

Asbestos Inspection Report

**Brawley Courthouse
220 Main Street
Brawley, CA. 92227**

Prepared for:

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1002 State Street
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Submitted by:

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NEI Project 019-0163

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1.0 ACRONYMS AND ABBREVIATIONS

AC	Air Conditioning
ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act of 1986
ASTM	American Society for Testing and Materials
EPA	Environmental Protection Agency
HVAC	Heating Ventilating and Air Conditioning
NEI	Nicklaus Engineering, Inc.
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NIST	National Institute of Standards and Technology
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PLM	Polarized Light Microscopy
RACM	Regulated Asbestos Containing Material
SF	Square Feet

2.0 EXECUTIVE SUMMARY

Nicklaus Engineering Inc. has performed this asbestos inspection of the roof at the Brawley Courthouse, located at 220 Main Street, Brawley, California 92227. This inspection included:

- Site Inspection
- Sample Preparation
- Sample Collection
- Laboratory Analysis
- Analytical Review
- Final Report Preparation

Based upon the information obtained during the asbestos inspection, considering the limitations contained within Section 3.0, this asbestos inspection has revealed Asbestos Containing Material (ACM). The positive ACM is summarized below with details provided in Table 2:

- Roof Ply / Bitumen (samples 6, 7)
- Caulk (sample 9)

3.0 PROJECT LIMITATIONS

The asbestos inspection was conducted in accordance with ASTM Standard E 2356-14, *the Standard Practice for Comprehensive Building Asbestos Surveys*. The intent of this standard is to provide procedures for conducting comprehensive surveys of buildings and facilities for the purpose of locating, identifying, quantifying, and assessing asbestos containing materials.

For this project, the following materials and/or areas **were included** in this survey:

- See Table 1

4.0 INSPECTION PROCEDURES

4.1 Sample Inventory

All homogeneous areas of suspect materials were listed during the initial building inspection. Bulk samples were collected for analysis. The samples are itemized in Table 1 below.

Table 1
Summary of Samples Collected

Sample ID	Description	Location	Date Sampled
1-4	Lower Roof	Roof on Level 1	10/8/19
5-7	Upper Roof	Roof on Level 2	10/8/19
8	Patch Work	Level 2 Area	10/8/19
9	Caulking	Level 2 Area	10/8/19

4.2 Sample Analysis

Samples were sent to Fiberquant Analytical Services for analysis by Polarized Light Microscopy (PLM) by EPA Method 600/R-93/116. Sample layers which are friable and estimated by the analyst to contain <1% asbestos were point counted by the laboratory. Such point counting is required by NESHAP in order to rely on analytical results that are <1%.

Fiberquant Analytical Services is a certified laboratory recognized by the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the United States Department of Commerce National Institute of Standards and Technology.

5.0 ANALYTICAL RESULTS

The sample results have been included as Attachment 1 for reference. The positive asbestos containing materials from this asbestos inspection are itemized below in Table 2. Removal of the materials listed in Table 2, and any materials that were not sufficiently proven to be non-ACM, shall be treated as ACM.

Table 2
Summary of Positive ACM

Sample ID	Positive Layer Description	Location (Rooms)	NESHAP Category
6	Roof Ply/Bitumen	Upper Roof	II
7	Roof Ply/Bitumen	Upper Roof	II
9	Black Caulk	Upper Roof	II

The materials listed in Table 2 are asbestos containing and must be handled by trained workers using appropriate work methods in accordance with OSHA requirements. In addition, the asbestos must be disposed of at an appropriate facility in accordance with NESHAP regulations.

All suspect building materials must be analyzed to prove non-ACM. **If any materials not listed in Table 1 are encountered, during demolition or renovation activities, work shall immediately cease and NEI shall be contacted to evaluate the material.**

6.0 QUALITATIVE ASSESSMENT OF ACM

A qualitative assessment of the asbestos containing materials is necessary to make decisions regarding the treatment of asbestos containing materials. A qualitative assessment consists of an evaluation of the current condition as well as the potential for disturbance.

6.1 Current Condition Assessment

The current condition of each material will be qualitatively ranked into one of the following categories:

Good *Surfacing material has no damage or small amounts of damage; covering on thermal system insulation is intact or has small amounts of damage; miscellaneous materials intact; no visible debris or small amounts of debris.*

Fair *Surfacing material has moderate but not extensive amounts of visible damage; covering on thermal system insulation is cut or torn, exposing moderate but not extensive amounts of insulation; moderate but not extensive damage to miscellaneous materials such as floor tile; moderate but not extensive amounts of visible debris.*

Poor *Extensive damage to surfacing materials; covering on thermal system insulation is cut or torn extensively and insulation itself is damaged; miscellaneous materials such as floor tile extensively damaged and underlying mastic exposed; extensive amounts of dust and debris.*

6.2 Potential for Disturbance Assessment

The potential for disturbance for each material will be qualitatively ranked into Low, Medium, or High, based upon the following disturbances:

Physical Disturbances

Accessibility during normal operations

Activities that people do and how often they do them

Environmental Disturbances

Vibration from operating machinery, HVAC equipment and so forth

Water damage from leaking roof, pipe or other source

Air currents strong enough to dislodge loose ACM

Airborne dust that can erode material

Corrosive atmosphere or liquids that can erode the covering or matrix

6.3 Qualitative Assessment for this Inspection

A qualitative assessment has been conducted for each asbestos-containing material identified in Section 5. The qualitative assessment has been summarized below in Table 3.

Table 3
Qualitative Assessment Summary

Sample ID	Description	Location	Current Condition	Potential for Disturbance
6	Roof Ply/Bitumen	Upper Roof	Good	Low
7	Roof Ply/Bitumen	Upper Roof	Good	Low
9	Black Caulk	Upper Roof	Good	Low

7.0 QUALIFICATIONS

7.1 Inspector Qualifications

The inspectors involved in this asbestos inspection are certified as AHERA Asbestos Inspectors. Copies of the current asbestos certifications have been included as Attachment 2.

7.2 Laboratory Qualifications

The analytical laboratory is certified by the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology (NIST) for the asbestos analyses conducted by the laboratory.

8.0 LIST OF ATTACHMENTS

Attachment 1	Analytical Results
Attachment 2	Inspector Certifications

Attachment 1
Analytical Results



Polarized Light Microscope (PLM) Analysis for Asbestos in Bulk Sample

JobNumber: 201909869

Client:

NEI ENVIRONMENTAL

PO BOX 6029

YUMA, AZ

85366-6029

Office Phone:

(928) 344-8374

FAX:

(928) 726-6994

Samples: 9 PLM **Rec:** 10/9/2019 **Method:** EPA 600/R-93/116

The "New" Method; see below

Client Job: Brawley-Roof

PO Number:

Report Date: 10/14/2019

Date Analyzed: 10/14/2019

Routing Number: -

Method and Analysis Information:

Fiberquant Internal SOP: PLMn

Each bulk sample is first dissected under a 7-30x magnification stereo-microscope. This examination is used to determine the general type of sample, how many and what type of layers it has, and initial estimates of fiber types and quantities. Second, liquid media mounts are made of each layer - such mounts may be of selected fibers (used solely for identification purposes) or may be representative of the layer as a whole (used for quantitation purposes). The mounts may be made in a synthetic Canadian balsam, one of several solvents, or in refractive index oils (media of known refractive index). Generally, a variety of different mounts are made: some optimized for fiber visibility, some optimized for fiber identification, and some optimized for fiber quantitation. The mounted slides are then examined at 50-400x magnification on a Nikon Labphot-pol microscope. Optical characteristics are used to identify each observed fiber type; the optical data are contained for each sample on its detail analysis sheet, attached.

Current EPA and NESHAP regulations designate a result of $\leq 1\%$ asbestos as "negative" or "non-regulated" and $> 1\%$ asbestos as "positive" or "regulated." Samples containing layers that have been determined to be "positive" may have to be handled differently during a renovation or demolition than samples whose layers have been determined to be "negative." OSHA under CFR 1926.1101 regulates work done involving any detectable concentration of asbestos.

The method of fiber identification and quantitation is the "Standard Operating Procedures for the Analysis of Asbestos in Bulk Samples using Polarized Light Microscopy", Chapter 7 of the Quality Assurance and Management Manual. This SOP and its associated reporting have been designed to satisfy all requirements in both EPA Method 600/M4-82-020 (The Interim Method) and EPA Method 600/R-93/116 (The New Method). The Interim Method is the required method for AHERA (US EPA 40 CFR Pt. 763), but this method calls for the reporting of composited results of multi-layered samples that is no longer an acceptable reporting practice in most circumstances. Current EPA rules, such as NESHAP (US EPA 40 CFR Pt. 61), as well as NVLAP accreditation policies, call for separate reporting for each layer of multi-layered samples. The New Method contains the same procedures for identification and quantitation of asbestos as does the Interim Method, except that multi-layered samples are reported to comply with the latest US EPA rule. Fiberquant not only reports the asbestos content of each layer of multi-layered samples separately (satisfying current EPA and NVLAP reporting requirements), but Fiberquant also reports what percentage of the sample each layer comprises. Therefore, the results may be arithmetically composited to satisfy the reporting requirements of the Interim Method. The method of fiber quantitation is an estimation technique in which the analysts quantitation is routinely calibrated by reference quantitation standards, and which has been shown to be equivalent in precision and accuracy to point counting. Friability is estimated for the purposes of deciding when to point count. Friabilities determined in the field take precedence over those determined in the laboratory. Those sample layers which are friable and estimated by the analyst to contain $\leq 1\%$ asbestos are point counted using 400 points. Such point counting is required by NESHAP (National Emission Standards for Hazardous Air Pollutants, Nov. 1990) in order to rely on analytical results that are $\leq 1\%$. The coefficient of variation for the estimation quantitation technique is 100% in the range 0-5%. This means that PLM analysis is not capable of conclusively determining whether a layer containing close to 1% asbestos is actually "positive" or "negative". For this reason, Fiberquant refers to results where asbestos was detected but $\leq 1\%$ as "borderline negative", and results where asbestos was $> 1\%$ but $\leq 2\%$ as "borderline positive" to indicate the uncertainty in assigning a "positive" or "negative" label. In the sample summary, "ND" means that no asbestos was detected during the analysis. A "Tr" or "Trace" of asbestos reported is defined for our purposes as the detection of several asbestos fibers during the analysis; this level would be right at the limit of detection for the method. Trace is only reported on the analysis detail - in the summary a trace would be reported as $\leq 1\%$. The limit of detection (the smallest % of asbestos that can be detected) varies greatly depending on the matrix in which the asbestos is found. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 1% stated in the method. During the analysis, the analyst, for Fiberquant identification purposes only, determines the "apparent sample type" and "apparent layer types." It must be emphasized that these types are only what is apparent. Often, different materials appear similar or identical after sampling, so the analyst may assign a type other than what was sampled.

Floor tiles present a special problem for PLM asbestos analysis. Floor tile can contain chrysotile fibers so thin that they cannot be resolved by optical methods. In such a case, we may observe a percentage of asbestos which is lower than the actual percentage, or not observe asbestos at all when some is present. For this reason, floor tiles reported as negative should be confirmed to be negative using transmission electron microscope (TEM) analysis. Likewise, vermiculite insulation materials containing traces of asbestiform asbestos present a problem for routine PLM analysis - the amphiboles are sometimes present in trace amounts inhomogeneously distributed. For this reason, loose vermiculite samples reported as negative should be confirmed to contain no amphibole using hydroseparation techniques.

The samples were analyzed under the following ongoing quality assurance program: Blank samples are routinely analyzed to maintain contamination-free materials. Each analyst has at least a bachelor's degree in physical science, and has also completed extensive training specific to asbestos analysis for 1-3 months before being allowed to analyze client samples. Qualitative reference samples are routinely analyzed to assure that analysts

can identify asbestos and asbestos-look-alike fibers. Quantitative reference samples are routinely analyzed to calibrate and characterize the estimation procedure. Microscope alignment is checked each day. Refractive index oils are calibrated at least quarterly. At least 10% of client samples are re-analyzed from scratch by a different analyst than the original, and any discrepancies are resolved for the sample and similar sample types before the results are reported. All quality checks performed for these samples were in control except as detailed in the "Analytical Notes" below. All analysts participate in interlab round robins and proficiency testing to assure competence. Fiberquant is accredited by NVLAP (Lab code #101031) for the analysis of bulk samples for asbestos using PLM. Accreditation does not imply endorsement by the EPA, any other United States governmental agency or any private agency or association. Each lab analysis refers only to the sample tested, and may not, due to the sampling process, be representative of the material sampled. This report may not be reproduced except in full, without the approval of Fiberquant Analytical Services.

Some results may have been calculated using client supplied data, such as volume or area sampled, for which Fiberquant assumes no liability for accuracy.

Job Analysis Notes:

PLM Analysis Summary:

Job Number: 201909869 Brawley-Roof

Sample Number	Lab Number	Apparent Sample Type *	Asbestos Detected Yes or No
Layer	Color	Apparent Layer Type *	Asbestos Results
Sample # 1	2019-09869- 1	Roofing	Asbestos Detected? No
Layer # 1	black	roofing roll/shingle	<i>no asbestos detected</i>
Layer # 2	black	roofing roll/shingle	<i>no asbestos detected</i>
Layer # 3	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 4	black	roof ply/bitumen	<i>no asbestos detected</i>
Sample # 2	2019-09869- 2	Roofing	Asbestos Detected? No
Layer # 1	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 2	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 3	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 4	tan	insulation	<i>no asbestos detected</i>
Sample # 3	2019-09869- 3	Roofing	Asbestos Detected? No
Layer # 1	black	roofing roll/shingle	<i>no asbestos detected</i>
Layer # 2	black	roofing roll/shingle	<i>no asbestos detected</i>
Layer # 3	black	roofing roll/shingle	<i>no asbestos detected</i>
Layer # 4	black	roof ply/bitumen	<i>no asbestos detected</i>
Sample # 4	2019-09869- 4	Roofing	Asbestos Detected? No
Layer # 1	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 2	tan	insulation	<i>no asbestos detected</i>
Sample # 5	2019-09869- 5	Roofing	Asbestos Detected? No
Layer # 1	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 2	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 3	black	roof ply/bitumen	<i>no asbestos detected</i>
Sample # 6	2019-09869- 6	Roofing	Asbestos Detected? Yes
Layer # 1	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 2	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 3	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 4	black	roof ply	<i>30-40% chrysotile asbestos</i>
Layer # 5	black	roof ply/bitumen	<i>30-40% chrysotile asbestos</i>
Sample # 7	2019-09869- 7	Roofing	Asbestos Detected? Yes
Layer # 1	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 2	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 3	black	roof ply/bitumen	<i>no asbestos detected</i>
Layer # 4	black	roof ply/bitumen	<i>30-40% chrysotile asbestos</i>
Layer # 5	black	roof ply/bitumen	<i>no asbestos detected</i>
Sample # 8	2019-09869- 8	Roofing	Asbestos Detected? No
Layer # 1	black	bitumen	<i>no asbestos detected</i>
Layer # 2	black	roof ply/bitumen	<i>no asbestos detected</i>
Sample # 9	2019-09869- 9	Adhesive/caulk	Asbestos Detected? Yes
Layer # 1	black	caulk	<i>5-10% chrysotile asbestos</i>

* Apparent Sample Types and Apparent Layer Types are as they appeared to the analyst. Since many types of materials appear similar after sampling damage, the apparent type of material may not be the actual type of material.

Sample 1 Lab Number 2019-09869- 1 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 4 Asbestos Detected? No
 Non-Fibrous Components (in approx. decreasing order): bitumen, rock, filler

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	roofing roll/shingle	20	black	1	10-20%	-	-	-	-	-
2	roofing roll/shingle	20	black	1	10-20%	-	-	-	-	-
3	roof ply/bitumen	30	black	1	10-20%	-	-	-	-	-
4	roof ply/bitumen	30	black	1	5-10%	-	-	-	-	-
Total %		100	Overall %		10-20%	-	-	-	-	-

Fiber Identification: glass fiber

Fibers								Refractive Index Determinations				
	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	CL	D	Y									
2												
3												
4												
5												
6												

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of bitumen matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 2 Lab Number 2019-09869- 2 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 4 Asbestos Detected? No
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler, perlite

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	roof ply/bitumen	20	black	1	10-20%	n.d.	-	-	-	-
2	roof ply/bitumen	20	black	1	10-20%	n.d.	-	-	-	-
3	roof ply/bitumen	20	black	1	5-10%	n.d.	-	-	-	-
4	insulation	40	tan	4	n.d.	30-40%	-	-	-	-
Total %		100	Overall %		5-10%	10-20%	-	-	-	-

Fiber Identification: glass fiber cellulose fiber

Fibers								Refractive Index Determinations				
	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	CL	D	Y									
2	W	F	N	N	H	+	U					
3												
4												
5												
6												

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

PLM Analysis Details

Job Number: 201909869 Brawley-Roof

Sample 3 **Lab Number** 2019-09869- 3 **Sampled:** 11/8/2019 **Condition:** acceptable
Analyzed By DMS 10/14/2019 **An?** OK **Apparent Smp Type** Roofing **Fibrous Solid**
Homogeneous No **# Layers** 4 **Asbestos Detected?** No
Non-Fibrous Components (in approx. decreasing order): filler, bitumen, rock

Layers					Calibrated Visual Estimate of Percents of Each Fiber						
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6	
1	roofing roll/shingle	25	black	1	5-10%	-	-	-	-	-	
2	roofing roll/shingle	25	black	1	5-10%	-	-	-	-	-	
3	roofing roll/shingle	25	black	1	5-10%	-	-	-	-	-	
4	roof ply/bitumen	25	black	1	10-20%	-	-	-	-	-	
Total %		100	Overall %			10-20%	-	-	-	-	-

Fiber Identification: glass fiber

Fibers									Refractive Index Determinations				
#	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per	
1	CL	D	Y										
2													
3													
4													
5													
6													

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 4 **Lab Number** 2019-09869- 4 **Sampled:** 11/8/2019 **Condition:** acceptable
Analyzed By DMS 10/14/2019 **An?** OK **Apparent Smp Type** Roofing **Fibrous Solid**
Homogeneous No **# Layers** 2 **Asbestos Detected?** No
Non-Fibrous Components (in approx. decreasing order): bitumen, filler, perlite

Layers					Calibrated Visual Estimate of Percents of Each Fiber						
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6	
1	roof ply/bitumen	35	black	4	10-20%	n.d.	-	-	-	-	
2	insulation	65	tan	4	n.d.	30-40%	-	-	-	-	
Total %		100	Overall %			5-10%	20-30%	-	-	-	-

Fiber Identification: glass fiber cellulose fiber

Fibers									Refractive Index Determinations				
#	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per	
1	CL	D	Y										
2	W	F	N	N	H	+	U						
3													
4													
5													
6													

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 5 Lab Number 2019-09869- 5 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 3 Asbestos Detected? No
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler,

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	roof ply/bitumen	35	black	4	20-30%	-	-	-	-	-
2	roof ply/bitumen	30	black	1	10-20%	-	-	-	-	-
3	roof ply/bitumen	35	black	1	10-20%	-	-	-	-	-
Total %		100	Overall %		10-20%	-	-	-	-	-
Fiber Identification:					glass fiber					

Fibers								Refractive Index Determinations				
	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	CL	D	Y									
2												
3												
4												
5												
6												

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 6 Lab Number 2019-09869- 6 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 5 Asbestos Detected? Yes
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler,

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	roof ply/bitumen	20	black	4	10-20%	n.d.	n.d.	-	-	-
2	roof ply/bitumen	20	black	1	10-20%	n.d.	n.d.	-	-	-
3	roof ply/bitumen	20	black	1	10-20%	n.d.	n.d.	-	-	-
4	roof ply	15	black	1	2-5%	30-40%	5-10%	-	-	-
5	roof ply/bitumen	25	black	1	2-5%	30-40%	5-10%	-	-	-
Total %		100	Overall %		10-20%	10-20%	2-5%	-	-	-
Fiber Identification:					glass fiber	chrysotile asbestos	cellulose fiber			

Fibers								Refractive Index Determinations				
	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	CL	D	Y									
2	W	A	N	N	L	+	P	1.550	vb/g	pb/r	1.556	1.549
3	W	F	N	N	H	+	U					
4												
5												
6												

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 7 Lab Number 2019-09869-7 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 5 Asbestos Detected? Yes
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler,

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	roof ply/bitumen	20	black	4	10-20%	n.d.	n.d.	-	-	-
2	roof ply/bitumen	20	black	1	10-20%	n.d.	n.d.	-	-	-
3	roof ply/bitumen	20	black	1	10-20%	n.d.	n.d.	-	-	-
4	roof ply/bitumen	5	black	1	2-5%	30-40%	5-10%	-	-	-
5	roof ply/bitumen	35	black	1	n.d.	n.d.	30-40%	-	-	-
Total %		100	Overall %		5-10%	>1-2%	10-20%	-	-	-
Fiber Identification:					glass fiber	chrysotile asbestos	cellulose fiber			

Fibers									Refractive Index Determinations				
#	Fiber	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	glass fiber	CL	D	Y									
2	chrysotile asbestos	W	A	N	N	L	+	P	1.550	vb/g	pb/r	1.556	1.549
3	cellulose fiber	W	F	N	N	H	+	U					
4													
5													
6													

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent. Number of layers and sequence is estimated since sample is not intact.

Sample 8 Lab Number 2019-09869-8 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Roofing Fibrous Solid
 Homogeneous No # Layers 2 Asbestos Detected? No
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler,

Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	bitumen	70	black	1	n.d.	-	-	-	-	-
2	roof ply/bitumen	30	black	1	10-20%	-	-	-	-	-
Total %		100	Overall %		2-5%	-	-	-	-	-
Fiber Identification:					glass fiber					

Fibers									Refractive Index Determinations				
#	Fiber	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per
1	glass fiber	CL	D	Y									
2													
3													
4													
5													
6													

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Sample 9 Lab Number 2019-09869-9 Sampled: 11/8/2019 Condition: acceptable
 Analyzed By DMS 10/14/2019 An? OK Apparent Smp Type Adhesive/caulk Sticky
 Homogeneous Yes # Layers 1 Asbestos Detected? Yes
 Non-Fibrous Components (in approx. decreasing order): bitumen, filler,

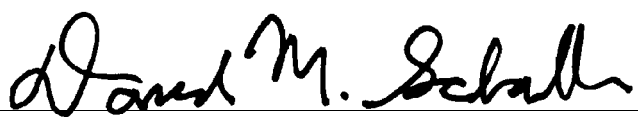
Layers					Calibrated Visual Estimate of Percents of Each Fiber					
#	Layer Type	%	Color	Friability	Fib 1	Fib 2	Fib 3	Fib 4	Fib 5	Fib 6
1	caulk	100	black	1	5-10%	-	-	-	-	-
Total %		100	Overall %		5-10%	-	-	-	-	-

Fiber Identification: chrysotile asbestos

Fibers									Refractive Index Determinations				
#	Color	Mrph	Iso	Pleo	Bi	Elg	Ext	Oil	Col Par	Col Per	RI Par	RI Per	
1	chrysotile asbestos	W	A	N	N	L	+	P	1.550	vb/g	pb/r	1.556	1.549
2													
3													
4													
5													
6													

Sample Analytical Note
 Procedure: tweased apart using forceps. Procedure: dissolution of matrix using solvent.

Fr=Friability: 1=very non-friable; 2= non-friable; 3=friable; 4=highly friable
 Colors: B=black;BL=blue;BR=brown;CL=clear;G=Green;GY=gray;OR=orange;OW=off-white;PN=pink;PU=purple;R=red;TN=tan;W=white;Y=yellow;V=various
 Fiber Morphology: A=fine fibers/bundles, white, sinewy, flexible; B=fine fibers/bundles, w-br, straight, broomed ends; C=fine fibers/bundles, blue, straight, broomed ends;
 D=fine to coarse fibers, CL-B, brittle; E=coarse fibers,CL or dyed, striated; F=coarse fibers or splinters, W-BR, ribbon-like; G=lath-like or shards, low aspect ratio, may taper
 Iso=isotropism - may be yes or no; Pleo=pleochroism - may be yes or no; Bi=birefringence - may be None, Low, Medium or High
 Elg=sign of elongation - may be +, - or B (both); Ext=extinction - may be Parallel, Oblique, None or Undulating; Oil=medium used to for dispersion staining
 Col Par=dispersion staining colors parallel to the fiber (fiber/halo): b/w=black/white; dg/py=dark gray/pale yellow; vg/y=violet gray/yellow; db/ly=dark blue/lemon yellow; vb/g= vivid blue/gold; sb/o=sky blue/orange; pb/r=pale blue/red; gb/dr=gray blue/dark red; w/b=white/black. Col Perp=same only perpendicular to fiber.
 RI Par=refractive index parallel to fiber; RI Perp=refractive index perpendicular to fiber



Analyst: DAVID M. SCHALLER

Printed: 14-Oct-19

Original Print Date: 14-Oct-19



Larry S. Pierce, Approved Accreditation Signatory

FIBERQUANT

ANALYTICAL SERVICES

Fiberquant Analytical Services 5025 S. 33rd St.
Phoenix, AZ 85040; Phone: 602-276-6139; FAX: 602-276-4558;
info@fiberquant.com

Analysis Request/Chain-of-Custody Form

Submitted by (Company) NEI	
Address 1851 W. 24th ST.	
City, State, Zip Code YUMA, AZ. 85364	
Phone	FAX
Email crichards@neianw	
Invoice to (Company) SAME	
Address	
City, State, Zip Code	
Phone	FAX
Contact (print) Coy Richards	
Sampled by (signature) Coy R.	
Job Number or Project Name BRAWLEY - ROOF	
PO Number -	

<Analysis Method Requested> ONLY ONE METHOD per COC			Turn-around-time (circle one)			
			Rush	Norm	Ext.	
Asbestos by PLM	Method >	Improved Interim	Urgent Rush <3 hrs	<6 hrs	1-3 days	
	Analyze >	AI ATPF				
	If ATPF then >	By Layer by Sample				
	Single Layer Protocol >	Yes No				
Fibers by PCM	Method >	7400 (Area) ORM (Personal)	<4 hrs	24 hrs	-	
Asbestos by TEM	In Air >	AHERA Mod. AHERA ISO	<6 hrs	24 hrs	3-5 days	
	In Water* >	Water Sludge	1-2 days	3-5 days	N/A	
	In Bulk (Annex2) >	Chatfield Full Quant.				
	In Dust >	ASTM D5755	3-5 days	5-10 days	N/A	
Pb by FLAA	Analyte >	Pb Other	<6 hrs	2-3 days	N/A	
	Matrix >	Filter >				MCE FG
		Paint >				by Area (mg/cm ²) by Weight (ppm)
		Soil >				
		Wipe >				
Initial here certifying wipes used are ASTM E1792 compliant						
Fungi	Air Sample >	Zefon Alter Other	<6 hrs	1-2 days	N/A	
	Bulk >	Sample Swab				
	Tape Lift >	Qualitative (% & type)				
		Quantitative (type/cm ²)				
Soot	ASTM D6602-03b	Optical	<6 hrs	1-2 days	N/A	
		Optical & TEM	1-2 days	3-5 days	N/A	
Other			Call	Call		

Sample # (1 per line)	Description/Location	Sample Date	Sample Time	Vol. or Area
1) ①	LOWER ROOF	11/8	10:00	
2) ②	LOWER ROOF	11/8		
3) ③	LOWER ROOF	11/8		
4) ④	LOWER ROOF	11/8		
5) ⑤	UPPER ROOF	11/8		
6) ⑥	UPPER ROOF	11/8		
7) ⑦	UPPER ROOF	11/8		
8) ⑧	PATCH WORK - BLK	11/8		
9) ⑨	CAULKING - BLK	11/8		
10)				
11)				
12)				
13)				
14)				
15)				
16)				
17)				
18)				
19)				
20)				

1) Relinquished by:	Date: 10/10/19	Time: 16:00	3) Relinquished by:	Date:	Time:
2) Received by:	Date: 10-9-19	Time: 12:00	4) Received by:	Date:	Time:
* Top Water Sampler Name Required by State of Arizona	Print Name		Fiberquant assigned Job Number >	201909869	
Review of Analysis Request (Initials):			Page of		

Note: Data completed by client (including number and identity of samples) is assumed to be correct until it is verified at time of sample preparation.

Attachment 2

Inspector Certifications

THE ASBESTOS INSTITUTE

Certifies that

Coy M Richards

has attended the EPA approved course

AHERA Building Inspector Refresher

Approval Code: CA-089-06

March 8, 2019

and successfully passed the competency exam.

Date of Examination: March 8, 2019

Date of Expiration: March 8, 2020



William T. Cavness
Director



Approved Instructor

THE ASBESTOS INSTITUTE

20033 N. 19th Avenue

Building #6

Phoenix, AZ 85027

602-864-6564

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Unit
2424 Arden Way, Suite 495
Sacramento, CA 95825-2417
(916) 574-2993 Office (916) 483-0572 Fax
<http://www.dir.ca.gov/dir/databases.html> actu@dir.ca.gov



806114397C

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Nicklaus Engineering, Inc.
Stacy S Gutierrez
1851 W. 24th Street, Ste 101
Yuma AZ 85364

January 03, 2019

Dear Certified Asbestos Consultant or Technician:

Congratulations, you have passed your certification examination!

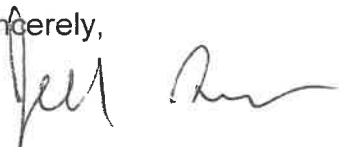
Enclosed is your certification card. **To maintain your certification, please abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card in accordance with Title 8, California Code of Regulations, Division 1, Chapter 3.2, Article 2.6, Section 341.15(h) (1).

Please keep and do not send copies of your required AHERA refresher renewal certificates to the Division until you apply for renewal of your certification.

Please contact our office at the above address, fax number or email of any changes in your mailing or work address within 15 days of the change.

Sincerely,


Jeff Ferrell
Senior Safety Engineer

Attachment

cc: File

Passed Exam - Card Attached, Revised 04/04/2012

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant



Stacy S Gutierrez

Name

Certification No. **08-4397**

Expires on **03/19/20**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.