiration Date

VOID IF ALTERED

Control Number 7226

NON-TRANSFERABLE

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

RICHARD I HOWES

is certified to perform as a

Lead Abatement Project Designer

in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1955 and Title 25, Texas Administrative Code, Chapter 295 relating to Texas Environmental Lead Reduction, as long as this license is not suspended or revoked.

Kirk Cole, Interim
Commissioner of Health

License Number: 2090034

Expiration Date: 11/19/2017

Void After Expiration Date

VOID IF ALTERED

Control Number 6024

NON-TRANSFERABLE

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

OMNI ENVIRONMENTAL INC

is certified to perform as a

Asbestos Laboratory
PLM

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

JOHN HELLERSTEDT, M.D.
COMMISSIONER OF HEALTH

License Number: 300087

Control Number: 96203

Expiration Date: 6/15/2019

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 102061-0

Omni Environmental, Inc.

Round Rock, TX

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2017-07-01 through 2018-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

Texas Commission on Environmental Quality

NELAP-Recognized Laboratory Accreditation is hereby awarded to

Environmental Hazards Services, LLC

7469 Whitepine Road
North Chesterfield, VA 23237-2261

in accordance with Texas Water Code Chapter 5, Subchapter R, Title 30 Texas Administrative Code Chapter 25, and the National Environmental Laboratory Accreditation Program.

The laboratory's scope of accreditation includes the fields of accreditation that accompany this certificate. Continued accreditation depends upon successful ongoing participation in the program. The Texas Commission on Environmental Quality urges customers to verify the laboratory's current location(s) and accreditation status for particular methods and analyses (www.tceq.texas.gov/goto/lab). Accreditation does not imply that a product, process, system or person is approved by the Texas Commission on Environmental Quality.

Certificate Number: T104704248-16-8
Effective Date: 1/1/2017
Expiration Date: 12/31/2017

Executive Director Texas Commission on Environmental Quality

Texas Commission on Environmental Quality

NELAP - Recognized Laboratory Fields of Accreditation

Environmental Hazards Services, LLC

7469 Whitepine Road
North Chesterfield, VA 23237-2261

Certificate: T104704248-16-8
Expiration Date: 12/31/2017
Issue Date: 1/1/2017

These fields of accreditation supercede all previous fields. The Texas Commission on Environmental Quality urges customers to verify the laboratory's current accreditation status for particular methods and analyses.

Matrix: ***Solid & Chemical Materials***

Method	Analyte	AB	Analyte ID	Method ID
EPA 1311	TCLP	VA	849	10118806
EPA 6010	Aluminum	VA	1000	10155609
	Antimony	VA	1005	10155609
	Arsenic	VA	1010	10155609
	Barium	VA	1015	10155609
	Beryllium	VA	1020	10155609
	Cadmium	VA	1030	10155609
	Chromium	VA	1040	10155609
	Cobalt	VA	1050	10155609
	Copper	VA	1055	10155609
	Iron	VA	1070	10155609
	Lead	VA	1075	10155609
	Magnesium	VA	1085	10155609
	Manganese	VA	1090	10155609
	Molybdenum	VA	1100	10155609
	Selenium	VA	1140	10155609
	Silver	VA	1150	10155609
	Thallium	VA	1165	10155609
	Titanium	VA	1180	10155609
	Vanadium	VA	1185	10155609
	Zinc	VA	1190	10155609
EPA 7471	Mercury	VA	1095	10166208

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Environmental Hazards Services, LLC

7469 White Pine Road, Richmond, VA 23237

Laboratory ID: 100420

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: May 01, 2018
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: May 01, 2018
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: May 01, 2018
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Gerald R Schultz

Gerald Schultz, CIH
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 14: 03/26/2014

