APPENDIX E
Hazardous Building Material Survey

PACIFIC RIM ENVIRONMENTAL, INC.

Regulated Building Materials Survey

Port of Anacortes Quiet Cove Site

"O" Avenue & 2nd Street
Anacortes, WA

Prepared for:

GeoEngineers, Inc.
2101 4th Avenue Suite 950
Seattle, WA 98121

Prepared By:

Paul S. Hanway
Sr. Project Manager

Date Prepared: 04/24/2019
PacRim # 16596

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Report Reviewed By: Dale Date Reviewed: 4/25/2019

Section 1.0 Scope of Work
Quite Cove | "O" Avenue & 2nd Street Anacortes, Washington

On April 15th, 2019, Matt DeDominces, an AHERA Accredited Building Inspector and DOC Lead Inspector for Pacific Rim Environmental, Inc. (PacRim), performed a regulated building material survey at the subject property for two structures "Quite Cove Site" located near "O" Avenue and 2nd Street in Anacortes, WA. The subject property work area is further described below.

Site: The subject structures are wooden framed buildings with metal sidings and office areas with warehouse / shop areas. Age of building construction is unknown.

- Building 1 – approximately 4,300 square feet of office and warehouse.
- Building 2 – approximately 1,650 square feet

Limitations: Due to occupied nature of the ongoing business some areas were not completely accessible and non-destructive methods were used.

Field inspection, data collection, and report generation were performed according to the following **Scope of Work**:

Asbestos-Containing Materials (ACM)

1. Bulk sampling and analysis of suspect asbestos-containing materials (ACM).
2. Analysis of suspect ACM by a NVLAP accredited laboratory.
3. Quantity estimates of ACM.
4. Written report including recommendations based on the technician's observations, abatement (removal) cost estimates, sample descriptions, and sample location.
5. Statement of Compliance with W.A.C. 296-62-07721 Sign-off form.

Lead-Based Paints (LBP)

6. Perform limited screening of suspect lead-based paints.
7. Written report including: Sample descriptions, conditions, locations, analytical results, and recommendations.

Universal Waste Inventory

8. Inspect and inventory lights and equipment to identify fixture and lamp type to determine presence of PCB and/or mercury.

DEFINITIONS

Surfacing: Materials; which are either spray-applied or troweled-on for acoustical, decorative or fireproofing purposes.

Thermal System Insulation (TSI): Insulating materials used to inhibit heat transfer or to prevent condensation on pipes, boilers, tanks, ducts and various other components.

Miscellaneous (Misc.): All other materials not included in the above categories such as floor tile, ceiling tile, roofing felt, cementitious materials, wallboard systems and products such as caulking, mastics and putties.

Homogeneous Material: For the purposes of this report; ***Homogeneous Material*** is defined as an area of surfacing material, thermal system insulation, or miscellaneous material that is uniform in color, texture and application. When materials are determined to be Homogeneous by the on-site AHERA Accredited Building Inspector; although laboratory results may vary, in accordance with AHERA regulations, if any of the samples in a Homogeneous Material Sample Set are found to contain asbestos, then all materials in the Sample Set must be considered to contain asbestos.

HM#: Homogeneous Material Number indicates which Homogeneous Material Sample Set that the collected sample belongs to.

Homogeneous Area: For the purposes of this report; ***Homogeneous Area*** is defined as a summary of all areas where a Homogeneous Material was identified within the Project Scope.

SURVEY FINDINGS SUMMARY:

The survey was intended to identify possible asbestos-containing materials (ACM) on the interior and exterior of the building. This inspection covered only those areas, which were exposed and/or physically accessible to the inspector. Materials uncovered during the course of demolition, renovation, or maintenance activities that are not identified in this inspection report must be presumed to contain asbestos until PLM analysis proves that this material is not asbestos-containing.

This survey is not intended for, nor should be used as a design specification. The Asbestos in Schools Hazard Amendment and Reauthorization Act (ASHARA), effective November 20, 1990, expanded accreditation requirements to apply to persons who work with asbestos in public and commercial buildings as well as schools. Specifically, ASHARA expanded the Toxic Substances Control Act (TSCA) Section 206 (a) (1) and (3) to require accreditation for any person who designs or conducts a response action with respect to friable ACM in a building. TSCA Section 207 provides for civil penalties of $5,000 for each day of a violation for not employing accredited individuals to design and conduct response actions. Sampling of suspect asbestos-containing materials was conducted as prescribed in 40 CFR 763.86.

Suspect asbestos-containing materials were identified and classified as a surfacing material, thermal system insulation, or miscellaneous materials.

Bulk samples collected were submitted for sample analysis in accordance with method EPA-600/R-93/116: "Method for the Determination of Asbestos in Bulk Building Materials". Analyses were performed at Pacific Rim Environmental Inc.'s NVLAP Accredited Laboratory (Lab Code 101631-0). Materials are positive for asbestos if they are found to contain greater than one percent (1%) or 1% asbestos. Materials that are less than one percent (<1%) asbestos, although not considered positive for asbestos, when removed must follow applicable Washington State regulations. ***See Appendix G for WA State Guidelines for Less than 1% Asbestos Material.***

A total of thirty (30) bulk samples were collected and submitted for PLM laboratory analysis. Five (05) of these samples were found to contain greater than 1% asbestos. Three (03) of these samples were found to contain less than 1% asbestos.

HOMOGENEOUS MATERIALS RESULTS SUMMARY

Materials identified as asbestos-containing materials (ACM) as defined by the EPA:

HM#	AHERA Category	Homogeneous Material Description	Homogeneous Area	Quantity (Approximate)	Sample #'s	Asbestos Content
7	Misc.	Putty / caulk	Garage 1, at shed roof to corrugated wall penetration.	30 L.F.	7	Chrysotile 7-10%
16	Surfacing	Coatings silver on black.	Throughout Roof	7000 S.F.	19, 20	Layer 1 (silver coating): None Detected. Layer 2 (Black mastic): Chrysotile 3-15%
23	Misc.	Flooring sheet vinyl, 2 inseparable layers.	Office 2 storage Room floor.	160 S.F.	27	Layers 1-4: None Detected. Layer 5 (White backing): Chrysotile 35-40% Layer 6-7: None Detected.
25	Misc.	Roofing tar	At the North West corner of office 2, on cement slab.	16 S.F.	29	Chrysotile 1-3%

Materials determined to contain less than one percent (<1%) asbestos

HM#	AHERA Category	Homogeneous Material Description	Homogeneous Area	Quantity (Approximate)	Sample #'s	Asbestos Content
2	Surfacing	Coatings On corrugated tin.	Garage 1, area 2, North wall.	350 S.F.	2	Tremolite <1%
10	Misc.	Window Putty (2'x2' Window)	Garage 2 west exterior.	8 Each	10	Tremolite <1%
17	Misc.	Window Putty (4'x5' window)	Office 2, to the right of front entry.	1 each	21	Layer 1 (Putty): Tremolite <1% Layer 2 (Substrate): None Detected.

Materials determined to be Non-Asbestos:

HM#	AHERA Category	Homogeneous Material Description	Homogeneous Area	Quantity (Approx.)	Sample #'s	Asbestos Content
1	Misc.	Sheetrock (GWB)	Garage 1, area 1, east wall.	N/A	1	None Detected (Both Layers)
3	Surfacing	Coatings On corrugated tin roof.	Garage 1 roof.	N/A	3	None Detected.
4	Misc.	Flooring sheet vinyl	Garage 1, bathroom floor.	N/A	4	None Detected (Both Layers)
5	Misc.	Waterproofing felt	Garage 1, at shed roof.	N/A	5	None Detected.
6	Misc.	rolled roofing	Garage 1, at shed roof.	N/A	6	None Detected.
8	Misc.	rolled roofing	Garage 2 roof.	N/A	8	None Detected (Both Layers)
9	Misc.	Waterproofing felt	Garage 2 roof.	N/A	9	None Detected.
11	Misc.	Putty / caulk	Garage 2, at west exterior, at corrugated tin to fiberglass seam, of wall.	N/A	11	None Detected.
12	Surfacing	Texture on GWB	Garage 2, coat storage area, ceiling.	N/A	12, 13	None Detected (Both Layers)
13	Misc.	Gypsum Wall Board/Tape/Joint Compound	Garage 2, east wall.	N/A	14	None Detected (All Layers)
14	Surfacing	Texture on GWB	Office 1 ceiling.	N/A	15, 16, 17	None Detected (All Layers)
15	Misc.	Sheetrock (GWB)	Office 1, south wall.	N/A	18	None Detected.
18	Misc.	Carpet Mastic	Office 2 floor.	N/A	22	None Detected.
19	Misc.	Sheetrock (GWB)	Office 2, south wall.	N/A	23	None Detected.
20	Misc.	Ceiling tile, 31" by 16"	Office 2 ceiling.	N/A	24	None Detected.
21	Misc.	Ceiling tile 12" x 12"	Office 2 storage Room ceiling.	N/A	25	None Detected.
22	Misc.	Sheetrock (GWB)	Office 2 storage area East wall.	N/A	26	None Detected.
24	Misc.	Sheetrock (GWB)	Garage 1, bathroom, north wall.	N/A	28	None Detected.
26	Misc.	Vapor Barrier brown brittle.	Around the top of the outside of the ceiling of office 2.	N/A	30	None Detected.

If during the course of wall, ceiling or floor demolition, any miscellaneous materials that are not listed in this report are uncovered, sampling ***must*** be performed prior to disturbing these materials.

Section 3.0 Statement of Compliance
Quite Cove | "O" Avenue & 2nd Street Anacortes, Washington

In accordance with W.A.C. 296-62-07721 and PSCAA Regulation III, Article 4, Pacific Rim Environmental, Inc. performed an asbestos survey of the subject structure located at "O" Avenue & 2nd Street in Anacortes, Washington. Should employees or contract personnel encounter any suspect asbestos-containing materials (ACM) it is their responsibility to:

1. Contact a representative of the owner.
2. Consult the inspection report to determine whether or not the suspect material contains asbestos.
3. If the suspect material does not appear in the inspection report, then that material was not sampled and must be presumed to contain asbestos until proven otherwise by sampling and PLM analysis.
4. Ensure that all employees and contractors are informed and advised of the location and type of materials that contain asbestos.

Limitations: Due to occupied nature of the ongoing business some areas were not completely accessible and non-destructive methods were used.

The following Asbestos-containing materials were identified in the survey area:

- **Putty / caulk**
- **Coatings silver on black.**
- **Backing under two layers of Flooring sheet vinyl**
- **Roofing tar**

The following less than 1% (<1%) asbestos-containing materials were identified at the subject property:

- **Coatings On corrugated tin.**
- **Window Putty (2'x2' Window)**
- **Window Putty (4'x5' window)**

I Hereby Attest:

The inspection report has been made available to me. I will inform all subcontractors of the location and types of materials containing asbestos. I am authorized to sign on behalf of my company.

Contractor:	_____	Owner's Rep:	_____
Signature:	_____	Signature:	_____
Print Name:	_____	Print Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____

The inspection and testing performed on the interior and exterior painted surfaces of the subject Property ***did identify*** lead-based paint concentrations at or above the EPA/HUD standard of 1.0 mg/m^2 on the following components:

Sample#	Substrate	Component/Side	Description/Location	Color	Result*	Pbc mg/cm^2
8	Metal	Corrugated tin wall.	Garage 1, west wall.	Gray	Positive	11.0
9	Metal	Corrugated tin wall	Garage 1 East wall.	Gray	Positive	6.0
15	Wood	Wall	Garage 1, bathroom south wall.	White	Positive	1.5
16	Wood	Old bathroom door casing.	Garage 1, bathroom.	White	Positive	15.6
17	Wood	Wall bead board.	Garage 1, east wall.	White	Positive	18.7
18	Wood	Bead board wall.	Garage 1, west wall.	White	Positive	15.8
20	Metal	Corrugated tin wall.	Garage 1, area 2, north wall.	White	Positive	5.1
25	Wood	Roof rake facia.	Garage 1. West end.	White	Positive	1.5
26	Wood	Horizontal facia.	Garage 1north side.	White	Positive	6.3
28	Metal	Corrugated tin wall	Garage 2, north wall.	Silver	Positive	10.1
31	Wood	Rake facia.	Garage 2 north side.	White	Positive	2.5
51	Wood	Window frame	Office 2 at front entry.	Gray	Positive	2.3

The XRF sample results are provided in Appendix D.

The Performance Characteristic Sheet for the Niton XLp 300, September 24, 2004, is provided in Appendix E.

General Information:

It is important to keep in mind that although the EPA/HUD standard uses a criterion of 5,000 parts per million dry weight or 1.00 milligrams per square centimeter (1.00 mg/cm^2) for lead-based paint, there still may be lead present in those results reported as negative. In the event that lead is present, Federal OSHA and Washington State Department of Labor & Industries regulations will still apply, since neither agency has established a concentration of lead in paint below which the lead in construction standards do not apply.

Workers wearing respiratory protection and who have received proper training in the handling of lead contaminated materials must be used for any construction activities (including manual scraping, manual/power sanding, heat gun applications, general cleanup, and demolition) that affect a paint film containing lead.

If the building is to be renovated or remodeled there are procedures regarding the disturbance or removal of the lead-based paints that **can** be followed (i.e. initial air monitoring, clearance sampling, etc.). These procedures can be found in *HUD-0006700 Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. It is not required that these regulations/procedures be utilized on this project, however because these are the only available guidelines for the removal of lead-based paints PRE feels it necessary to inform you of these guidelines.

The only state rules or regulations that currently apply to lead-based paints are WAC 296-155-17603 Scope* and WAC 296-155-17607 Permissible Exposure Limit**. The WAC code states that if lead is detectable in the workplace in any quantity, initial air monitoring must be performed on employees doing demolition, renovation or remodeling work in areas found to have materials containing lead. Also, workers performing lead removal must be trained in accordance with WAC 296-155-17625.

Universal Waste Rules

The Universal Waste Rule (UWR) establishes alternative, streamlined waste management standards in place of most of the Dangerous Waste Regulations, Chapter 173-303 WAC, except for, WAC 173-303-050, 173-303-145 and 173-303-960.

The following lamp types may be characterized as universal waste: fluorescent tubes, high intensity discharge (HID) lamps (mercury vapor, metal halide, high pressure sodium) and compact fluorescent.

The following Universal Waste was identified:

- **Approximately 30 four-foot fluorescent tubes**

The universal waste must be removed and properly disposed of or recycled prior to building demolition.

Disposal of individual lamps is not regulated. However, disposal of large quantities of lamps is subject to dangerous waste regulations (WAC 173-303) and the waste stream must be subjected to TCLP (Toxicity Characteristic Leaching Procedure) analysis to determine the amount of mercury that could leach out of the waste. The TCLP limit for mercury is 0.2 mg/L.

PCBs belong to a broad family of organic chemicals known as chlorinated hydrocarbons. PCBs are produced by the combination of one or more chlorine atoms and a biphenyl molecule. PCBs range in consistency from heavy oily liquids to waxy solids. Prior to 1979, PCBs were widely used in electrical equipment such as transformers, capacitors, switches, and voltage regulators.

A copy of the Washington State Department of Ecology *The Universal Waste Rule WAC 173-303-573*, Publication # 98-407, December 2005, is provided in Appendix F.

Appendix A: Asbestos Inspection Summary

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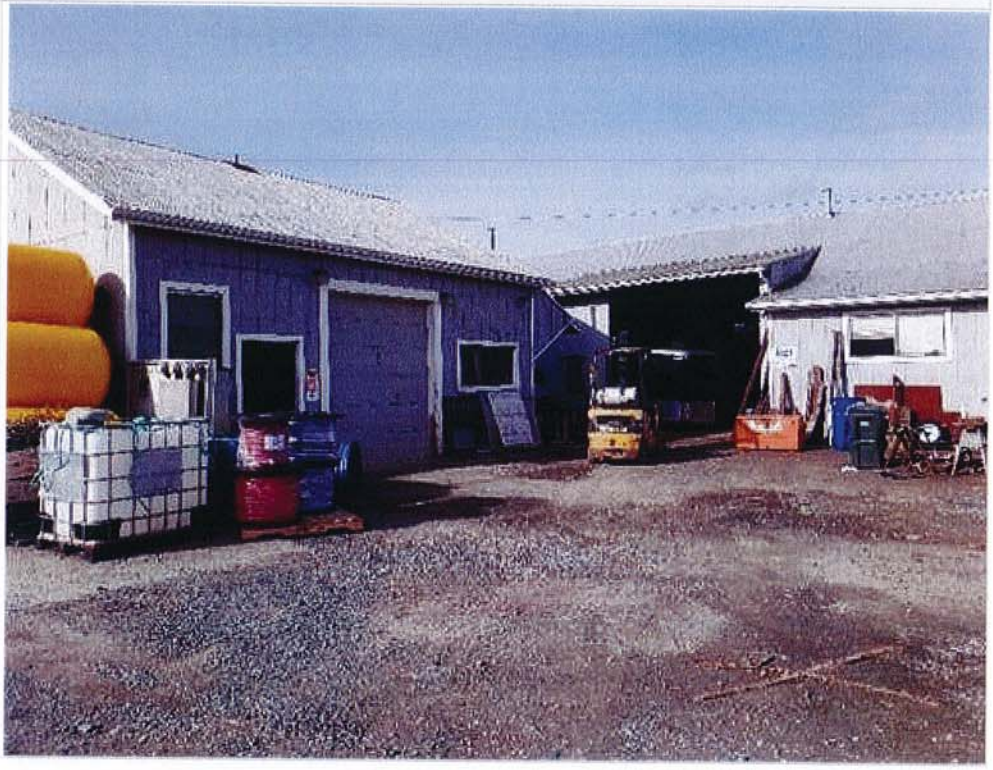
Inspection Summary

Project Information	
Job Number	16596
Project Name	Port of Anacortes Quite Cove Site
Project Address:	Seattle, WA
Client:	GeoEngineers, Inc.
Date of Survey:	15-Apr-2019
PacRim Technician:	Matt DeDominces
Limitations:	
Exterior Photo:	

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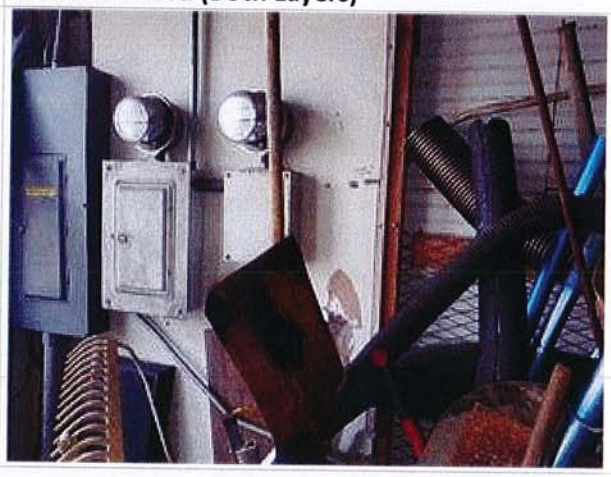
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	1	**Homogenous Material Number**	1
Material Description	Sheetrock (GWB)		
Sample Location	Garage 1, area 1,east wall.		
Quantity	32	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	2	**Homogenous Material Number**	2
Material Description	Coatings On corrugated tin.		
Sample Location	Garage 1, area 2, North wall.		
Quantity	350	**Unit of Measure**	Square Feet
Asbestos Type/%	**Tremolite <1%**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	3	**Homogenous Material Number**	3
Material Description	Coatings On corrugated tin roof.		
Sample Location	Garage 1 roof.		
Quantity	1180	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	4	**Homogenous Material Number**	4
Material Description	Flooring sheet vinyl		
Sample Location	Garage 1, bathroom floor.		
Quantity	36	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	5	**Homogenous Material Number**	5
Material Description	Waterproofing felt		
Sample Location	Garage 1, at shed roof.		
Quantity	300	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	6	**Homogenous Material Number**	6
Material Description	rolled roofing		
Sample Location	Garage 1, at shed roof.		
Quantity	300	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	7	**Homogenous Material Number**	7
Material Description	Putty / caulk		
Sample Location	Garage 1,at shed roof to corrugated wall penetration.		
Quantity	30	**Unit of Measure**	Lineal Feet
Asbestos Type/%	**Chrysotile 7-10%**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	8	**Homogenous Material Number**	8
Material Description	rolled roofing		
Sample Location	Garage 2 roof.		
Quantity	370	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

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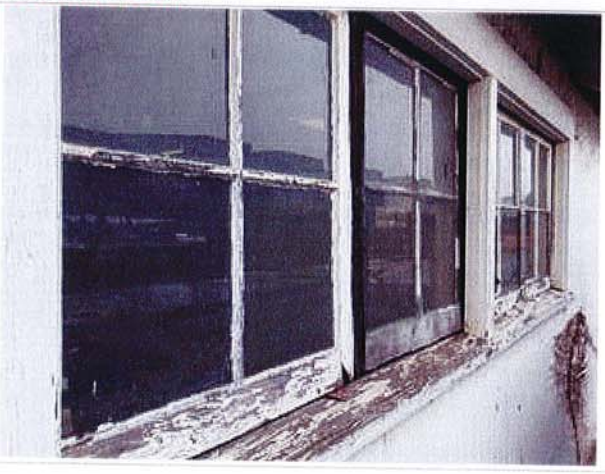
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	9	**Homogenous Material Number**	9
Material Description	Waterproofing felt		
Sample Location	Garage 2 roof.		
Quantity	370	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	10	**Homogenous Material Number**	10
Material Description	Window Putty		
Sample Location	Garage 2 west exterior.		
Quantity	8 windows at 2ft x 2ft	**Unit of Measure**	Each
Asbestos Type/%	**Tremolite <1%**		
Sample Photo			

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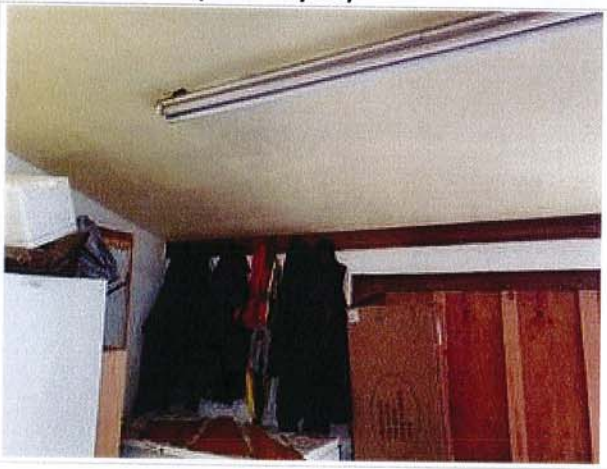
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	11	**Homogenous Material Number**	11
Material Description	Putty / caulk		
Sample Location	Garage 2, at west exterior, at corrugated tin to fiberglass seam, of wall.		
Quantity	50	**Unit of Measure**	Lineal Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	12	**Homogenous Material Number**	12
Material Description	Texture on GWB		
Sample Location	Garage 2, coat storage area, ceiling.		
Quantity	190	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

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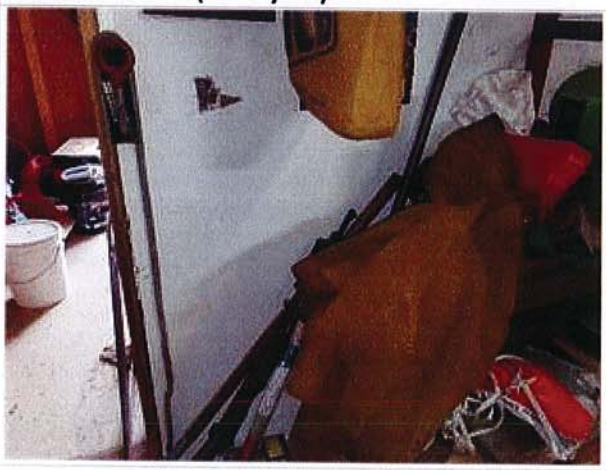
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	13	**Homogenous Material Number**	12
Material Description	Texture on GWB		
Sample Location	Garage 2, at coat storage area, ceiling.		
Quantity	See sample 12 for total quantity.	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	14	**Homogenous Material Number**	13
Material Description	Gypsum Wall Board/Tape/Joint Compound		
Sample Location	Garage 2, east wall.		
Quantity	400	**Unit of Measure**	
Asbestos Type/%	**None Detected (All Layers)**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	15	**Homogenous Material Number**	14
Material Description	Texture on GWB		
Sample Location	Office 1 ceiling.		
Quantity	250	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	16	**Homogenous Material Number**	14
Material Description	Texture on GWB		
Sample Location	Office 1, ceiling.		
Quantity	See sample 15 for total quantity.	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (All Layers)**		
Sample Photo			

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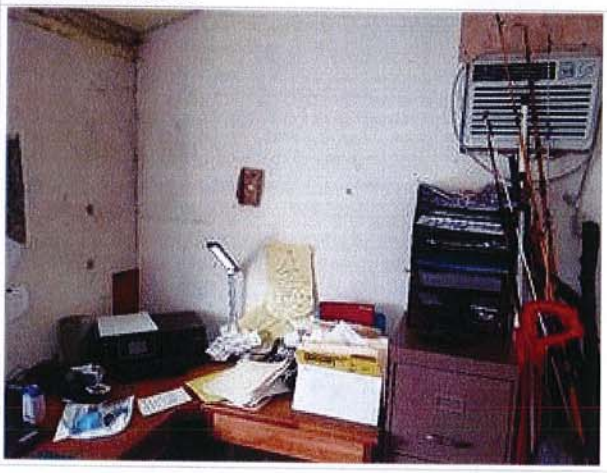
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	17	**Homogenous Material Number**	14
Material Description	Texture on GWB		
Sample Location	Office 1, ceiling.		
Quantity	See sample 15 for total quantity.	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected (Both Layers)**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	18	**Homogenous Material Number**	15
Material Description	Sheetrock (GWB)		
Sample Location	Office 1, south wall.		
Quantity	400	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	19	**Homogenous Material Number**	16
Material Description	Coatings silver on black.		
Sample Location	On roof corrugated tin of office 1 entry.		
Quantity	7000	**Unit of Measure**	Square Feet
Asbestos Type/%	**Layer 1 (Silver coating): None Detected.** **Layer 2 (Black mastic): Chrysotile 10-15%**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Surfacing
Sample Number	20	**Homogenous Material Number**	16
Material Description	Coatings silver on black.		
Sample Location	At front door entry of office 2 roof corrugated tin.		
Quantity	See sample 19 for total quantity.	**Unit of Measure**	Square Feet
Asbestos Type/%	**Layer 1 (Silver coating): None Detected.** **Layer 2 (Black mastic): Chrysotile 3-5%**		
Sample Photo			

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Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	21	**Homogenous Material Number**	17
Material Description	Window Putty		
Sample Location	Office 2, to the right of front entry.		
Quantity	One window at 4' by 5'	**Unit of Measure**	Each
Asbestos Type/%	**Layer 1 (Putty): Tremolite <1%** **Layer 2 (Substrate): None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	22	**Homogenous Material Number**	18
Material Description	Carpet Mastic		
Sample Location	Office 2 floor.		
Quantity	285	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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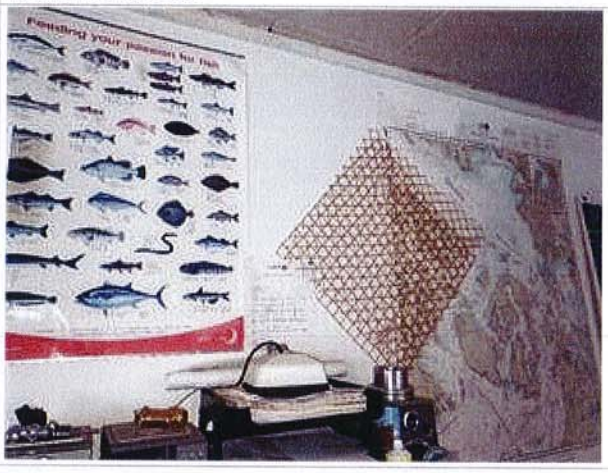
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	23	**Homogenous Material Number**	19
Material Description	Sheetrock (GWB)		
Sample Location	Office 2, south wall.		
Quantity	480	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	24	**Homogenous Material Number**	20
Material Description	Ceiling tile, 31 inch by 16 inch .		
Sample Location	Office 2 ceiling.		
Quantity	285	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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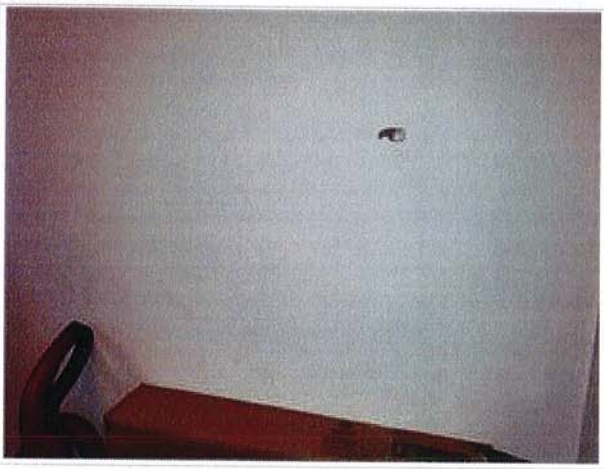
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	25	**Homogenous Material Number**	21
Material Description	Ceiling tile 12" x 12"		
Sample Location	Office 2 ,storage Room ceiling.		
Quantity	160	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	26	**Homogenous Material Number**	22
Material Description	Sheetrock (GWB)		
Sample Location	Office 2 storage area East wall.		
Quantity	300	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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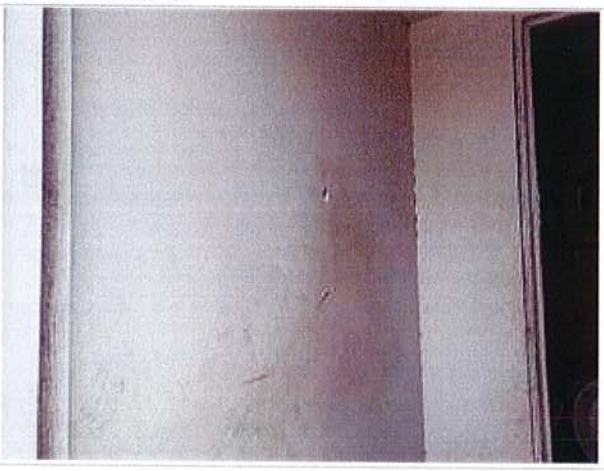
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	27	**Homogenous Material Number**	23
Material Description	Flooring sheet vinyl, 2 inseparable layers.		
Sample Location	Office 2 storage Room floor.		
Quantity	160	**Unit of Measure**	Square Feet
Asbestos Type/%	**Layers 1-4: None Detected.** **Layer 5 (White backing): Chrysotile 35-40%** **Layers 6-7: None Detected.**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	28	**Homogenous Material Number**	24
Material Description	Sheetrock (GWB)		
Sample Location	Garage 1, bathroom, north wall.		
Quantity	120	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

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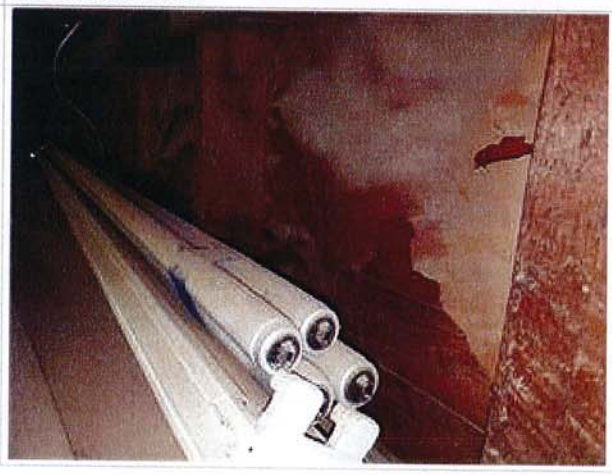
Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	29	**Homogenous Material Number**	25
Material Description	Roofing tar		
Sample Location	At the North West corner of office 2, on cement slab.		
Quantity	16	**Unit of Measure**	Square Feet
Asbestos Type/%	**Chrysotile 1-3%**		
Sample Photo			

Sample			
Project Name	Port of Anacortes Quite Cove Site		
Sample Type	Physical Sample	**AHERA Category**	Miscellaneous
Sample Number	30	**Homogenous Material Number**	26
Material Description	Vapor Barrier brown brittle.		
Sample Location	Around the top of the outside of the ceiling of office 2.		
Quantity	200	**Unit of Measure**	Square Feet
Asbestos Type/%	**None Detected.**		
Sample Photo			

Appendix B: **Bulk Sample Analysis Report**

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name:	**GeoEngineers, Inc.** 600 Stewart St., Ste. 1700 Seattle WA 98101
Customer Project Number:	None Given
Project Name:	Port of Anacortes Quite Cove Site
Project Address:	202 O Avenue Anacortes WA 98221
PO Number:	None Given
Sample Date:	15-APR-2019
Total Samples:	30

PacRim Number:	16596
Report Number:	2019-04-0226
Date Received:	4/17/2019
Analysis Start Date:	4/22/2019
Analysis End Date:	4/24/2019
Turnaround Time:	3-5 Days
Report Date:	4/24/2019
Report By:	WIliam F. Golloway
Analyst(s):	Sandra H. Rice

Samples Analyzed for this report

Beginning Laboratory ID Number: 2019-04-0226

Ending Laboratory ID Number: 2019-04-0255

Sample Set Number
2019-1972

The bulk samples submitted were analyzed for asbestos content using Polarized Light Microscopy (PLM). Analysis was performed in accordance with Appendix E to Subpart E of 40 CFR Part 763 and EPA/600/R93/116.

The test results pertain only to the samples submitted for analysis. Unless otherwise noted, the samples were inhomogeneous; subsamples of components were analyzed to achieve representative analysis. Separate layers of layered samples were analyzed and reported separately. Unless otherwise stated, asbestos content was quantified by calibrated visual estimation (CVES). CVES concentrations are reported in two to three percent ranges for fiber concentrations ranging from one to ten percent, and usually five percent ranges for concentrations greater than ten percent. Samples in which asbestos was not observed are reported as "None Detected".

Limitations and Uncertainty:

Factors such as sample quality, sample size, interfering matrix material, fiber size, and fiber concentration contribute to the uncertainty in asbestos concentration estimates in bulk materials. Relative errors exceeding 100% may occur in samples containing less than ten percent asbestos. Relative errors are typically below thirty percent in samples having greater than ten percent asbestos, and approach zero as asbestos concentrations approach 100%.

Asbestos fibers with diameters less than approximately 0.25 microns are not detectable by PLM. Fibers with larger diameters may not be visible if obscured by interfering matrix materials. These extremely fine fibers may occur in floor tiles, adhesives, products with cement binders, and other non-friable or semi-friable materials. This limitation can be overcome using alternate analytical methods, such as Transmission Electron Microscopy (TEM).

NVLAP Accredited Lab #: 101631-0
Samples Submitted by: PacRim

Report Reviewed by: 4-24-19
Approved Signatory

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name:	GeoEngineers, Inc.	**PacRim Number:**	16596
Customer Project Number:	None Given	**Report Number:**	2019-04-0226
Project Name:	Port of Anacortes Quite Cove Site	**Date Received:**	4/17/2019
Sample Date:	15-APR-2019	**Analysis Start Date:**	4/22/2019
Report Date:	4/24/2019	**Analysis End Date:**	4/24/2019
Report By:	Wlliam F. Golloway	**Analyst(s):**	Sandra H. Rice

Sample Set Number 2019-1972

Field Sample Number: 1 | **Lab ID: 2019-04-0226** | **Field Sample Description:** Sheetrock (GWB) | **Field Sample Location:** Garage 1, area 1, east wall. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	White chalky wall texture with white paint	**None Detected**	Cellulose <1%	Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	**None Detected**	Cellulose 35-40%	Binder, Mineral Aggregate

Field Sample Number: 2 | **Lab ID: 2019-04-0227** | **Field Sample Description:** Coatings On corrugated tin. | **Field Sample Location:** Garage 1, area 2, North wall. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White/silver/grey inseparable textured coatings	**Tremolite <1%**	Talc 1-3% Cellulose <1%	Binder, Mineral Aggregate

Field Sample Number: 3 | **Lab ID: 2019-04-0228** | **Field Sample Description:** Coatings On corrugated tin roof. | **Field Sample Location:** Garage 1 roof. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White/silver/grey inseparable textured coating	**None Detected**	Cellulose <1%	Binder, Mineral Aggregate

Field Sample Number: 4 | **Lab ID: 2019-04-0229** | **Field Sample Description:** Flooring sheet vinyl | **Field Sample Location:** Garage 1, bathroom floor. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Grey/white sheet vinyl flooring	**None Detected**	No Other Fibers Detected	Vinyl, Binder, Mineral Aggregate
Layer: 2	Off-white fibrous backing	**None Detected**	Cellulose 20-25% Fibrous Glass 7-10%	Binder, Mineral Aggregate

Field Sample Number: 5 | **Lab ID: 2019-04-0230** | **Field Sample Description:** Waterproofing felt | **Field Sample Location:** Garage 1, at shed roof. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Dark brown/black fibrous roofing felt	**None Detected**	Cellulose <1% Fibrous Glass 25-30%	Binder, Mineral Aggregate

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name:	**GeoEngineers, Inc.**	**PacRim Number:**	16596
Customer Project Number:	None Given	**Report Number:**	2019-04-0226
Project Name:	Port of Anacortes Quite Cove Site	**Date Received:**	4/17/2019
Sample Date:	15-APR-2019	**Analysis Start Date:**	4/22/2019
Report Date:	4/24/2019	**Analysis End Date:**	4/24/2019
Report By:	Wlliam F. Golloway	**Analyst(s):**	Sandra H. Rice

Sample Set Number 2019-1972

Field Sample Number: 6 | **Lab ID:** 2019-04-0231 | **Field Sample Description:** rolled roofing | **Field Sample Location:** Garage 1, at shed roof. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Dark brown/black fibrous roofing felt and mastic	**None Detected**	Cellulose 25-30%	Binder, Mineral Aggregate

Field Sample Number: 7 | **Lab ID:** 2019-04-0232 | **Field Sample Description:** Putty / caulk | **Field Sample Location:** Garage 1, at shed roof to corrugated wall penetration. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Black fibrous tarry roofing mastic with grey paint	**Chrysotile 7-10%**	No Other Fibers Detected	Binder, Mineral Aggregate

Field Sample Number: 8 | **Lab ID:** 2019-04-0233 | **Field Sample Description:** rolled roofing | **Field Sample Location:** Garage 2 roof. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1 Black fibrous roofing felt and mastic with green/white aggregate	**None Detected**	Cellulose <1% Fibrous Glass 20-25%	Binder, Mineral Aggregate
Layer: 2 Tan sticky adhesive	**None Detected**	Cellulose <1%	Binder, Mineral Aggregate

Field Sample Number: 9 | **Lab ID:** 2019-04-0234 | **Field Sample Description:** Waterproofing felt | **Field Sample Location:** Garage 2 roof. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Dark brown fibrous roofing felt	**None Detected**	Cellulose 45-50%	Binder, Mineral Aggregate

Field Sample Number: 10 | **Lab ID:** 2019-04-0235 | **Field Sample Description:** Window Putty | **Field Sample Location:** Garage 2 west exterior. | **Analyst:** SHR | **Analysis Date:** 4/22/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White fibrous brittle window putty	**Tremolite <1%**	Cellulose <1%	Binder, Mineral Aggregate

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name: GeoEngineers, Inc.
Customer Project Number: None Given
Project Name: Port of Anacortes Quite Cove Site
Sample Date: 15-APR-2019
Report Date: 4/24/2019
Report By: Wlliam F. Golloway
Sample Set Number 2019-1972

PacRim Number: 16596
Report Number: 2019-04-0226
Date Received: 4/17/2019
Analysis Start Date: 4/22/2019
Analysis End Date: 4/24/2019
Analyst(s): Sandra H. Rice

Field Sample Number: 11
Lab ID: 2019-04-0236
Field Sample Description: Putty / caulk
Field Sample Location: Garage 2, at west exterior, at corrugated tin to fiberglass seam, of wall.
Analyst: SHR
Analysis Date: 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
	Grey/clear rubbery caulk with white/silver paint/coating	None Detected	Cellulose 1-3% Fibrous Glass <1%	Binder, Mineral Aggregate

Field Sample Number: 12
Lab ID: 2019-04-0237
Field Sample Description: Texture on GWB
Field Sample Location: Garage 2, coat storage area, ceiling.
Analyst: SHR
Analysis Date: 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Yellow textured ceiling paint/coating	None Detected	Cellulose <1%	Perlite, Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	None Detected	Cellulose 35-40% Fibrous Glass 1-3%	Binder, Mineral Aggregate

Field Sample Number: 13
Lab ID: 2019-04-0238
Field Sample Description: Texture on GWB
Field Sample Location: Garage 2, at coat storage area, ceiling.
Analyst: SHR
Analysis Date: 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Yellow textured ceiling paint	None Detected	Cellulose <1%	Perlite, Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	None Detected	Cellulose 35-40% Fibrous Glass 1-3%	Mica, Binder, Mineral Aggregate

Field Sample Number: 14
Lab ID: 2019-04-0239
Field Sample Description: Gypsum Wall Board/Tape/Joint Compound
Field Sample Location: Garage 2, east wall.
Analyst: SHR
Analysis Date: 4/22/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	White joint compound with white paint	None Detected	Cellulose <1%	Glass fragments, Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	None Detected	Cellulose 25-30%	Binder, Mineral Aggregate
Layer: 3	Light pink fibrous insulation	None Detected	Fibrous Glass 90-95%	Binder

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name: GeoEngineers, Inc.
Customer Project Number: None Given
Project Name: Port of Anacortes Quite Cove Site
Sample Date: 15-APR-2019
Report Date: 4/24/2019
Report By: Wlliam F. Golloway
Sample Set Number 2019-1972

PacRim Number: 16596
Report Number: 2019-04-0226
Date Received: 4/17/2019
Analysis Start Date: 4/22/2019
Analysis End Date: 4/24/2019
Analyst(s): Sandra H. Rice

Field Sample Number: 15
Lab ID: 2019-04-0240
Field Sample Description: Texture on GWB
Field Sample Location: Office 1 ceiling.
Analyst: SHR
Analysis Date: 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Yellow textured ceiling paint	None Detected	Cellulose <1%	Perlite, Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	None Detected	Cellulose 30-35% Fibrous Glass 1-3%	Binder, Mineral Aggregate

Field Sample Number: 16
Lab ID: 2019-04-0241
Field Sample Description: Texture on GWB
Field Sample Location: Office 1, ceiling.
Analyst: SHR
Analysis Date: 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Yellow textured ceiling paint	None Detected	Cellulose <1%	Perlite, Binder, Mineral Aggregate
Layer: 2	White chalky joint compound	None Detected	Cellulose <1%	Binder, Mineral Aggregate
Layer: 3	White chalky drywall with paper backing	None Detected	Cellulose 40-45% Fibrous Glass <1%	Binder, Mineral Aggregate

Field Sample Number: 17
Lab ID: 2019-04-0242
Field Sample Description: Texture on GWB
Field Sample Location: Office 1, ceiling.
Analyst: SHR
Analysis Date: 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Yellow textured ceiling paint	None Detected	No Other Fibers Detected	Perlite, Binder, Mineral Aggregate
Layer: 2	White chalky drywall with paper backing	None Detected	Cellulose 45-50% Fibrous Glass 1-3%	Binder, Mineral Aggregate

Field Sample Number: 18
Lab ID: 2019-04-0243
Field Sample Description: Sheetrock (GWB)
Field Sample Location: Office 1, south wall.
Analyst: SHR
Analysis Date: 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White chalky drywall with paper backing and white paint	None Detected	Cellulose 40-45% Fibrous Glass 1-3%	Mica, Binder, Mineral Aggregate

Customer Name:	**GeoEngineers, Inc.**	**PacRim Number:**	16596
Customer Project Number:	None Given	**Report Number:**	2019-04-0226
Project Name:	Port of Anacortes Quite Cove Site	**Date Received:**	4/17/2019
Sample Date:	15-APR-2019	**Analysis Start Date:**	4/22/2019
Report Date:	4/24/2019	**Analysis End Date:**	4/24/2019
Report By:	Wlliam F. Golloway	**Analyst(s):**	Sandra H. Rice

Sample Set Number 2019-1972

Field Sample Number: 19 | **Lab ID:** 2019-04-0244 | **Field Sample Description:** Coatings silver on black. | **Field Sample Location:** On roof corrugated tin of office 1 entry. | **Analyst:** SHR | **Analysis Date:** 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Silver roof coating	None Detected	Cellulose <1% Fibrous Glass 1-3%	Binder, Mineral Aggregate
Layer: 2	Black fibrous tarry roofing mastic	Chrysotile 10-15%	Cellulose <1% Fibrous Glass 3-5%	Binder, Mineral Aggregate

Field Sample Number: 20 | **Lab ID:** 2019-04-0245 | **Field Sample Description:** Coatings silver on black. | **Field Sample Location:** At front door entry of office 2 roof corrugated tin. | **Analyst:** SHR | **Analysis Date:** 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Silver roof coating	None Detected	Cellulose <1%	Binder, Mineral Aggregate
Layer: 2	Black fibrous tarry roofing mastic with white/tan paint	Chrysotile 3-5%	Cellulose <1%	Binder, Mineral Aggregate

Field Sample Number: 21 | **Lab ID:** 2019-04-0246 | **Field Sample Description:** Window Putty | **Field Sample Location:** Office 2, to the right of front entry. | **Analyst:** SHR | **Analysis Date:** 4/23/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	White malleable window putty with light grey paint	Tremolite <1%	Cellulose <1%	Binder, Mineral Aggregate
Layer: 2	Brown woody substrate	None Detected	No Other Fibers Detected	Wood, Binder

Field Sample Number: 22 | **Lab ID:** 2019-04-0247 | **Field Sample Description:** Carpet Mastic | **Field Sample Location:** Office 2 floor. | **Analyst:** SHR | **Analysis Date:** 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Yellow/tan fibrous carpet mastic	None Detected	Cellulose <1% Synthetics 1-3%	Binder, Mineral Aggregate

Field Sample Number: 23 | **Lab ID:** 2019-04-0248 | **Field Sample Description:** Sheetrock (GWB) | **Field Sample Location:** Office 2, south wall. | **Analyst:** SHR | **Analysis Date:** 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White chalky drywall with paper backing and white paint	None Detected	Cellulose 30-35% Fibrous Glass 3-5%	Binder, Mineral Aggregate

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name: GeoEngineers, Inc.
Customer Project Number: None Given
Project Name: Port of Anacortes Quite Cove Site
Sample Date: 15-APR-2019
Report Date: 4/24/2019
Report By: Wlliam F. Golloway
Sample Set Number 2019-1972

PacRim Number: 16596
Report Number: 2019-04-0226
Date Received: 4/17/2019
Analysis Start Date: 4/22/2019
Analysis End Date: 4/24/2019
Analyst(s): Sandra H. Rice

Field Sample Number: 24
Lab ID: 2019-04-0249
Field Sample Description: Ceiling tile, 31 inch by 16 inch .
Field Sample Location: Office 2 ceiling.
Analyst: SHR
Analysis Date: 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Light brown fibrous ceiling tile with white paint	**None Detected**	Cellulose 80-85%	Binder, Mineral Aggregate

Field Sample Number: 25
Lab ID: 2019-04-0250
Field Sample Description: Ceiling tile 12" x 12"
Field Sample Location: Office 2 , storage Room ceiling.
Analyst: SHR
Analysis Date: 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Light brown fibrous ceiling tile with white paint	**None Detected**	Cellulose 75-80%	Binder, Mineral Aggregate

Field Sample Number: 26
Lab ID: 2019-04-0251
Field Sample Description: Sheetrock (GWB)
Field Sample Location: Office 2 storage area East wall.
Analyst: SHR
Analysis Date: 4/23/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White chalky drywall with paper backing and white paint	**None Detected**	Cellulose 30-35% Fibrous Glass 1-3%	Binder, Mineral Aggregate

Field Sample Number: 27
Lab ID: 2019-04-0252
Field Sample Description: Flooring sheet vinyl, 2 inseparable layers.
Field Sample Location: Office 2 storage Room floor.
Analyst: SHR
Analysis Date: 4/24/2019

	Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Layer: 1	Grey/tan/white sheet vinyl flooring	**None Detected**	No Other Fibers Detected	Vinyl, Binder, Mineral Aggregate
Layer: 2	White fibrous backing	**None Detected**	Cellulose 20-25% Fibrous Glass 3-5%	Binder, Mineral Aggregate
Layer: 3	Yellow sticky mastic	**None Detected**	Cellulose 1-3%	Binder, Mineral Aggregate
Layer: 4	Yellow/brown sheet vinyl flooring	**None Detected**	No Other Fibers Detected	Binder, Vinyl, Mineral Aggregate
Layer: 5	White fibrous backing	**Chrysotile 35-40%**	Cellulose 7-10%	Binder, Mineral Aggregate
Layer: 6	Brown brittle mastic	**None Detected**	Cellulose 1-3%	Binder, Mineral Aggregate
Layer: 7	Brown woody subfloor material	**None Detected**	No Other Fibers Detected	Wood, Binder

Pacific Rim Environmental Inc.
Bulk Sample Analysis Report

NVLAP Testing
NVLAP Lab Code 101631-0

Customer Name: GeoEngineers, Inc.
Customer Project Number: None Given
Project Name: Port of Anacortes Quite Cove Site
Sample Date: 15-APR-2019
Report Date: 4/24/2019
Report By: Wlliam F. Golloway
Sample Set Number 2019-1972

PacRim Number: 16596
Report Number: 2019-04-0226
Date Received: 4/17/2019
Analysis Start Date: 4/22/2019
Analysis End Date: 4/24/2019
Analyst(s): Sandra H. Rice

Field Sample Number: 28
Lab ID: 2019-04-0253
Field Sample Description: Sheetrock (GWB)
Field Sample Location: Garage 1, bathroom, north wall.
Analyst: SHR
Analysis Date: 4/24/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
White chalky drywall with paper backing and white paint	**None Detected**	Cellulose 35-40% Fibrous Glass 1-3%	Binder, Mineral Aggregate

Field Sample Number: 29
Lab ID: 2019-04-0254
Field Sample Description: Roofing tar
Field Sample Location: At the North West corner of office 2, on cement slab.
Analyst: SHR
Analysis Date: 4/24/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Black fibrous tarry roofing mastic	**Chrysotile 1-3%**	Cellulose 3-5%	Binder, Mineral Aggregate

Field Sample Number: 30
Lab ID: 2019-04-0255
Field Sample Description: Vapor Barrier brown brittle.
Field Sample Location: Around the top of the outside of the ceiling of office 2.
Analyst: SHR
Analysis Date: 4/24/2019

Lab Sample Description	Asbestos Type/%	Non-Asbestos Fibers	Non-Fibrous Materials
Brown fibrous vapor barrier	**None Detected**	Cellulose 85-90%	Binder

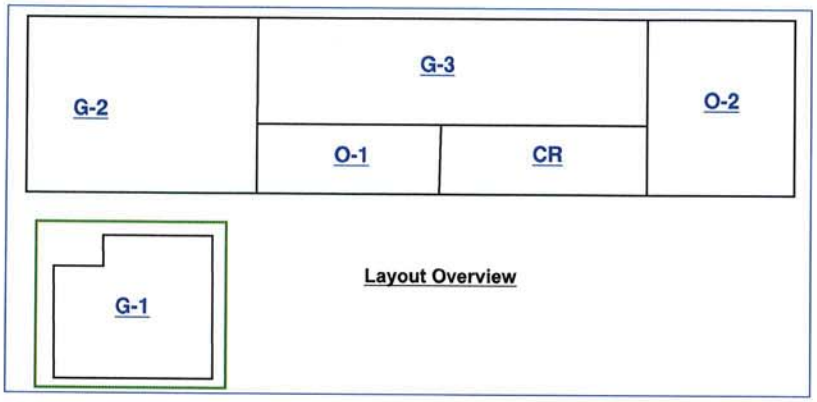
Appendix C: Sample Location Drawing

Site Sketch

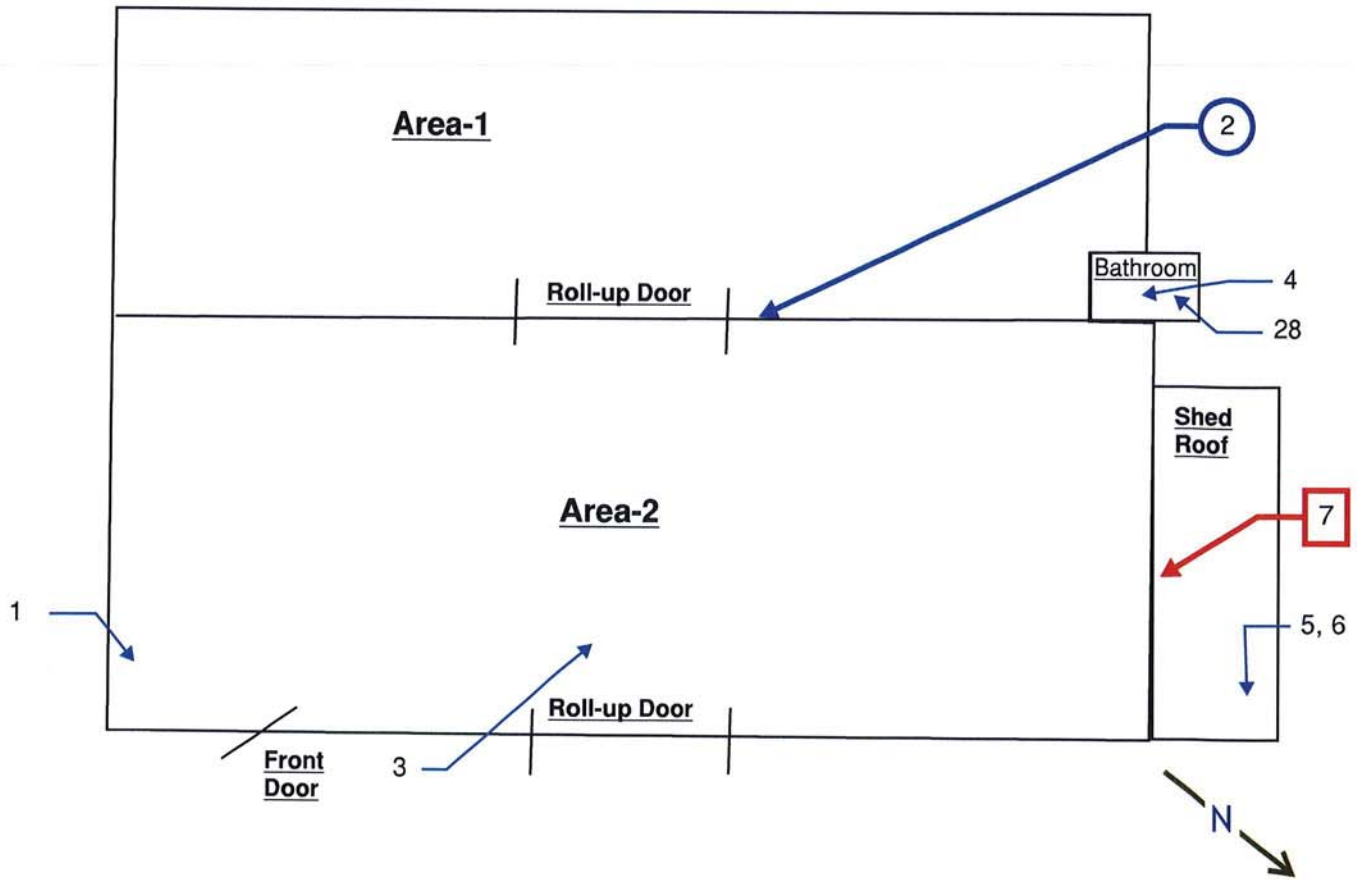
Samples positive for asbestos appear in squares EX: [#]

Visual samples presumed to be asbestos-containing appear in triangles EX: △#

Samples less than one percent asbestos appear in circles EX: (#)



Garage-1



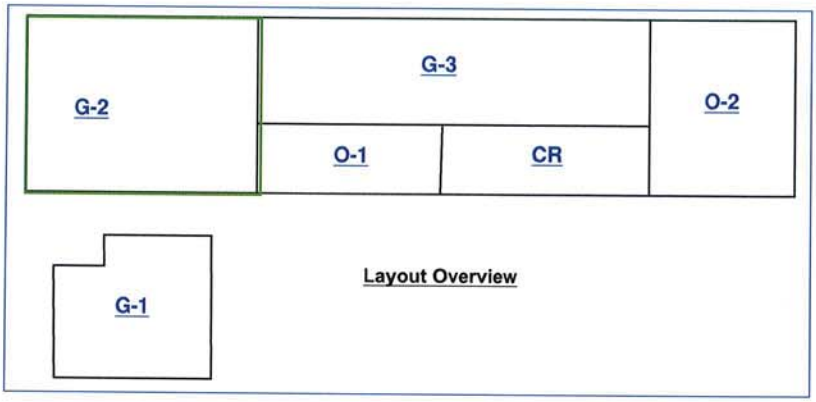
GeoEngineers, Inc. Port of Anacortes Quite Cove 202 O Avenue Anacortes, WA 98122	***Pacific Rim Environmental, Inc.*** 6510 Southcenter Boulevard, #40 Seattle, WA 98188 Tel. (206) 244-8965 pacrimenv.com	Project # : 16596 Drawing # : 01 of 04 Sampling Date: 4/15/19 Drawing by : M. Sandefur Drawing Not To Scale

Site Sketch

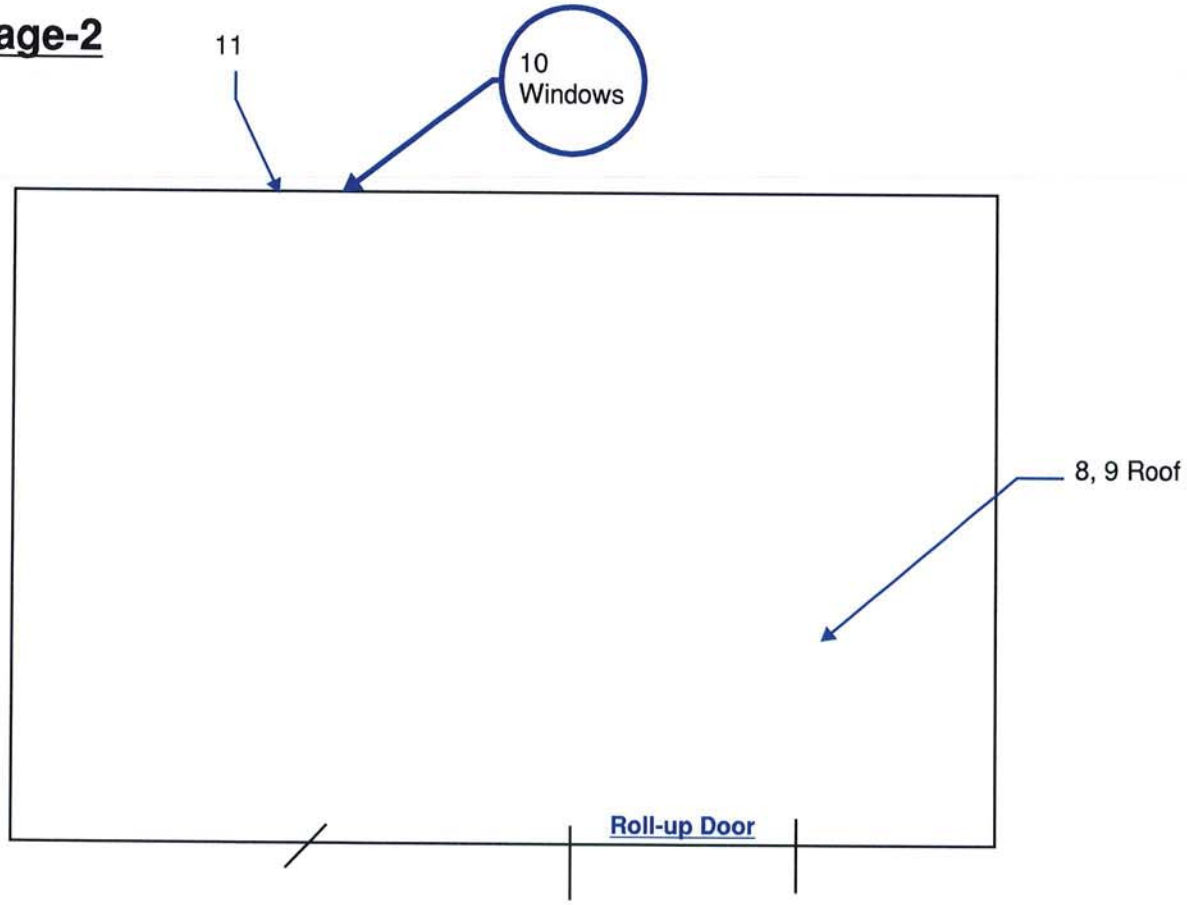
Samples positive for asbestos appear in squares EX: #

Visual samples presumed to be asbestos-containing appear in triangles EX: #

Samples less than one percent asbestos appear in circles EX: #



Garage-2



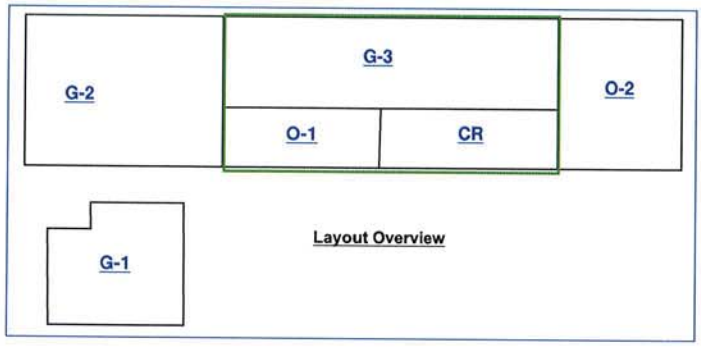
GeoEngineers, Inc. Port of Anacortes Quite Cove 202 O Avenue Anacortes, WA 98122	***Pacific Rim Environmental, Inc.*** 6510 Southcenter Boulevard, #40 Seattle, WA 98188 Tel. (206) 244-8965 pacrimenv.com	Project # : 16596 Drawing # : 02 of 04 Sampling Date: 4/15/19 Drawing by : M. Sandefur Drawing Not To Scale

Site Sketch

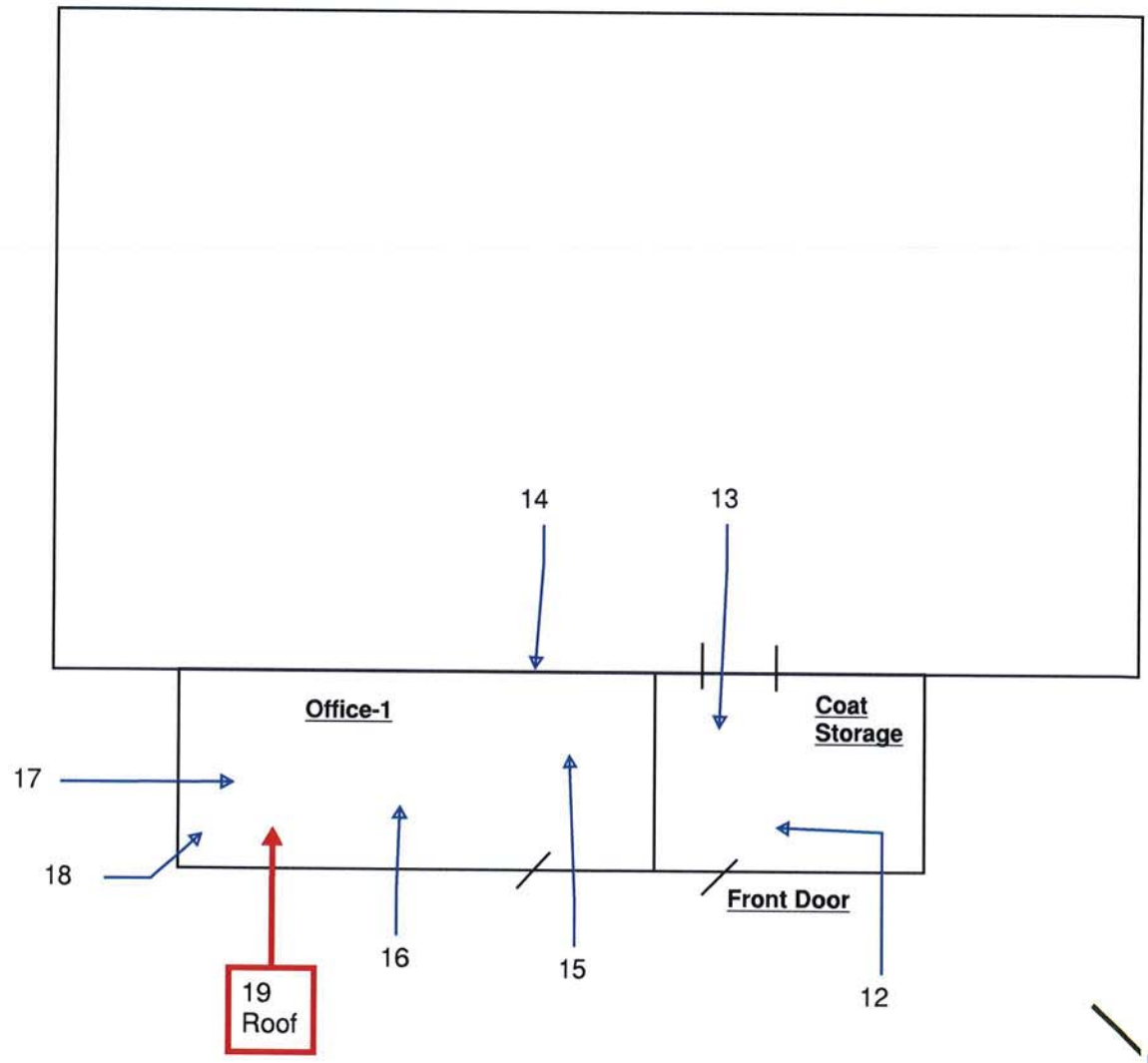
Samples positive for asbestos appear in squares EX: [#]

Visual samples presumed to be asbestos-containing appear in triangles EX: △#

Samples less than one percent asbestos appear in circles EX: (#)



Garage-3



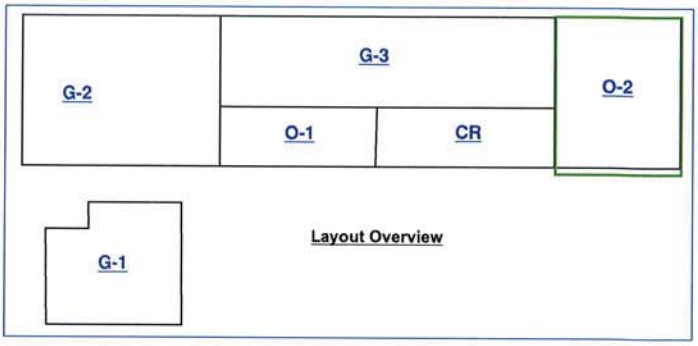
GeoEngineers, Inc. **Port of Anacortes** **Quite Cove** 202 O Avenue Anacortes, WA 98122	***Pacific Rim Environmental, Inc.*** 6510 Southcenter Boulevard, #40 Seattle, WA 98188 Tel. (206) 244-8965 pacrimenv.com	Project # : 16596 Drawing # : 03 of 04 Sampling Date: 4/15/19 Drawing by : M. Sandefur Drawing Not To Scale

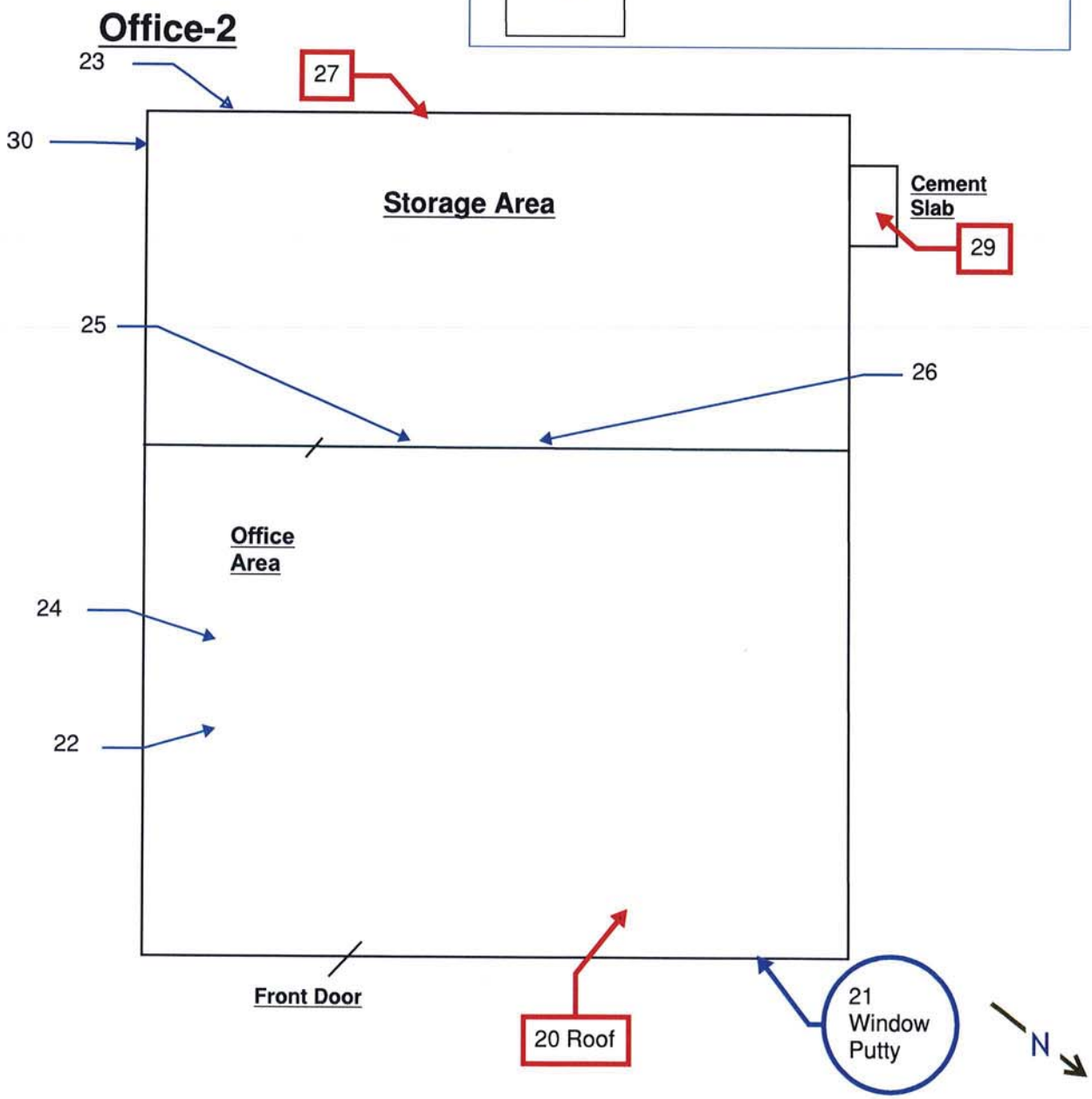
Site Sketch

Samples positive for asbestos appear in squares EX: [#]

Visual samples presumed to be asbestos-containing appear in triangles EX: △#

Samples less than one percent asbestos appear in circles EX: (#)





GeoEngineers, Inc. **Port of Anacortes Quite Cove** 202 O Avenue Anacortes, WA 98122	***Pacific Rim Environmental, Inc.*** 6510 Southcenter Boulevard, #40 Seattle, WA 98188 Tel. (206) 244-8965 pacrimenv.com	Project # : 16596 Drawing # : 04 of 04 Sampling Date: 4/15/19 Drawing by : M. Sandefur Drawing Not To Scale

Appendix D: Lead-Based Paint (XRF) Data Sheets

Pacific Rim Environmental Inc.
6510 Southcenter Blvd. Suite 40
Seattle, WA 98188
(206)244-8965 www.PacRimEnv.com

Lead-Based Paint (XRF) Data Sheet

Client:	**GeoEngineers, Inc.**	XRF Serial #:	**80662**
Project:	**Port of Anacortes Quite Cove Site**	Inspection Date:	**15-Apr-2019**
Project Address:	**Seattle, WA**	Inspection By:	**Matt DeDominces**
Reviewed by:	**Allison Lewis**	Pacrim Job#	**16596**

Sample#	Calibration	Substrate	Component/Side	Description/Location	Color	Result*	Pbc mg/cm²
4	Yes					**Positive**	1.2
5	Yes					**Positive**	1.0
6	Yes					**Positive**	1.0
7		Wood	Vertical siding	Garage 1, south wall.	Gray	**Negative**	.00
8		**Metal**	**Corrugated tin wall.**	**Garage 1, west wall.**	**Gray**	**Positive**	**11.0**
9		**Metal**	**Corrugated tin wall**	**Garage 1 East wall.**	**Gray**	**Positive**	**6.0**
10		Metal	Roll up door	Garage 1, north side.	Gray	**Negative**	.00
11		Wood	Garage door casing	Garage 1, north side.	Gray	**Negative**	.00
12		Wood	Door	Garage 1, front door.	Gray	**Negative**	.00
13		Wood	Window casing	Garage 1, north side.	White	**Negative**	.00
14		Metal	Door	Garage 1, bathroom.	White	**Negative**	.04
15		**Wood**	**Wall**	**Garage 1, bathroom south wall.**	**White**	**Positive**	**1.5**

** HUD standard is 1.0 mg/cm² WISHA standard is any amount of lead is considered lead containing material*

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Sample#	Calibration	Substrate	Component/Side	Description/Location	Color	Result*	Pbc mg/cm²
16		**Wood**	**Old bathroom door casing.**	**Garage 1, bathroom.**	**White**	**Positive**	**15.6**
17		**Wood**	**Wall bead board.**	**Garage 1, east wall.**	**White**	**Positive**	**18.7**
18		**Wood**	**Bead board wall.**	**Garage 1, west wall.**	**White**	**Positive**	**15.8**
19		Concrete	Floor	Garage 1, area 1.	Gray	**Negative**	.08
20		Metal	Corrugated tin wall.	Garage 1, area 2, north wall.	White	**Positive**	5.1
21		Wood	Wall	Garage 1, area 1, north wall.	White	**Negative**	.00
22		Wood	Wall	Garage 2, east wall.	Gray	**Negative**	.00
23		Metal	Door	Garage 2, east side.	Gray	**Negative**	.00
24		Metal	Corrugated tin wall	Garage 2, south wall.	Gray	**Negative**	.12
25		**Wood**	**Roof rake facia.**	**Garage 1. West end.**	**White**	**Positive**	**1.5**
26		**Wood**	**Horizontal facia.**	**Garage 1north side.**	**White**	**Positive**	**6.3**
27		Metal	Corrugated metal roof	Garage 1, roof.	White	**Negative**	.12
28		**Metal**	**Corrugated tin wall**	**Garage 2, north wall.**	**Silver**	**Positive**	**10.1**
29		Metal	Corrugated metal tin wall.	Garage 2, west wall.	Gray	**Negative**	-0.22
30		Wood	Wall	Garage 2, north wall.	Green	**Negative**	.00
31		**Wood**	**Rake facia.**	**Garage 2 north side.**	**White**	**Positive**	**2.5**
32		Wood	Horizontal facia.	At Office 1	White	**Negative**	.07

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Sample#	Calibration	Substrate	Component/Side	Description/Location	Color	Result*	Pbc mg/cm²
33		Metal	Corrugated tin roof	At Office 1	Silver	**Negative**	.18
34		Metal	Gutter	At Office 1	White	**Negative**	.01
35		Wood	Vertical siding	Office 1, at east wall.	Gray	**Negative**	.05
36		Wood	Window trim	At office 1, east side.	White	**Negative**	.00
37		Wood	Roof vent soffit.	At office 1 east side.	White	**Negative**	.00
38		Metal	Corrugated tin wall siding.	North wall of office 2	Gray	**Negative**	.24
39		Wood	Window trim.	Office 1 at North wall window 1	White	**Negative**	.00
40		Drywall	Wall	Office 1West wall.	White	**Negative**	.00
41		Metal	Cabinet face.	Office 1 on West wall.	White	**Negative**	.00
42		Drywall	Ceiling	Office 1 ceiling.	Yellow	**Negative**	.00
43		Metal	Door	Office 1 front door.	Gray	**Negative**	.00
44		Wood	Door casing	Coat storage area entry.	White	**Negative**	.00
45		Wood	Door	Coat storage area front entry.	Gray	**Negative**	.00
46		Drywall	Ceiling	Coat storage area ceiling.	Yellow	**Negative**	.00
47		Drywall	Wall	Garage 3 East wall.	White	**Negative**	.00
48		Wood	Wall	Garage 3, north wall.	White	**Negative**	.01
49		Wood	Floor	Garage 3	Red	**Negative**	.01

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Sample#	Calibration	Substrate	Component/Side	Description/Location	Color	Result*	Pbc mg/cm²
50		Wood	Floor	Coat storage area.	White	**Negative**	.04
51		**Wood**	**Window frame**	**Office 2 at front entry.**	**Gray**	**Positive**	**2.3**
52		Wood	Window sill	Office 2 at front entry.	White	**Negative**	.10
53		Wood	Deck post	Office 2 at Deck	Gray	**Negative**	.00
54		Wood	Deck boards	Office 2 front deck.	Gray	**Negative**	.00
55		Drywall	Wall	Office 2 South wall.	White	**Negative**	.00
56	Yes					**Positive**	1.0
57	Yes					**Positive**	1.1
58	Yes					**Positive**	1.0

** HUD standard is 1.0 mg/cm² WISHA standard is any amount of lead is considered lead containing material*

Appendix E: XRF Performance Characteristic Sheet

Performance Characteristic Sheet

EFFECTIVE DATE: **September 24, 2004** **EDITION NO.: 1**

MANUFACTURER AND MODEL:

Make: *Niton LLC*
Tested Model: *XLp 300*
Source: ^{109}Cd
Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.
XLp 300A, XLp 301A, XLp 302A and XLp 303A.
XLi 700A, XLi 701A, XLi 702A and XLi 703A.
XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm^2 (inclusive)

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 readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is <u>not</u> needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	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 from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

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.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

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. Use the K+L variable time mode readings.

Conduct XRF retesting 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 housing a result is defined as the average of three readings. In multifamily housing, a result is 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 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 results.

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

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:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
	All Data			Median for laboratory-measured lead levels (mg/cm^2)		
Substrate	25^{th} Percentile	Median	75^{th} Percentile	Pb < 0.25	0.25 ≤ Pb<1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* 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. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.*

Appendix F: Universal Waste Rule WAC 173-303-573

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Focus

Universal Waste Rule for Dangerous Waste Lamps WAC 173-303-573

Background

The Universal Waste Rule (UWR) establishes alternative, streamlined waste management standards in place of most of the Dangerous Waste Regulations, Chapter 173-303 WAC, except for, WAC 173-303-050, 173-303-145 and 173-303-960. Universal wastes are certain dangerous wastes that are frequently generated, and that are able to be managed appropriately under less stringent regulatory requirements. The Universal Waste Rule for batteries and mercury-containing thermostats has been in place in Washington State since 1998. For more information on the original UWR, refer to Ecology publication number 98-407 (Revised).

In June 2000, Ecology added lamps that are dangerous waste to the UWR. This rule replaces the "Interim Policy on Waste Management of Spent Fluorescent Light Tubes," dated January 30, 1995.

Universal Waste Categories of Lamps

The types of lamps that may be universal waste include:

- Fluorescent tubes
- High density (HID) lamps (mercury vapor, metal halide, high pressure sodium)
- Compact fluorescent
- Neon lamps[1]
- Any other lamps that are dangerous waste

[1] *"Neon" lamp manufacturers do not always use the inert gas neon, some are manufactured using mercury and phosphor powder.*

June 2000

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Publication # 00-04-020

Why Do We Care About Lamps?

Nationally, about 600 million lamps are disposed of annually, most to solid waste disposal facilities, including landfills and solid waste incinerators. In fluorescent lamps, mercury is the main concern and is present in lamps primarily in vapor form.

- The average mercury content in a fluorescent tube manufactured in 1999 is approximately 12 milligrams.
- Pre-1999 manufactured fluorescent tubes can have from 15 to 50 milligrams.
- High intensity discharge lamps may contain up to 250 milligrams, depending on the lamp wattage.

During solid waste handling and disposal many lamps break releasing mercury vapor and potentially exposing solid waste handlers to inhalation of those vapors. Solid waste incineration of mercury containing lamps also releases the mercury into the atmosphere. Mercury in the atmosphere is eventually deposited back to the earth.

Some lamps may also contain lead in the glass and lead solder used in the lamp base. Lead is a toxic metal that may leach from solid waste landfills into the ground water. Manufacturers are eliminating the lead by using nonleaded glass and solders in newer lamps.

How to Know if a Lamp is Dangerous Waste

Lamps are known to designate as dangerous waste because of their mercury and/or lead content. Lamps may be assumed to be dangerous waste, they may be "book designated" using manufacturers' information, or they may be designated through sampling and testing.

Certain "green" lamps are available that contain less mercury and do not designate as dangerous waste. Ask your lamp manufacturer for data sheets to use when making waste determinations for these lamps. Check with your local health department, solid waste agency, or landfill for recycling or disposal options.

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Should Fluorescent Lamps Still be Used?

YES! Fluorescent tubes use one-quarter of the energy used by incandescent lamps for the same amount of light and last as much as ten times longer than incandescent bulbs. Compact fluorescent lamps last far longer than conventional tubes. The lamps used for lighting streets, playfields, and parking lots should also be selected for energy conservation. Energy conservation reduces mercury emissions from fossil fuel burning power plants. Using less electricity – which we can do by using energy-saving lighting – is the best protection for health and the environment.

Who is Affected by the UWR for Lamps?

- Regulated generators of dangerous waste (Medium Quantity and Large Quantity Generators)
- Businesses that generate or accumulate dangerous waste lamps in regulatedquantities (this category may include commercial building/property owners that maintain the lighting for tenants)
- Businesses that provide collection and management services (e.g., lighting contractors)

Regulated generators of dangerous waste generate over 220 pounds of total dangerous waste per month or batch (or 2.2 pounds of extremely hazardous waste), or accumulate greater than 2,200 pound of dangerous waste (or 2.2 pounds of extremely hazardous waste) at any time. As a point of reference: four (4), four-foot long, linear fluorescent tubes equal approximately 2.2 pounds. It would take about 400 of those tubes to equal 220 pounds and approximately 4,000 of those tubes to equal 2,200 pounds.

***NOTE:** Small Quantity Generators (SQGs) are exempt from the UWR (they are subject to WAC 173-303-070(8)) and can manage dangerous waste lamps as SQG dangerous waste. Households are also exempt from the rule. Local governments and/or landfills, however, may restrict disposal by SQGs and households. (If a SQG generates dangerous waste lamps in quantities that would put them into a higher generator category, they should choose to manage those lamps as universal waste to retain their SQG status.*

Under the UWR, there are small quantity handlers, large quantity handlers, transporters and destination facilities.

- Handlers are the generators of the universal waste or businesses that receive and collect universal waste before shipping to another handler or to a destination facility.
- Transporters transport the lamps between handlers, or to a destination facility.
- Destination facilities recycle the lamps, or provide treatment, storage and disposal to a dangerous waste landfill.

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***NOTE:** Businesses that generate and manage dangerous wastes and universal wastes are considered both a dangerous waste generator, and a universal waste handler.*

Significant Benefits

Benefits for managing dangerous waste lamps as universal waste include:

- Waste is not counted toward waste generation totals to determine generator status.
- Waste is not reported on the Dangerous Waste Annual Report.
- Waste does not need to be manifested when sent off-site.
- Accumulation time limit for universal waste is increased to one year.

What is the Difference Between the 1998 UWR and the UWR with Lamps?

There is one significant difference regarding when a lamp handler becomes a large quantity handler, subject to more requirements:

Handler Type	Pre-2000 Rule	New Rule with Lamps
Small Quantity Handler	Accumulate less than 11,000 pounds of Universal Waste	Accumulate less than 2,200 pounds of lamps, or less than 11,000 pounds of total universal waste, including lamps.
Large Quantity Handler	Accumulate 11,000 or more pounds of Universal Waste	Accumulate 2,200 or more pounds of dangerous waste lamps or 11,000 pounds of total universal waste (including lamps)

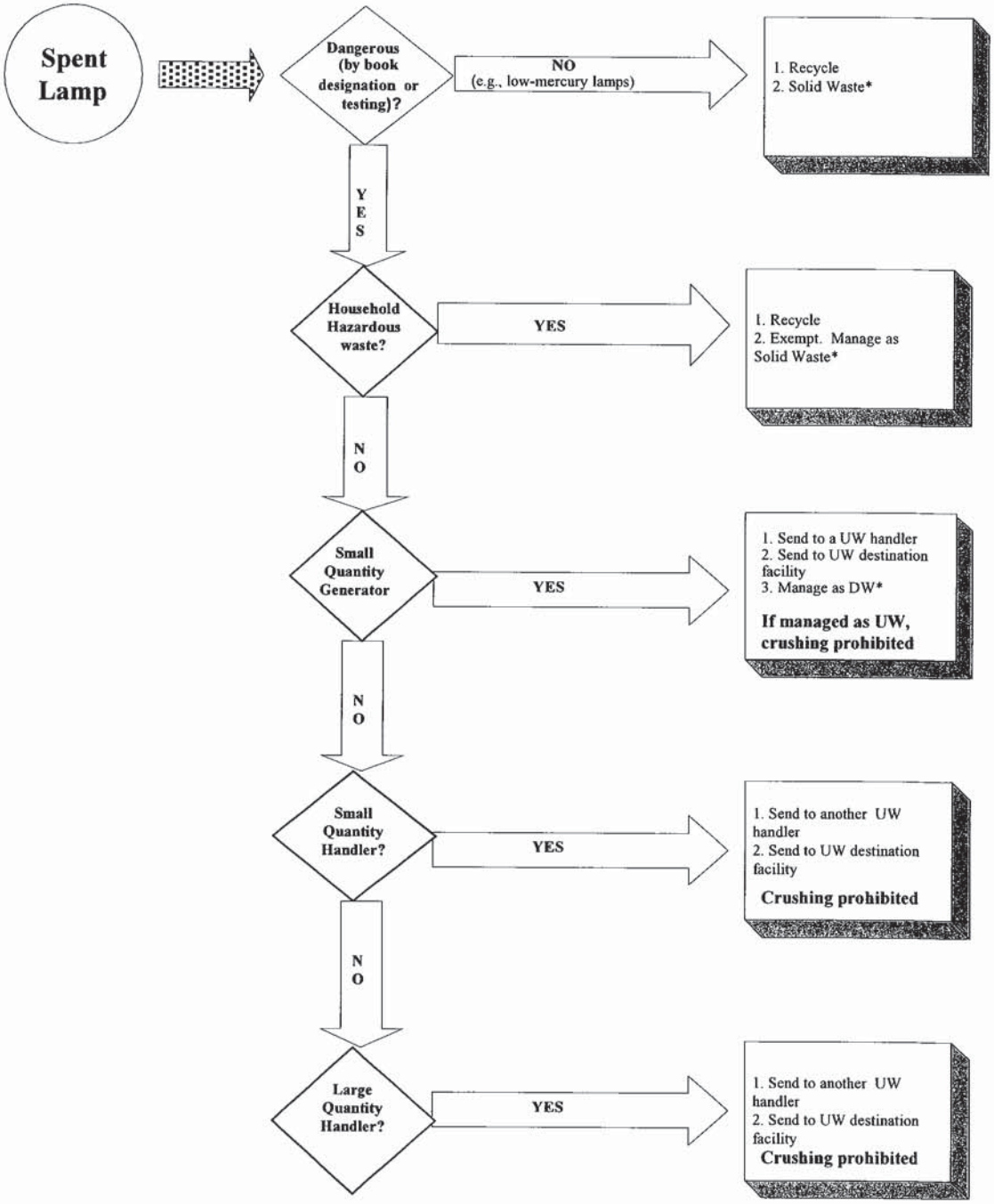
Is On-Site Lamp Crushing to Reduce Volume Allowed?

Universal waste lamp handlers and transporters cannot dispose of or treat universal waste lamps. **This prohibition on treatment includes lamp crushing**. Lamp crushing is considered a treatment-by-generator activity, subject to full regulation under the *Dangerous Waste Regulations.* Crushed lamps must be managed as dangerous waste unless they are shown to be non-dangerous through the designation process.

Publication # 00-04-020

Attachment 1

GENERATOR MANAGEMENT OPTIONS FOR WASTE LAMPS



*Check with local health department, solid waste agency or solid waste landfill operator

Attachment 2

UNIVERSAL WASTE LAMP MANAGEMENT REQUIREMENTS

NOTE: Small Quantity Generators (SQGs) are exempt from the UWR (they are subject only to WAC 173-303-070(8)) and can manage dangerous waste lamps as SQG dangerous waste. Households are also exempt from the rule. Local governments and/or landfills however may restrict disposal by SQGs and households. (If a SQG generates dangerous waste lamps in quantities that would put them into a higher generator category, they should choose to manage those lamps as universal waste to retain their SQG status.)

REQUIREMENTS	SMALL QUANTITY HANDLER	LARGE QUANTITY HANDLER	UW TRANSPORTER	UW DESTINATION FACILITY
Notification and EPA I.D.#	Not required	YES	Not required	YES
Immediately contain by placing in a container any lamps showing evidence of leakage, damage, etc.	YES	YES	YES	Regulated as a TSD or 24 hour recycler (WAC 173-303-140; 173-303-141; 173-303-280 through 173-303-525; 173-303-600 through 173-303-695; 173-303-800 through 173-303-840. OR, If a 24 hour recycler, WAC 173-303-120 (4)(c)
Containerize in closed, structurally sound, compatible containers	YES	YES	YES	
Cardboard/fiber containers may be used (inside storage only)	YES	YES		
Container label required: "Waste Lamps", or "Universal Waste Lamps"	YES	YES		
Track length of time since waste lamp generation. Acceptable methods of proof: date on label, inventory system, etc.	YES	YES		
Response to Releases - Contain releases; determine if DW; if so, manage as specified in Chapter 173-303, WAC	YES	YES	YES	
Prohibited from disposing of Universal Waste	YES	YES	YES	
Treatment (includes crushing) prohibited	YES	YES	YES	
Accumulation Time Limit	One year (longer if proved necessary for proper management)	One year (longer if proved necessary for proper management)	10 days or less at UW transfer facility, otherwise becomes UW handler	
Employee Training	<u>Inform</u> appropriate employees of proper handling and emergency procedures	<u>Ensure</u> appropriate employees are thoroughly familiar with proper handling and emergency procedures	Not required under rule, but recommended	
Tracking of Waste Shipments	Recommended, but not required	Keep records (invoice, manifest, etc.) for 3 years of all shipments received and all shipments sent off-site	If UW is hazardous material under 49CFR171.8, describe in shipping papers per 49CFR Part 172	Keep records (invoice, manifest, etc.)for 3 years of all shipments received
Exporting	EPA Acknowledgment of Consent form from receiving country	EPA Acknowledgment of Consent form from receiving country	EPA Acknowledgment of Consent form must accompany shipment	EPA Acknowledgment of Consent form must accompany shipment
If UW is hazardous material under 49CFR171.8, follow applicable Dept. of Transportation regulations in 49CFR Part 171-180	If self-transporting, defined as a Universal Waste Transporter	If self-transporting, defined as a Universal Waste Transporter	**YES**	If self-transporting, defined as a Universal Waste Transporter

Attachment 3
FREQUENTLY ASKED QUESTIONS ABOUT UNIVERSAL WASTE LAMPS

Q What types of lamps are included in the UW rule?

A The rule includes, but is not limited to, fluorescent tubes, compact fluorescent, mercury vapor, metal halide, high-pressure sodium and neon lamps. The rule targets those lamps that are frequently used by businesses, institutions, government and utilities, and that are known to have hazardous properties that may cause them to be a dangerous waste, such as mercury and lead. Other types of lamps, such as incandescent, may also have hazardous properties, such as lead in the lamp base, that can cause them to be dangerous waste and as such could be managed as universal waste.

Q What is the difference between a generator and a handler under the UW rule?

A Under the universal waste rule a generator of universal waste is also considered a handler. A handler can be the generator of the lamp, or a business that receives, collects and then sends lamps on to another handler, or to a destination facility.

Q What does the UW rule mean for regulated generators of dangerous waste (medium quantity and large quantity generators)?

A Regulated generators of dangerous waste that also generate dangerous waste lamps should begin managing those lamps as universal waste. The benefits of managing the lamps as universal waste include no counting, no manifesting, no reporting on annual reports, and a longer accumulation time. The January 1995 policy on fluorescent tubes is being replaced by the universal waste rule, so regulated generators no longer have the option of sending their dangerous waste fluorescent tubes to a Municipal Solid Waste landfill.

Q A business doesn't generate any other dangerous waste, but they do have a lot of fluorescent lamps that get changed out – how does the UW rule affect them?

A The affect of the rule on the business depends on a few things. The first is whether or not the lamps are dangerous waste. If the lamps are dangerous waste, then the number of lamps generated and the local regulations for business lamp disposal will affect that business. For such a business, the quantity of dangerous waste lamps generated is going to determine their regulatory status. If the business generates more than 220 pounds of lamps at one time or during one month or accumulates more than 2,200 pounds of lamps at any time, then they would become a regulated dangerous waste generator unless they manage the lamps under the universal waste rule. If the business generates less than 220 pounds of dangerous waste lamps, then they would be considered a small quantity generator (SQG) and subject to the less stringent small quantity generator regulations found at WAC 173-303-070(8). They could choose to manage the lamps as universal waste, or choose to manage the lamps as SQG dangerous waste. The business should check with their local health department, solid waste agency or landfill operator for requirements.

Q A business is currently a small quantity generator (SQG) of dangerous waste, how does the UW rule affect them?

A A business that generates dangerous waste at the small quantity generator level may be affected by the rule. If, in addition to other dangerous wastes they generate, they generate or accumulate dangerous waste lamps in quantities that may push them over the SQG quantity exclusion limits, then they should manage those lamps as universal waste to retain their SQG status. If a business generates dangerous wastes, including dangerous waste lamps, under the SQG

quantity exclusion limits, then they may manage the lamps as SQG dangerous waste. The business should check with their local health department, solid waste agency or landfill operator for requirements.

Q Are manufacturers making lamps that are non-dangerous waste?

A The major lamp manufacturers are producing lamps that pass both the federal Toxicity Characteristic Leaching Procedure (TCLP) test and Ecology's static acute fish toxicity test for state criteria. Check with the lamp manufacturer, your local lamp distributor, or lighting contractor for more information on specific lamp models.

Q Can those non-dangerous waste lamps be managed as solid waste or do they need to be managed as universal waste?

A The universal waste rule only requires that dangerous waste lamps be managed as universal waste. Lamp models that have been shown to be non-dangerous waste would be eligible for disposal to a Municipal Solid Waste landfill, subject to local regulations and landfill operator approval. Of course, the non-dangerous waste lamps still have recyclable components, including glass and the aluminum end caps and metal bases. Additionally, these types of "green" lamps still contain mercury, and pass the TCLP not simply because of the lower mercury content, but because there are other unique lamp components or additives that aid in binding up the mercury so that it doesn't leach during the TCLP test. The manufacturers have all stated that removal of the unique components or additives will generally cause these lamps to fail the TCLP. As always, Ecology recommends recycling over disposal.

Q Will on-site lamp crushing to reduce volume space be allowed under the UW rule?

A No, Ecology did not include an on-site lamp crushing management option in the final universal waste rule. During the rule development, it was determined that the as-proposed performance-based lamp crushing standards were not enough to ensure that uncontrolled releases of mercury and other hazardous constituents would not occur from the use of lamp crushing units currently on the market. Because of this, Ecology could not ensure that handlers would be crushing lamps properly and in a way that did not release mercury or other hazardous constituents into the environment. To address this issue, Ecology would need to add layers of complexity to the universal waste rule in explaining such requirements as engineering controls and maintenance schedules. Adding more complex language and requirements would conflict with the purpose of the universal waste management system.

Q What happens if a universal waste lamp handler mismanages universal wastes?

A The universal waste rule is a subset of the full dangerous waste regulations, and a handler that mismanages universal waste is subject to enforcement. A handler that receives universal waste from others and mismanages the waste would be held liable for the actual regulatory violation, but the other handlers would also be responsible for that mismanagement under our state cleanup law, the Model Toxics Control Act. Since universal wastes are still dangerous wastes, persons remain liable under dangerous waste and cleanup regulations for remediation of any releases from universal waste management.

Q Can a handler of universal waste lamps self-transport universal wastes to another handler or destination facility?

A Yes, that handler may self-transport, but in doing so, must meet the UW transporter requirements.

Q Is a Hazardous Waste Manifest needed if a UW lamp handler chooses to send their UW lamps to a destination facility located in a state that hasn't adopted the universal waste rule for lamps?

A If those lamps are considered hazardous waste in the state the destination facility is located, then a Hazardous Waste Manifest would be required by the receiving state. Additionally, interstate transport of UW lamps may take the lamps through states that have not adopted the universal waste rule for lamps. Those states that have not adopted the universal waste rule for lamps may require a Hazardous Waste Manifest for the portion of the trip those lamps are in their state. Check with the destination facility and/or the states the lamps will travel through to be sure of the requirements.

Q Can I be a generator and a handler?

A Yes, a business that generates dangerous waste, (for example, a flammable solvent) and that generates and manages their universal waste would be considered both a dangerous waste generator and a universal waste handler. A handler of universal waste could also become a generator of dangerous waste. For example, a universal waste handler of lamps may have some lamps break, releasing mercury. The residue from the spill would most likely designate as a dangerous waste and would need managed as such. Residues from such spills could not continue to be managed as universal waste.

Attachment 4

SERVICES DIRECTORY FOR LAMPS AND BALLASTS

The Department of Ecology does not assume any liability for the accuracy or completeness of this information. A listing of a firm in this directory does not constitute a recommendation.

Able Clean-Up Technologies	Spokane	WA	(509) 466-5255	ksilverh2o@email.msn.com	Transportation of lamps and ballasts
Advanced Environmental Solutions	Seattle	WA	(206) 652-2323	justin@advenvironmental.com	Equipment & containers
Big Sky Industrial	Spokane	WA	(509) 624-4949	bigsky@iea.com	Arrange for ballast disposal
Creative Environmental Technologies	Tacoma	WA	(888) 627-3347, (253) 627-3347	ceti@cetinw.com	Arrange for lamp and ballast transportation
Earth Protection Services	Lake Oswego	OR	(503) 620-2466 (800) 588-7190	earthpro@cyberhighway.net	Lamp recycling and ballast management
Eastern Environmental Technologies	Port Chester	NY	(800) 808-PCBS	eet@erols.com	Lamp recycling and ballast management
Eco Lights NW	Seattle	WA	(206) 343-1247	amyf@totalreclaim.com	Full service lamp recycler and ballast management
Envirotech Systems	Seattle	WA	(800) 922-9395	envsys1@aol.com	Arrange for lamp recycling and ballast disposal
Evergreen Environmental	Aberdeen	WA	(360) 533-6141	LarryM@olynet.com	Arrange for ballast disposal
FBN Enterprises	Kirkland	WA	(425) 820-8115		Arrange for lamp and ballast reycling or disposal
Foss Environmental Services	Seattle	WA	(206) 768-1426	seattleinfo@foss.com	Transportation of lamps and ballasts
Lighting Resources	Phoenix	AZ	(800) 572-9253	ben@voidnet.com	Lamp recycling and ballast management
MCS Environmental	Spokane	WA	(509) 924-9236	mcsspok@ez.eznet	Arrange for lamp and ballast recycling or disposal
Mercury Technologies of Minnesota	Pine City	MN	(800) 864-3821	merctech@ecenet.com	Lamp recycling and ballast management
Midwest Recycling & Recovery Services	Dubuque	IA	(800) 311-9636		Arrange for lamp and ballast recycling or disposal
NSSI Recovery Services	Houston	TX	(713) 641-0391	rdgallagher@nssihouston.com	Limited lamp and ballast disposal services
Nu-Life Industries	Aldergrove	BC	(604) 857-5588	info@nulife-ind.com	Lamp recycling and non-PCB ballast management
Onyx Environmental Services, LLC	Tukwila	WA	(206) 241-3900 or (800) 334-2387	jim_beck@wastemanagement.com	Transportation of lamps and ballasts

Philip Services	Renton	WA	(425) 227-0311 or (800) 228-7872	londamay@philip-serv.com	Transportation of lamps and ballasts
Philip Services	Washougal	WA	(800) 547-2436	londamay@philip-serv.com	Transportation of lamps and ballasts
Phoenix Environmental	Fife	WA	(253) 779-8474		Limited t\ansportation of lamps and ballasts
Prezant Associates	Seattle	WA	(206) 368-4252 or (206) 281-8858	prezant@prezant.com	Industrial hygiene, safety and health consulting
Recyclights West LLC	Glendora Las Vegas	CA NV	(626) 335-3042 (702) 633-7900	recwest@aol.com	Lamp recycling at Las Vegas facility – no ballast management
Romic Environmental	Tacoma	WA	(253) 229-6569	gregc@romic.com	Transportation of lamps and ballasts to CA facility
RTW	University Place	WA	(253) 566-5819	mthinc@foxinternet.net	Arrange for lamp and ballast recycling or disposal
Safety Kleen, Auburn	Auburn	WA	(206) 939-2022		Transportation of lamps and ballasts
Safety Kleen, Lynnwood	Lynnwood	WA	(425) 775-7030		Transportation of lamps and ballasts
Safety Kleen, Pasco	Pasco	WA	(509) 547-8771	mikekendall@safetykleen.com	Transportation of lamps and ballasts
Safety Kleen, Spokane	Spokane	WA	(509) 928-8353	DavidBlackham@safetykleen.com	Transportation of lamps and ballasts
Superior Special Services (formerly Salesco Systems)	Phoenix	AZ	(800) 368-9095	mdezelon@ssusa.com	Lamp recycling and ballast management
Van Waters & Rogers, Kent	Kent	WA	(800) 909-4897	kraen.troutman@dwr-inc.com	Arrange for lamp recycling and ballast management
Van Waters & Rogers, Spokane	Spokane	WA	(800) 909-4897	ietxp@vwr-inc.com	Arrange for lamp recycling and ballast management
WasteXpress	Portland	OR	(503) 224-3206	wastex@easystreet.com	Transportation of lamps and ballasts

Appendix G: **Less Than One Percent Asbestos Impact Guidelines**

PACIFIC RIM ENVIRONMENTAL, INC.
SEATTLE www.pacrimenv.com ANCHORAGE

Summary of regulatory requirements for materials containing less than 1% asbestos:

Environmental Protection Agency

If less than 1% the EPA does not regulate it as an asbestos-containing material.

Washington State Department of Labor and Industries

Air Monitoring

Exposure monitoring (NEA) – yes
Pre-abatement monitoring - unclear
Post abatement monitoring - unclear

Work Practices and Work Area Control

Regulated area required – yes
Change area required - yes
Warning signs required - yes
Universal controls required - yes

- Wet Methods
- HEPA vacuums
- Prompt Disposal

Leak tight containers required - yes

Personal Protective Equipment

Respirator protection – yes, 1/2 mask APR with HEPA required until air monitoring results determine exposure below PELs
Medical surveillance required – yes, because of negative pressure APR use
Other personal protective equipment – yes, required until air monitoring results determine exposure below PELs

Communication of Hazard

Warning labels on in-place materials required – no
Warning labels on disposal containers – no
Training – 2-hour awareness, hazard communication (specific to situation)
Competent Person required - yes

- Training – unclear how much training is required
- Must have knowledge and authority

Things that are not required:

Labeled bags
Worker or supervisor certification
No pre-demolition removal requirement
No notification to L&I or PSCAA

Corporate Office
6510 Southcenter Blvd., Ste. #4
Seattle, WA 98188
Phone: (206) 244-8965
Fax: (206) 244-9096

Anchorage Office
Phone (907) 569-8081
www.pacrimenv.com

Appendix H: Inspector / Laboratory Certifications

Certificate of Completion

This is to certify that

Matt R. DeDominces

has satisfactorily completed
4 hours of refresher training as an

AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

169816
Certificate Number

ARGUS PACIFIC
TRAINING • CONSULTING
A Terracon COMPANY

Oct 17, 2018 Expires in 1 year.
Date(s) of Training

Exam Score: N/A
If appropriate:

Instructor

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101631-0

Pacific Rim Environmental, Inc.

Tukwila, WA

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).

2019-04-01 through 2020-03-31

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 101631-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program