Date Issued: 02/29/2016

APPENDIX I

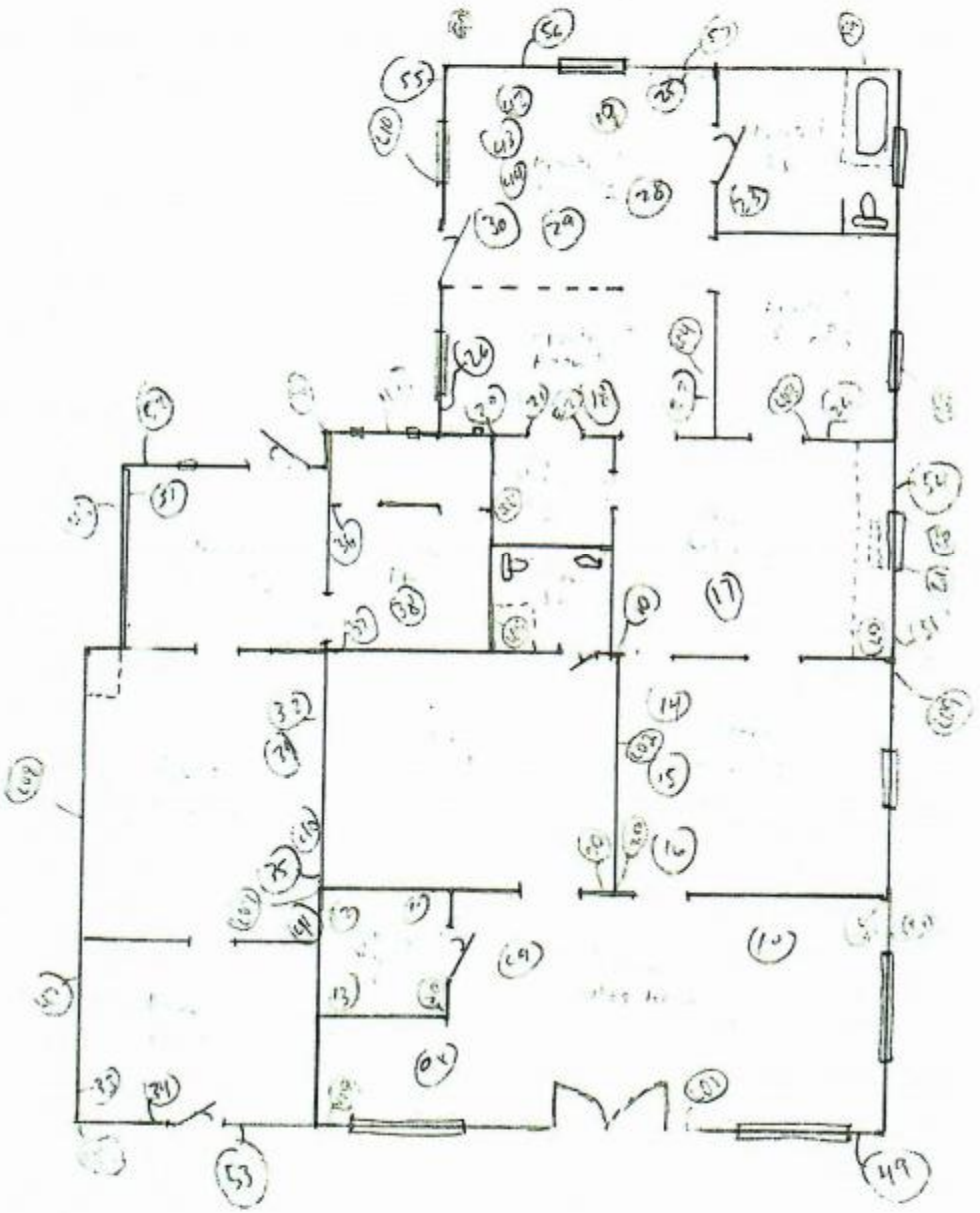
SAMPLE LOCATION MAP

Terracon

PROJECT: 1021 El Paso Street. Page 1 of 1

JOB NO. 90177733 Date 12-26-17 Comp. By WPJ CHECKED BY:

N



Form 112-5-99

ATTACHMENT B
HUD & Other Forms

General Contract Conditions for Small Construction/Development Contracts

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
OMB Approval No. 2577-0157 (exp. 3/31/2020)

Applicability. The following contract clauses are applicable and must be inserted into **small construction/development contracts**, **greater than $2,000 but not more than $150,000.**

1. Definitions

Terms used in this form are the same as defined in form HUD-5370

2. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers. The only liens on the PHA's property shall be the Declaration of Trust or other liens approved by HUD.

3. Disputes

(a) Except for disputes arising under the **Labor Standards** clauses, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
(b) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
(c) The Contracting Officer shall, within 30 days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
(d) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within 30 days after receipt of the Contracting Officer's decision.
(e) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

4. Default

(a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to proceed with the work (or separable part of the work) that has been delayed. In the event, the PHA may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.
(b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if –
  (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor; and
  (2) The Contractor, within 10 days from the beginning of such delay notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of Fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the **Disputes** clause of this contract.
(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligation of the parties will be the same as if the termination had been for convenience of the PHA.

5. Termination for Convenience

(a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
(b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
(c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
(d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

6. Insurance

(a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:

(1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.

(2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than $ _____ [Contracting Officer insert amount] per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims-made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

(3) Automobile Liability on owned and non -owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than $ _____ [Contracting Officer insert amount] per occurrence.

(b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.

(c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

7. Contract Modifications

(a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.

(b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

(c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

8. Changes

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) PHA-furnished facilities, equipment, materials, services, or site; or,

(4) Directing the acceleration in the performance of the work.

(b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

(1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor

breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs - when size of change warrants revision.

(2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

(3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change.

The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.

(g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.

(h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.

(i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.

(j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

9. Examination and Retention of Contractor's Records

The HA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

10. Rights in Data and Patent Rights (Ownership and Proprietary Interest)

The HA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials, and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda or letters concerning the research and reporting tasks of this Contract.

11. Energy Efficiency

The Contractor shall comply with all mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under this contract is performed.

12. Procurement of Recovered Materials

(a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.

(b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of $10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of $10,000 of the item both under and outside that contract.

13. Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the

qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

14. Labor Standards - Davis-Bacon and Related Acts

(a) Minimum Wages.

(1) All laborers and mechanics employed under this contract in the construction or development of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(a) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(b) The classification is utilized in the area by the construction industry; and

(c) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; ***provided***, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(b) Withholding of Funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.

(c) Payrolls and Basic Records.

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c)(1) of this clause and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(d) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(e) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.
Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(f) Equal Employment Opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(g) Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(h) Contract Termination; Debarment. A breach of the labor standards clauses in this contract may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.

(i) Compliance with Davis-Bacon and related Act Requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

(j) Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.

(k) Certification of Eligibility.

(1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government

contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

(l) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

(m) Non-Federal Prevailing Wage Rates. Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:

(i) the applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;

(ii) an applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or

(iii) an applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

ATTACHMENT C
Wage Decision

General Decision Number: TX190007 01/04/2019TX7
Superseded General Decision Number: TX20180016

State: Texas Construction Types: Heavy and Highway

Counties: Atascosa, Bandera, Bastrop, Bell, Bexar, Brazos, Burleson, Caldwell, Comal, Coryell, Guadalupe, Hays, Kendall, Lampasas, McLennan, Medina, Robertson, Travis, Williamson and Wilson Counties in Texas.

HEAVY (excluding tunnels and dams, not to be used for work on Sewage or Water Treatment Plants or Lift / Pump Stations in Bell, Coryell, McClennon and Williamson Counties) and HIGHWAY Construction Projects

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

* SUTX2011-006 08/03/2011	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 12.56	
ELECTRICIAN	$ 26.35	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 12.94	
Structures	$ 12.87	
LABORER		
Asphalt Raker	$ 12.12	
Flagger	$ 9.45	
Laborer, Common	$ 10.50	
Laborer, Utility	$ 12.27	

Pipelayer	$ 12.79
Work Zone Barricade Servicer	$ 11.85
PAINTER (Structures)	$ 18.34
POWER EQUIPMENT OPERATOR:	
Agricultural Tractor	$ 12.69
Asphalt Distributor	$ 15.55
Asphalt Paving Machine	$ 14.36
Boom Truck	$ 18.36
Broom or Sweeper	$ 11.04
Concrete Pavement Finishing Machine	$ 15.48
Crane, Hydraulic 80 tons or less	$ 18.36
Crane, Lattice Boom 80 tons or less	$ 15.87
Crane, Lattice Boom over 80 tons	$ 19.38
Crawler Tractor	$ 15.67
Directional Drilling Locator	$ 11.67
Directional Drilling Operator	$ 17.24
Excavator 50,000 lbs or Less	$ 12.88
Excavator over 50,000 lbs	$ 17.71
Foundation Drill, Truck Mounted	$ 16.93
Front End Loader, 3 CY or Less	$ 13.04
Front End Loader, Over 3 CY	$ 13.21
Loader/Backhoe	$ 14.12
Mechanic	$ 17.10
Milling Machine	$ 14.18
Motor Grader, Fine Grade	$ 18.51
Motor Grader, Rough	$ 14.63
Pavement Marking Machine	$ 19.17
Reclaimer/Pulverizer	$ 12.88
Roller, Asphalt	$ 12.78
Roller, Other	$ 10.50
Scraper	$ 12.27
Spreader Box	$ 14.04
Trenching Machine, Heavy	$ 18.48
Servicer	$ 14.51
Steel Worker	
Reinforcing	$ 14.00
Structural	$ 19.29
TRAFFIC SIGNAL INSTALLER	
Traffic Signal/Light Pole Worker	$ 16.00
TRUCK DRIVER	
Lowboy-Float	$ 15.66
Off Road Hauler	$ 11.88
Single Axle	$ 11.79
Single or Tandem Axle Dump Truck	$ 11.68
Tandem Axle Tractor w/Semi Trailer	$ 12.81
WELDER	$ 15.97

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union

rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION