

**ASBESTOS, LEAD-BASED PAINT,  
AND HAZARDOUS MATERIALS SURVEY**

PERFORMED AT

**NASA - STENNIS SPACE CENTER  
B-2 TEST STAND  
BUILDING 4221  
MISSISSIPPI 39529**

PREPARED FOR

**HARRY PEPPER AND ASSOCIATES  
9000 REGENCY SQUARE BOULEVARD, SUITE 100  
JACKSONVILLE, FLORIDA 32211**

PREPARED BY



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**PROJECT NO: 140063-AL**

PREPARED ON

**April 4, 2014**



April 4, 2014

(b)(6)

Harry Pepper and Associates  
9000 Regency Square Boulevard, Suite 100  
Jacksonville, Florida 32211

**Re: Asbestos, Lead-Based Paint, and Hazardous Materials Survey  
NASA - Stennis Space Center  
B- 2 Test Stand  
Mississippi 39529  
OHC Project No.: 140063-ALH**

Dear

(b)(6)

OHC Environmental Engineering, Inc. (OHC) is pleased to present the report for the Asbestos, Lead-Based Paint, and Hazardous Materials Survey that was performed on March 17-20, 2014. These services were conducted in support of the B2 Test Stand Restoration Building 4221 project at NASA's Stennis Space Center in Mississippi.

If you should have any questions, please do not hesitate to contact us.

Sincerely,

(b)(6)

(b)(6)

CIH, LAC  
President

# ASBESTOS, LEAD-BASED PAINT, AND HAZARDOUS MATERIALS SURVEY

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**OHC PROJECT NO.:** 140063-ALH

**PROJECT NAME:** Asbestos, Lead-Based Paint, and Hazardous Materials Survey

**ADDRESS:** NASA Stennis Space Center  
B-2 Test Stand  
Building 4221  
Mississippi 39529

**DATES OF SURVEY:** March 17-20, 2014

**CONSULTING FIRM:** OHC Environmental Engineering, Inc.  
5420 Bay Center Drive, Suite 100  
Tampa, Florida 33609

**SURVEYOR:** (b)(6)

**CIH:** (b)(6)

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## 1.0 EXECUTIVE SUMMARY

### 1.1 Scope of Work

OHC Environmental Engineering scope of work for Phase III Work Package of the B-2 Test Stand, Building 4221, at NASA Stennis Space Center in Mississippi included the following:

- A hazardous materials assessment of all coatings scheduled for removal or demolition activities on this project. The hazardous material assessment included sampling for asbestos, lead-based paint (LBP), polychlorinated biphenyls (PCB), and the Resource Conservation and Recovery Act (RCRA) 8 metals.
- B-2 side from ground level to level 18 of the existing structure, extending from softcore over to the Piers and piping attached to the Piers on East side including:
  - Deluge water system – Ground level to Level 7
  - Fire Suppression System- Level 7 to Level 18
  - Liquid Oxygen System
  - Helium System
  - Hydrogen System
  - Supports for these systems
  - Structural Support
  - Stairs, Platforms and Landings
  - Flame Bucket
- Preparation of a comprehensive report documenting survey findings.

### 1.2 Asbestos Survey Results

Based on the results of the Polarized Light Microscopy (PLM) laboratory analysis, asbestos **was not identified** in samples collected of suspect ACM.

### 1.3 Lead-Based Paint Survey Results

Based on the results of the paint chip samples, lead was identified on most the paint collected as indicated in **Table 1**.

Sample Number	Level	Location	Color	Results % wt
ST-2	19	Handrail	White	4.2
ST-4	19	Stairs	White	0.12
ST-8	18	East Side Paint on Flashing of Softcore	Grey	0.56
ST-9	18	East Side Paint on Flashing of Softcore	Grey	0.27
ST-10	18	East Side Softcore Wall	Grey	0.29
ST-11	18	E. side Paint on I-Beam	Grey	19
ST-12	17	E. side Paint on I-Beam	Grey	2.8
ST-20	16	Railing	White	0.29
ST-21	11	E. Side Sofcore P1-3801 Pipe	Grey	3.4
ST-23	11	Base column of corvette	Grey	0.3
ST-24	11	10" vertical pipe part of deluge system		1.7
ST-25	11	VA 3J01HA 2 1/2" pipe on Softcore		27
ST-26	11	3 " Helium Pipe		0.13
ST-27	11	Base column of corvette		0.13
ST-28	11	Railing	White	0.96
ST-29	11	Vertical fire line	White	2.2
ST-30	Ground	Deluge water system pipe	Beige	29
ST-31	Ground	Deluge water system pipe	Beige	41
ST-34	Ground	Bolt under flame bucket	Beige	0.098
ST-36	Ground	Under Flame bucket	Beige	1.7
ST-37	Ground	Bolts under flame bucket	Beige	0.21
ST-39	Elevated First Level	Deluge water system pipe S.E	Beige	47

ST-40	Elevated First Level	Vertical deluge water system S.E.	Beige	0.079
ST-41	11	Deck of battlefield	Beige	2.1
ST-42	11	VA3K67W Deluge water system S.E top of battleship	Beige	4.7
ST-43	11	I-Beam structure on top of battleship	Beige	2.3
ST-44	11	Railing on top of Battleship	Beige	0.33
ST-45	11	I-Beam structure on top of battleship	Beige	0.07
ST-46	11	Floor on top of battleship	Grey	0.2
ST-47	11	Bolts	Grey	0.063
ST-48	Ground	Bottom of flame bucket	Grey	0.01
ST-49	Ground	Bottom of flame bucket	Grey	0.053
ST-51	Ground	Inside of flame bucket	Yellow	0.52
ST-52	2	Support I-beam for deluge system	Grey	3.6
ST-53	2	Support I-beam for deluge system	Grey	6.4
ST-54	3	Bay 3 deluge pipe support box	Grey	35
ST-55	3	Bay 2 deluge pipe support box	Grey	24
ST-56	3	Bay 3 support I-beam	Grey	0.058
ST-59	3	Bay 2 Support I-beam	Grey	0.12
ST-60	11	Support hangers for firex and Helium pipes S. Side	Pink	0.074
ST-61	11	Support hangers for firex pipes S. side	Pink	0.33
ST-62	11	Support hangers for firex pipes E. side	Grey	1.5
ST-63	11	Support hangers for firex system small pipes	Grey	0.23
ST-64	11	Support hangers for firex system	Grey	0.52
ST-65	Ground	Main Deluge pipe	Beige	0.33
ST-67	Ground	Support for deluge system	Beige	5.2
ST-68	16	Exterior wall of Corvette	White	0.088
ST-71	16	Interior wall of Corvette	White	6.8

ST-73	16	Fire Suppression system	White	4.4
ST-73A	1	Nitrogen line	White	0.36
ST-74	1	Helium line	White	0.42
ST-75	1	Air line	White	25
ST-76	1	Hydrogen GH	White	0.12
ST-77	1	helium HE	White	0.096
ST-78	1	Support Beam for pipes	White	2
ST-79	Ground	E. Pier Stair Railing	Beige	37
ST-80	Ground	E. Pier Stair Kick Plate	Beige	56
ST-81	Ground	E. Pier Stair Post	Beige	35
ST-82	Ground	Dock Support Beam	White	9.7
ST-83	Ground	Dock Support Beam	White	7.2
ST-84	3	E. Pier Stair Post	Beige	44
ST-85	3	E. Pier Stair Railing	Beige	29
ST-86	3	E. Pier Stair Plate	Beige	12
ST-88	18	Stair railing	White	13
ST-89	18	Stair Kick Plate	White	2.2
ST-90	16	E. Side Stair Railing	White	0.29
ST-91	16	E. Side Stair Post	White	0.76
ST-92	16	E. Side Kick Plate	White	3
ST-93	11	S. Side Stair Railing	White	1.1
ST-94	11	S. Side Stair Kick Plate	White	1.1
ST-95	11	S. Side Stair Post	White	2.2
ST-96	9	Walkway S. Side of Battleship- Railing	White	2
ST-97	9	Walkway S. Side of Battleship- Post	White	0.95
ST-98	9	Walkway S. Side of Battleship- Kick Plate	White	1.4



#### 1.4 PCB Sample Results

The presence of PCBs was detected in the following areas:

Table 2				
Sample #	Level	Location	PCB	Concentration
ST-PCB-1	16	Caulking on door on E. side of softcore	Aroclor 1254	2.6
ST-PCB-4		Grey Paint on support beam	Aroclor 1254	1.2
ST-PCB-8	Ground	Grey Paint on Structure under flame bucket	Aroclor 1254	16,000

Additional samples of PCB may be required.

#### 1.5 RCRA 8 Metals Results

Based on the samples collected for RCRA 8 metals other heavy metals were identified in the paint. Heavy metals in the form of Barium, Chromium and Lead were identified as follow:

**Soft Core Wall-** Contains a medium concentration of Barium and Lead and low concentration of Chromium.

**Structural Steel –** Contains a medium concentration of Barium, Lead and Chromium and low concentration of Cadmium.

**Coating on top of Corvette Adjacent to Softcore-** Contains a low concentration of Arsenic, Barium, Cadmium, Chromium Lead and Silver.

**Support Beam Under Flame Bucket-** Contains a high concentration of Lead.

**Structure Under Flame Bucket-** Contains a high concentration of Lead and medium concentration of Chromium.

**Inside Flame Bucket-** Contains a high concentration of Lead.

**Main Deluge Pipe-** Contains a high concentration of Lead and medium concentration of Chromium.

**Exterior Wall of Corvette-** Contains a low concentration of Lead.

**Interior Wall of Corvette-** Contains a very high concentration of Lead and medium concentration of Chromium.

**Structural Beam by Corvette-** Contains a medium concentration of Lead.

**E. Side Support Beam-** Contains a very high concentration of Lead and high concentration of Chromium.

## **1.6 Ballsts, Light Bulbs and Receptacles**

### **Mezzanine-**

Receptacles are vinyl covering on the wiring. There is no suspect Asbestos wiring.

Ballasts listed below do not have any symbols indicating they do not contain PCB, therefore they have to be treated as PCB until we can prove otherwise.

- GE Ballast Code 72266 Electronic Ballast Ultralight
- GE Ultramax T-8 GE 232 Max Ultralight
- Universal Lighting Technology TRIAD B23IUNVHP-B

Some of the light fixtures has an old filter which was never replaced. These filters should be assumed to contain PCB.

Most of the fixtures in the Mezzanine contain the GE Ballasts.

### **Level 1**

Ballasts- Sylvania Quiktronic QT 4X32/120 IS. Must be treated as PCB until we can prove

otherwise.

Receptacles- vinyl covering on wiring  
E. Pier 11 Mercury Lamps

**Level 3- E. Pier**

Receptacles Vinyl wiring  
Ballasts- Sylvania Ballasts. Some of the fixtures has the filters in them. Must be treated as PCB until we can prove otherwise.

**Level 4- E. Pier**

Old mercury type light bulbs and fixtures  
Phillips F40CW-RS-EW-II  
045677-107413

Receptacles – vinyl wiring  
Ballast and filters are old and should be treated as PCB

**Level 5- E. Pier**

Old light fixtures except for the emergency light fixture. Contain the old ballasts and filters, must be treated as PCB.

Mercury light bulbs

**Level Six**

Old light fixtures except for the emergency light fixture. Contain the old ballasts and filters, must be treated as PCB.

Mercury light bulbs

**Level 7- 9**

Old light fixtures except for the emergency light fixture. Contain the old ballasts and filters, must be treated as PCB. Total of eight fixtures

Mercury light bulbs

## South Pier

### Level 4-8

Old light fixtures except for the emergency light fixture. Contain the old ballasts and filters, must be treated as PCB. Five light fixtures on each level.

Mercury light bulbs

### Level 8 and 9

Old light fixtures

Jelly jar light fixtures

Thomas & Betts Hazlux 3/Hazlite M3

Type 4X

Hi Pressure sodium Bulbs

## 2.0 INTRODUCTION

OHC Environmental Engineering, Inc. (OHC) was contracted by [REDACTED] (b)(6) of Harry Pepper and Associates to perform hazardous materials assessment of all coatings scheduled for removal or demolition activities on the B2 Test Stand Restoration Building 4221 project at NASA's Stennis Space Center in Mississippi. The survey was performed on March 17-20 by [REDACTED] (b)(6)

### 2.2 Limitations

The scope of work under this contract is limited to work associated with phase III of the B2 test stand as listed above.

## 3.0 ASBESTOS SURVEY

The asbestos survey was conducted by [REDACTED] (b)(6) an AHERA-Accredited Building Inspector.

Asbestos **was not identified** in samples of suspect asbestos-containing materials (ACM) as indicated in **Table 3**.

### 3.1 Homogeneous Areas

A Homogeneous Area (HA) is defined by the Environmental Protection Agency as “an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color, age, construction, use and texture.”

**Table 2** summarizes the number of samples collected, sample numbers, type of material, locations, and the quantity of material for each HA identified by the surveyor. The tables indicate if asbestos **was** identified in the samples collected within each HA.

**Table 3**

Sample Number	HA	Level	Location	Results
ST-A-1A	1	18	Flashing on E. side of softcore	None Detected
ST-A-1B	1	18	Flashing on E. side of softcore	None Detected
ST-A-1C	1	13	Flashing on S. side of softcore	None Detected
ST-A-2A	2	16	Caulking around door on E. side	None Detected
ST-A-3A	3	16	Coating on top of Corvette	None Detected
ST-A-3B	3	16	Coating on top of Corvette	None Detected
ST-A-3C	3	16	Coating on top of Corvette	None Detected
ST-A-4A	4	16	Caulking under door stop on E. Side	None Detected
ST-A-5A	5	16	Black foam pipe insulation on top of Corvette	None Detected
ST-A-6A	6	11	Gasket on end of pipe E. of softcore	None Detected
ST-A-7A	7	11	White wrapping on foam insulation	None Detected
ST-A-8A	8	Ground	Caulking on Hydrogen vent line	None Detected
ST-A-8B	8	Ground	Caulking on Hydrogen vent line	None Detected
ST-A-8C	8	Ground	Caulking on Hydrogen vent line	None Detected
ST-A-9A	9	Ground	Insulation on Hydrogen vent line	None Detected
St-A-9B	9	Ground	Insulation on Hydrogen vent line	None Detected
ST-A-9C	9	Ground	Insulation on Hydrogen vent line	None Detected
ST-A-10A	10		Caulking on corrugated metal wall	None Detected
ST-A-11A	11	Dock	Elbow insulation on Stainless Steel pipe	

### 3.2 Conclusion

Asbestos-containing materials were not identified in the samples collected of suspect ACM.

Notification to the Mississippi Department of Environmental Quality (MDEQ) is required Ten (10) working days prior to abatement, renovation or demolition.

### 3.3 Regulatory Requirements

#### Demolition

According to the MDEQ, demolition means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Owners and operators of regulated demolition operations must provide demolition notifications to the MDEQ for all demolitions ten working days before demolition activity.

#### Renovation

According to the MDEQ, renovation means altering a facility or one or more facility components in any way, including the stripping or removal of regulated asbestos containing material from a facility component.

Owners and operators of regulated renovation operations must provide renovation notifications to the MDEQ ten working days before any renovation activity, including asbestos abatement, affecting at least 160 square feet, 260 linear feet, or 35 cubic feet of regulated asbestos containing material.

#### Notification

Notification is required to the local regulatory agency:

1. **Ten (10) working days prior to a demolition. This includes buildings with no asbestos present.**
2. Ten (10) working days prior to a renovation operation, if the amount of asbestos material removed or impacted is greater than 160 sq. ft. on all building components (i.e. floor tile, mastic, GWBS, etc.) or 260 ln. ft. on pipes.
3. One (1) day prior to demolition, if the building has been condemned and is structurally unsound as determined by the appropriate agency.

Notification should be sent by certified mail with return receipt or hand delivered to the Mississippi Department of Environmental Quality (MDEQ).

The demolition contractor must wait ten (10) working days (Monday – Friday) from the postmarked date of mailing or the date of hand delivery to commencement of demolition.

Any change to the start date of the demolition requires notification to the agency by phone, followed by a written revision to the Notification Form.

**3.4 Statutory Requirements**

The regulatory agency responsible for the oversight of the rules pertaining to asbestos-containing building materials (ACBM) is the Environmental Protection Agency (EPA). The regulations state that prior to demolition or renovation a facility survey must be conducted in accordance to section 40 CFR 61-M National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revisions, Final Rule.

Enforcement of these rules was passed on to the states. In the State of Mississippi, they are enforced by the Mississippi Department of Environmental Quality (MDEQ). Some counties have developed an enforcement division to carry out the responsibilities of the DEP and have developed environmental and asbestos ordinances with which compliance is required.

**4.0 LEAD SURVEY**

**4.1 Lead Sample Analysis**

Please refer to the following table for the results of the lead based paint analysis:

Table 4				
Sample	Level	Location	Color	Sample Results % wt
ST-2	19	Handrail	White	4.2



ST-3	19	Stairs	White	0.024
ST-4	19	Stairs	White	0.12
ST-6	18	South Side Softcore Wall	Pink	0.036
ST-7	18	West Side Softcore	Pink	0.049
ST-8	18	East Side Paint on Flashing of Softcore	Grey	0.56
ST-9	18	East Side Paint on Flashing of Softcore	Grey	0.27
ST-10	18	East Side Softcore Wall	Grey	0.29
ST-11	18	E. side Paint on I-Beam	Grey	19
ST-12	17	E. side Paint on I-Beam	Grey	2.8
ST-13	17	E. Side Softcore Paint on Door	Grey	0.066
ST-18	16	S. Side White paint on Softcore	White	0.014
ST-19	16	S. Side Blue paint on Softcore wall	Blue	<0.010
ST-20	16	Railing	White	0.29
ST-21	11	E. Side Softcore P1-3801 Pipe	Grey	3.4
ST-23	11	Base column of corvette	Grey	0.3
ST-24	11	10" vertical pipe part of deluge system		1.7
ST-25	11	VA 3J01HA 2 1/2" pipe on Softcore		27
ST-26	11	3 " Helium Pipe		0.13
ST-27	11	Base column of corvette		0.13
ST-28	11	Railing	White	0.96
ST-29	11	Vertical fire line	White	2.2
ST-30	Ground	Deluge water system pipe	Beige	29
ST-31	Ground	Deluge water system pipe	Beige	41
ST-32	Ground	Bolt angle support under flame bucket	Beige	0.015
ST-34	Ground	Bolt under flame bucket	Beige	0.098
ST-36	Ground	Under Flame bucket	Beige	1.7
ST-37	Ground	Bolts under flame bucket	Beige	0.21
ST-38	Ground	Base plate under flame bucket	beige	0.028

April 4, 2014

ASBESTOS, LEAD-BASED PAINT, AND HAZARDOUS MATERIALS SURVEY  
NASA STENNIS SPACE CENTER  
B-2 Test Stand  
BUILDING 4221  
MISSISSIPPI 39529  
OHC PROJECT NO. 140063-ALH

ST-39	Elevated	Deluge water system pipe S.E	Beige	47
ST-40	Elevated	Vertical deluge water system S.E.	Beige	0.079
ST-41	11	Deck of battlefield	Beige	2.1
ST-42	11	VA3K67W Deluge water system S.E top of battleship	Beige	4.7
ST-43	11	I-Beam structure on top of battleship	Beige	2.3
ST-44	11	Railing on top of Battleship	Beige	0.33
ST-45	11	I-Beam structure on top of battleship	Beige	0.07

ST-46	11	Floor on top of battleship	Grey	0.2
ST-47	11	Bolts	Grey	0.063
ST-48	Ground	Bottom of flame bucket	Grey	0.01
ST-49	Ground	Bottom of flame bucket	Grey	0.053
ST-51	Ground	Inside of flame bucket	Yellow	0.52
ST-52	2	Support I-beam for deluge system	Grey	3.6
ST-53	2	Support I-beam for deluge system	Grey	6.4
ST-54	3	Bay 3 deluge pipe support box	Grey	35
ST-55	3	Bay 2 deluge pipe support box	Grey	24
ST-56	3	Bay 3 support I-beam	Grey	0.058
ST-59	3	Bay 2 Support I-beam	Grey	0.12
ST-60	11	Support hangers for firex and Helium pipes S. side	Pink	0.074
ST-61	11	Support hangers for firex pipes S. side	Pink	0.33
ST-62	11	Support hangers for firex pipes E. side	Grey	1.5
ST-63	11	Support hangers for firex system small pipes	Grey	0.23
ST-64	11	Support hangers for firex system	Grey	0.52
ST-65	Ground	Main Deluge pipe	Beige	0.33
ST-67	Ground	Support for deluge system	Beige	5.2
ST-68	16	Exterior wall of Corvette	White	0.088
ST-71	16	Interior wall of Corvette	White	6.8
ST-73	16	Fire suppression system	White	4.4
ST-73A	1	Nitrogen line	White	0.36
ST-74	1	Helium line	White	0.42
ST-75	1	Air line	White	25
ST-76	1	Hydrogen GH	White	0.12
ST-77	1	helium HE	White	0.096
ST-78	1	Support Beam for pipes	White	2
ST-79	Ground	E. Pier Stair Railing	Beige	37
ST-80	Ground	E. Pier Stair Kick Plate	Beige	56

ST-81	Ground	E. Pier Stair Post	Beige	35
ST-82	Ground	Dock Support Beam	White	9.7
ST-83	Ground	Dock Support Beam	White	7.2
ST-84	3	E. Pier Stair Post	Beige	44
ST-85	3	E. Pier Stair Railing	Beige	29
ST-86	3	E. Pier Stair Plate	Beige	12
ST-88	18	Stair railing	White	13
ST-89	18	Stair Kick Plate	White	2.2
ST-90	16	E. Side Stair Railing	White	0.29
ST-91	16	E. Side Stair Post	White	0.76
ST-92	16	E. Side Kick Plate	White	3
ST-93	11	S. Side Stair Railing	White	1.1
ST-94	11	S. Side Stair Kick Plate	White	1.1
ST-95	11	S. Side Stair Post	White	2.2
ST-96	9	Walkway S. Side of Battleship- Railing	White	2
ST-97	9	Walkway S. Side of Battleship- Post	White	0.95
ST-98	9	Walkway S. Side of Battleship- Kick Plate	White	1.4

#### 4.3 Conclusion

Based on the paint chip samples, lead based paint **exists at this location as indicated in the table above.**

There is presently no standard on the level of lead in paint other than the HUD guidelines of 0.5% or 1 mg/cm<sup>2</sup>, which is used as a threshold for remedial action. OSHA does not recognize these criteria. The consumer product safety commission has established a level of 0.06% as a threshold for lead-free paint. Any levels above the Consumer Product Safety Commission standard of 0.06 percent by weight are considered lead-containing paint. OSHA's standards for lead are based on the potential for human exposure by means of inhalation and ingestion; therefore, any substrate with any level of lead-based paint could cause health concerns when the paint is disturbed.

Any persons performing any Lead activities such as LBP renovation, repair, painting or maintenance that may disturb the paint must be certified by EPA to perform these activities in accordance with the Renovation, Repair and Painting (RRP) rule 40 CFR 745 Subpart E.

## 5.0 PCB SAMPLES

Samples were collected for laboratory analyses to identify PCB concentration. According to the results of the laboratory analysis, PCB was detected in the following areas:

Sample	Level	Location	Color	Test Results mg/Kg
ST-PCB-1	16	Caulking on door on E. side of softcore		Aroclor 1254- 2.6
ST-PCB-2	16	Paint on E. side of softcore	Grey	
ST-PCB-3	16	Softcore wall E. side	Pink	None Detected
ST-PCB-4	17	Paint on support beam	Grey	Aroclor 1254- 1.2
ST-PCB-5	17	Coating on top of corvette	White	None Detected
ST-PCB-6	16	Caulking just below door stop E. side		Aroclor 1254- 3.3
ST-PCB-7	Ground	Deluge water system	Beige	
ST-PCB-8	Ground	Structure under flame bucket	Grey	Aroclor 1254- 16,000
ST-PCB-9	Dock	Dock Support Beam	White	

\*BQL = Below Quantitation Limit    \*\*MI – Matrix Interference

## 6.0 RCRA 8 METALS

TABLE 5: RCRA 8

Sample #	Analyte	Total ( $\mu\text{g}$ )	Minimum Reporting Limit ( $\mu\text{g}$ )
ST1-19	Silver	ND	24
	Arsenic	ND	49
	Barium	21000	240
	Cadmium	41	9.8
	Chromium	63	24
	Lead	360	24
	Selenium	ND	49
	Mercury	ND	0.12
	<b>Description: Structural Steel</b>		
Sample #	Analyte	Total ( $\mu\text{g}$ )	Minimum Reporting Limit ( $\mu\text{g}$ )
ST5-19	Silver	60	25
	Arsenic	ND	50
	Barium	22000	620
	Cadmium	23	10
	Chromium	400	25
	Lead	2600	62
	Selenium	ND	50
	Mercury	ND	0.049
	<b>Description: Coating on Top of Corvette</b>		
Sample #	Analyte	Total ( $\mu\text{g}$ )	Minimum Reporting Limit ( $\mu\text{g}$ )
ST-14	Silver	18	25
	Arsenic	85	50
	Barium	28	28
	Cadmium	16	1.0
	Chromium	130	2.5
	Mercury	ND	0.049
	Lead	160	2.5
	Selenium	ND	5.0
	<b>Description: Softcore Wall</b>		
Sample #	Analyte	Total ( $\mu\text{g}$ )	Minimum Reporting Limit ( $\mu\text{g}$ )
ST-22	Silver	ND	25
	Arsenic	ND	50
	Barium	6200	250
	Cadmium	710	10

	Chromium	460	25
	Mercury	0.47	0.12
	Lead	2600	25
	Selenium	610	50
<b>Description: Support Beam Under Flame Bucket</b>			
Sample #	Analyte	Total (µg)	Minimum Reporting Limit (µg)
ST-33	Silver	ND	25
	Arsenic	ND	50
	Barium	ND	250
	Cadmium	ND	9.9
	Chromium	57	25
	Mercury	0.47	0.051
	Lead	10,000	120
	Selenium	ND	50
<b>Description: Structure Under Flame Bucket</b>			
Sample #	Analyte	Total (µg)	Minimum Reporting Limit (µg)
ST-35	Silver	35	25
	Arsenic	ND	50
	Barium	ND	250
	Cadmium	ND	10
	Chromium	250	25
	Mercury	0.31	0.049
	Lead	130,000	2500
	Selenium	ND	50
<b>Description: Inside Flame Bucket</b>			
Sample #	Analyte	Total (µg)	Minimum Reporting Limit (µg)
ST-50	Silver	ND	25
	Arsenic	ND	50
	Barium	ND	250
	Cadmium	ND	10
	Chromium	11,000	25
	Mercury	ND	0.049
	Lead	11,000	2500
	Selenium	ND	50
<b>Description: Main Deluge Pipe</b>			
Sample #	Analyte	Total (µg)	Minimum Reporting Limit (µg)
ST-66	Silver	43	25

	Arsenic	ND	50
	Barium	ND	250
	Cadmium	11	10
	Chromium	710	63
	Mercury	ND	0.25
	Lead	4900	63
	Selenium	ND	50
<b>Description: Exterior Wall of Corvette</b>			
<b>Sample #</b>	<b>Analyte</b>	<b>Total (µg)</b>	
ST-69	Silver	ND	12
	Arsenic	ND	24
	Barium	ND	120
	Cadmium	210	4.8
	Chromium	28	12
	Mercury	0.10	0.10
	Lead	920	12
	Selenium	ND	24
<b>Description: Interior Wall of Corvette</b>			
<b>Sample #</b>	<b>Analyte</b>	<b>Total (µg)</b>	<b>Minimum Reporting Limit (µg)</b>
ST-70	Silver	ND	100
	Arsenic	ND	200
	Barium	ND	1000
	Cadmium	11	40
	Chromium	680	100
	Mercury	ND	0.25
	Lead	58,000	500
	Selenium	ND	200
<b>Description: Structural Beam of Corvette</b>			
<b>Sample #</b>	<b>Analyte</b>	<b>Total (µg)</b>	<b>Minimum Reporting Limit (µg)</b>
ST-72	Silver	ND	18
	Arsenic	ND	37
	Barium	ND	180
	Cadmium	10	7.4
	Chromium	73	18
	Mercury	ND	0.63
	Lead	1200	18
	Selenium	ND	37
<b>Description: Structural Beam of Corvette</b>			



April 4, 2014

ASBESTOS, LEAD-BASED PAINT, AND HAZARDOUS MATERIALS SURVEY  
NASA STENNIS SPACE CENTER  
B-2 Test Stand  
BUILDING 4221  
MISSISSIPPI 39529  
OHC PROJECT NO. 140063-ALH

Sample #	Analyte	Total ( $\mu\text{g}$ )	Minimum Reporting Limit ( $\mu\text{g}$ )
ST-87	Silver	ND	250
	Arsenic	ND	500
	Barium	ND	25000
	Cadmium	ND	100
	Chromium	2900	250
	Mercury	23	1.1
	Lead	480,000	6200
	Selenium	ND	250

---

## 7.0 SAMPLING METHODS

### 7.1 Asbestos Sampling Protocol

The surveyor conducted a visual inspection of every accessible room, pipe chase, and shaft of the building and identified homogeneous areas based on the texture, appearance, use, and age of suspect ACM.

The surveyor collected bulk samples of all friable and non-friable suspect ACM. The surveyor collected a representative number of samples from each homogeneous area following the EPA's simplified random sampling method (EPA560/585-030a). The surveyor followed good Industrial Hygiene practices when collecting bulk samples in order to minimize fiber release. The surveyor took every precaution required to prevent asbestos exposure to himself, the building occupants and the public.

The surveyor logged all sample locations with the description of each sample location and marked the sample locations on any available drawings. The surveyor identified each area using a unique sequential numbering system.

The surveyor placed each bulk sample in a labeled bag and immediately marked the bag with a sample number.

The surveyor submitted a chain of custody form with each sample group submitted for analysis. The form was signed by laboratory personnel handling the sample(s) and returned with the sample results.

Schneider Laboratories Global, a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory, analyzed the samples for asbestos content.

### 7.2 Lead Sampling Protocol

Lead paint chip samples were taken by (b)(6) an EPA certified Lead Based Paint Risk Assessor, on a representative amount of elements throughout the B-2 Test Stand. Paint samples were submitted to Schneider Laboratories, an AIHA Environmental Lead Laboratory Accreditation Program (ELLAP) accredited laboratory for analysis.

## 7.0 DOCUMENT CONTENT

Consultation has been provided as stated in the Scope of Work for renovation of the structure.

The knowledge of the consultant is based upon current information and research. If local knowledge indicates error, omissions, or inaccuracy, please notify the consultant.

## 8.0 DOCUMENT USE

This document and all attachments provided are for the exclusive use of Harry Pepper and Associates.

**SECTION 9.0**  
**LABORATORY ANALYTICAL DATA**



**EMSL Analytical, Inc.**

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EMSL Order (b)(4)  
CustomerID OCCU58  
CustomerPO  
ProjectID

Attn: (b)(6)  
**OHC Environmental Engineering, Inc.**  
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Project 140063 Stennis  
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Fax: (813) 623-6702  
Received: 03/24/14 8:49 AM  
Analysis Date 3/26/2014  
Collected 3/21/2014

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
ST-A-1A 341402406-0001	on E. Side of Softcore - 18 Flashing	Various Fibrous Heterogeneous	5% Synthetic	95% Non-fibrous (other)	None Detected
Further TEM analysis recommended					
ST-A-1B 341402406-0002	on E. Side of Softcore - 18 Flashing	Various Non-Fibrous Heterogeneous	3% Synthetic	97% Non-fibrous (other)	None Detected
Further TEM analysis recommended					
ST-A-1C 341402406-0003	on S. Side of Softcore - 13 Flashing				Not Submitted
ST-A-2A 341402406-0004	Around Door on E. Side - 16 Caulking	Gray/Rust Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
Inseparable joint coating, synthetic, in analysis					
ST-A-3A 341402406-0005	on Top of Corvette - 16 Coating	Various Non-Fibrous Heterogeneous		20% Quartz 80% Non-fibrous (other)	None Detected
ST-A-3B 341402406-0006	on Top of Corvette - 16 Coating	Various Non-Fibrous Heterogeneous		20% Quartz 80% Non-fibrous (other)	None Detected
ST-A-3C 341402406-0007	on Top of Corvette - 16 Coating	Various Non-Fibrous Heterogeneous		25% Quartz 75% Non-fibrous (other)	None Detected
ST-A-4A 341402406-0008	Under Door Stop on E. Side - 16 Caulking	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
Bag label un-usable					

Analyst(s) (b)(6)  
(b)(6) Asbestos Lab Manager or other approved signatory

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Initial report from 03/27/2014 07:05:39

Test Report PLM-7 28.9 Printed 3/27/2014 7:05:39 AM 1





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CustomerPO:  
ProjectID:

Attr: (b)(6)  
**OHC Environmental Engineering, Inc.**  
5420 Bay Center Drive  
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Tampa, FL 33609  
Phone: (813) 626-8156  
Fax: (813) 623-6702  
Received: 03/24/14 8:49 AM  
Analysis Date: 3/26/2014  
Collected: 3/21/2014  
Project: 140063 Stennis

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
ST-A-5A-Insulation 341402406-0009	on Top of Corvette - 16 Black Foam Pipe Insulation	Black Non-Fibrous Homogeneous		95% Perlite 5% Non-fibrous (other)	None Detected
ST-A-5A-Mastic 311402406-0029A	on Top of Corvette - 16 Black Foam Pipe Insulation	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
ST-A-6A-Wrap 341402406-0010	on End of Pipe E of Softcore - 11 Gasket	White/Silver/Rust Fibrous Heterogeneous	40% Cellulose 15% Glass	45% Non-fibrous (other)	None Detected
ST-A-6A-Insulation 341402406-0010A	on End of Pipe E of Softcore - 11 Gasket	Yellow Fibrous Homogeneous	98% Glass	2% Non-fibrous (other)	None Detected
ST-A-7A-Mastic 341402406-0011	- 11 White Wrapping on Foam Insulation	White/Rust Non-Fibrous Homogeneous	5% Wollastonite	95% Non-fibrous (other)	None Detected
ST-A-7A-Insulation 341402406-0011A	- 11 White Wrapping on Foam Insulation	Yellow Fibrous Homogeneous	98% Glass	2% Non-fibrous (other)	None Detected
ST-A-8A 341402406-0012	Ground Level on Hydrogen Vent Line - Caulking	Gray/Rust Fibrous Homogeneous	5% Wollastonite 2% Glass	93% Non-fibrous (other)	None Detected
ST-A-8B 341402406-0013	Ground Level on Hydrogen Vent Line - Caulking	Gray/Rust Fibrous Homogeneous	2% Glass 5% Wollastonite	93% Non-fibrous (other)	None Detected

Analyst(s)

(b)(6)

(b)(6)

(b)(6) Asbestos Lab Manager or other approved signatory

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Initial report from 03/27/2014 07:05:39

Test Report PLM-7.28.9 Printed: 3/27/2014 7:05:39 AM



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EMSL Order: (b)(6)  
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 CustomerPO:  
 ProjectID:

Attn: (b)(6)  
**OHC Environmental Engineering, Inc.**  
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**Suite 100**  
**Tampa, FL 33609**

Phone: (813) 626-8156  
 Fax: (813) 623-6702  
 Received: 03/24/14 8:49 AM  
 Analysis Date: 3/28/2014  
 Collected: 3/21/2014

Project: 140063 Stennis

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
ST-A-8C 341402406-0014	Ground Level on Hydrogen Vent Line - Caulking	Gray Fibrous Homogeneous	5% Wollastonite	95% Non-fibrous (other)	None Detected
ST-A-9A 341402406-0015	Ground Level on Hydrogen Vent Line - Insulation	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
ST-A-9B-Gray Insulation 341402406-0016	Ground Level on Hydrogen Vent Line - Insulation	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
ST-A-9B-Yellow Insulation 341402406-0016A	Ground Level on Hydrogen Vent Line - Insulation	White/Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
ST-A-9C 341402406-0017	Ground Level on Hydrogen Vent Line - Insulation	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
ST-A-10A 341402406-1018	on Corrugated Metal Wall - Caulking	Gray/Rust Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
ST-A-11A 341402403-0019	Dock Level on Stainless Steel Pipe - Elbow Insulation				Not Submitted

Not comparable due to caulking layer included in analysis

Extra sample labeled ST-A-5B submitted

Analyst(s): (b)(6)

(b)(6) Asbestos Lab Manager or other approved signatory

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Sample analyzed by EMSL Analytical, Inc. Orlando, FL NVLAP Lab Code 101161-D

Initial report from 03/27/2014 07:05:39





EMSL Analytical, Inc.  
210 Route 100 North, Gladstone, NJ 08037

Attn: (b)(6)

3/28/2014

**OHC Environmental Engineering, Inc.**  
**5420 Bay Center Drive**  
**Suite 100**  
**Tampa, FL 33609**  
Phone: (813) 626-8156  
Fax: (813) 623-6702

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 3/25/2014. The results are tabulated on the attached data pages for the following client designated project:

**140063 Stennis**

The reference number for these samples is EMSL Order (b)(6). Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (b)(6).

Reviewed and Approved By:

(b)(6)

(b)(6) Laboratory Director



The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.  
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.





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Attn: **15761**

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**5420 Bay Center Drive**  
**Suite 100**  
**Tampa, FL 33609**

Phone: (813) 828-8156

Fax: (813) 823-8702

Received: 03/25/14 1:30 AM

Project: 140063 Stannis

**Analytical Results**

Client Sample Description		ST-PCB-1	Collected:	Lab ID:	0001			
16 Caulking on door on E. side of soffcore								
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1221	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1232	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1242	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1248	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1254	2.6	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1260	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1262	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL
3540C/8082A	Aroclor-1268	ND	0.28	mg/Kg	3/25/2014	RS	3/27/2014	TL

  

Client Sample Description		ST-PCB-3	Collected:	Lab ID:	0003			
16 Soffcore wall E. side								
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1221	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1232	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1242	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1248	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1254	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1260	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1262	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1268	ND	0.88	mg/Kg	3/25/2014	RS	3/28/2014	TL

  

Client Sample Description		ST-PCB-4	Collected:	Lab ID:	0004			
17 Paint on support beam								
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1221	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1232	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1242	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1248	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1254	1.2	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1260	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1262	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL
3540C/8082A	Aroclor-1268	ND	0.97	mg/Kg	3/25/2014	RS	3/28/2014	TL



**EMSL Analytical, Inc.**

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Attn: (b)(6)  
**OHC Environmental Engineering, Inc.**  
**5420 Bay Center Drive**  
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**Tampa, FL 33609**

Phone: (813) 626-8153  
 Fax: (813) 623-8702  
 Received: 03/25/14 9:30 AM

Project: 140063 Stennis

**Analytical Results**

Client Sample Description		ST-PCB-5	Collected:	Lab ID:	0005			
							17 Coating on top of corvette	
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1221	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1232	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1242	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1248	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1254	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1260	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1262	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1268	ND	0.68	mg/Kg	3/26/2014	AB	3/27/2014	TL

  

Client Sample Description		ST-PCB-6	Collected:	Lab ID:	0006			
							16 caulking just below door stop E. side	
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1221	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1232	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1242	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1248	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1254	3.3	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1260	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1262	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL
3540C/8082A	Aroclor-1268	ND	0.28	mg/Kg	3/26/2014	AB	3/27/2014	TL

  

Client Sample Description		ST-PCB-8	Collected:	Lab ID:	0008			
							Structure under flame bucket	
Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
3540C/8082A	Aroclor-1016	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1221	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1232	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1242	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1248	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1254	16000	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1260	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1262	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL
3540C/8082A	Aroclor-1268	ND	1400	mg/Kg	3/26/2014	AB	3/28/2014	TL





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EMSL Order:  
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ProjectID:

**WASTEW**  
OCCU56

**Definitions:**

ND - indicates that the analyte was not detected at the reporting limit  
RL - Reporting Limit



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Collected: 3/21/2014

Project: 140063 Stennis

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID	Analyzed	RDL	Lead Concentration	Notes
0001	3/28/2014	0.012 % wt	4.2 % wt	Site: 18 Handrail White Collected: 3/21/2014
<i>Client Sample ST-2</i>				
0002	3/28/2014	0.010 % wt	0.024 % wt	Site: 18 Stairs White Collected: 3/21/2014
<i>Client Sample ST-3</i>				
0003	3/28/2014	0.010 % wt	0.12 % wt	Site: 18 Stairs White Collected: 3/21/2014
<i>Client Sample ST-4</i>				
0004	3/28/2014	0.010 % wt	0.036 % wt	Site: 18 South Side Softcore Wall Pink Collected: 3/21/2014
<i>Client Sample ST-6</i>				
0005	3/28/2014	0.010 % wt	0.048 % wt	Site: 18 West Side Softcore Pink Collected: 3/21/2014
<i>Client Sample ST-7</i>				
0006	3/28/2014	0.078 % wt	0.56 % wt	Site: 18 East Side Paint on Flashing of Softcore Grey Collected: 3/21/2014
<i>Client Sample ST-8</i>				
0007	3/28/2014	0.010 % wt	0.27 % wt	Site: 18 East Side Paint on Flashing of Softcore Grey Collected: 3/21/2014
<i>Client Sample ST-9</i>				
0008	3/28/2014	0.010 % wt	0.29 % wt	Site: 18 East Side Softcore Wall Grey Collected: 3/21/2014
<i>Client Sample ST-10</i>				
0009	3/28/2014	0.010 % wt	19 % wt	Site: 18 E. Side Paint on I-beam Grey Collected: 3/21/2014
<i>Client Sample ST-11</i>				
0010	3/28/2014	0.010 % wt	2.8 % wt	Site: 17 E. Side Paint on I-beam Grey Collected: 3/21/2014
<i>Client Sample ST-12</i>				
0011	3/28/2014	0.010 % wt	0.066 % wt	Site: 17 E. Side Softcore Paint on Door Grey Collected: 3/21/2014
<i>Client Sample ST-13</i>				

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\*Analysis following Lead in Paint by EMSL SOP/Determination of Elemental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample or test contamination. Samples received in good condition unless otherwise noted. \*No modifications to methods applied (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the FLAA LAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AIA-LAP, LLC-ELLAP Accredited #103303

Initial report from 03/26/2014 19:41:08





**EMSL Analytical, Inc.**

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ProjectID:

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Project: 140063 Stennis

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID	Analyzed	RDL	Lead Concentration	Notes
0012	3/26/2014	0.010 % wt	0.014 % wt	Site: 16 S. Side White Paint on Softcore White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-18</i>				
0013	3/26/2014	0.010 % wt	<0.010 % wt	Site: 16 S. Side Blue Paint on Softcore Wall Blue <i>Collected: 3/21/2014</i>
<i>Client Sample ST-19</i>				
0014	3/26/2014	0.014 % wt	0.28 % wt	Site: 16 Railing White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-20</i>				
0015	3/26/2014	0.010 % wt	3.4 % wt	Site: 11 E. Side Softcore P1-3801 Pipe Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-21</i>				
0016	3/26/2014	0.012 % wt	0.30 % wt	Site: 11 Base Column of Corvette <i>Collected: 3/21/2014</i>
<i>Client Sample ST-23</i>				
0017	3/26/2014	0.010 % wt	1.7 % wt	Site: 11 10" Vertical Pipe Part of Deluge System <i>Collected: 3/21/2014</i>
<i>Client Sample ST-24</i>				
0018	3/26/2014	0.010 % wt	27 % wt	Site: 11 VA SJ01HA 2 1/2" Pipe on Softcore <i>Collected: 3/21/2014</i>
<i>Client Sample ST-25</i>				
0019	3/26/2014	0.011 % wt	0.13 % wt	Site: 11 3" Helium Pipe <i>Collected: 3/21/2014</i>
<i>Client Sample ST-26</i>				
0020	3/26/2014	0.012 % wt	0.13 % wt	Site: 11 Base Column of Corvette <i>Collected: 3/21/2014</i>
<i>Client Sample ST-27</i>				
0021	3/26/2014	0.011 % wt	0.96 % wt	Site: 11 Railing White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-28</i>				
0022	3/26/2014	0.010 % wt	2.2 % wt	Site: 11 Vertical Fire Line White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-29</i>				
0023	3/26/2014	0.010 % wt	29 % wt	Site: Ground Deluge Water System Pipe Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-30</i>				

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\*All tests following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAAS. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Sample received in good condition unless otherwise noted. \* slight modifications to methods applied (as noted) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with this sample results included in this report meet the recovery and precision requirements established by the AHA-LAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AHA-LAP LLC-ELLAP A. Accredited #163503

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**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID:	Analyzed	RDL	Lead Concentration	Notes
0024	3/26/2014	0.010 % wt	41 % wt	Site: Ground Deluge Water System Pipe Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-31</i>				
0025	3/26/2014	0.010 % wt	0.015 % wt	Site: Ground Bolt Angle Support under Flame Bucket Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-32</i>				
0026	3/26/2014	0.010 % wt	0.088 % wt	Site: Ground Bolt under Flame Bucket Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-34</i>				
0027	3/26/2014	0.010 % wt	1.7 % wt	Site: Ground under Flame Bucket Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-35</i>				
0028	3/26/2014	0.010 % wt	0.21 % wt	Site: Ground Bolts under Flame Bucket Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-37</i>				
0029	3/26/2014	0.010 % wt	0.028 % wt	Site: Ground Elevated First Base Plate under Flame Bucke <i>Collected: 3/21/2014</i>
<i>Client Sample ST-38</i>				
0030	3/26/2014	0.010 % wt	4.7 % wt	Site: Elevated First Level Deluge Water System Pipe SE B <i>Collected: 3/21/2014</i>
<i>Client Sample ST-39</i>				
0031	3/26/2014	0.014 % wt	0.070 % wt	Site: Elevated First Level Vertical Deluge Water System S <i>Collected: 3/21/2014</i>
<i>Client Sample ST-40</i>				
0032	3/26/2014	0.010 % wt	2.1 % wt	Site: 11 Deck of Battleship Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-41</i>				
0033	3/26/2014	0.013 % wt	4.7 % wt	Site: 11 VA3K67W Deluge Water System SE Top of Battleship <i>Collected: 3/21/2014</i>
<i>Client Sample ST-42</i>				
0034	3/26/2014	0.011 % wt	2.3 % wt	Site: 11 I-beam Structure on Top of Battleship Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-43</i>				

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\*The following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA Reporting level is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not black corner cut. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. \* Slight modifications to methods apply if < (less than) result signifies that the analyte was not detected #1 or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AHA-LAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AHA-LAP, LLC-ELLAP A. J. Jedicke #163563

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**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab#	Analyzed	RDI	Lead Concentration	Notes
0035	3/26/2014	0.020 % wt	0.33 % wt	Site: 11 Railing on Top of Battleship Beige <i>Client Sample</i> ST-44 <i>Collected:</i> 3/21/2014
0036	3/26/2014	0.010 % wt	0.070 % wt	Site: 11 I-beam Structure on Top of Battleship Beige <i>Client Sample</i> ST-45 <i>Collected:</i> 3/21/2014
0037	3/26/2014	0.010 % wt	0.20 % wt	Site: 11 Floor on Top of Battleship Grey <i>Client Sample</i> ST-46 <i>Collected:</i> 3/21/2014
0038	3/26/2014	0.010 % wt	0.063 % wt	Site: 11 Floor on Top of Battleship Grey <i>Client Sample</i> ST-47 <i>Collected:</i> 3/21/2014
0039	3/26/2014	0.010 % wt	0.010 % wt	Site: Ground Bottom of Flame Bucket Grey <i>Client Sample</i> ST-48 <i>Collected:</i> 3/21/2014
0040	3/26/2014	0.010 % wt	0.053 % wt	Site: Ground Bottom of Flame Bucket Grey <i>Client Sample</i> ST-49 <i>Collected:</i> 3/21/2014
0041	3/26/2014	0.017 % wt	0.52 % wt	Site: Ground Inside of Flame Bucket Yellow <i>Client Sample</i> ST-51 <i>Collected:</i> 3/21/2014
0042	3/26/2014	0.015 % wt	3.6 % wt	Site: 2 Support I-beam for Deluge System Grey <i>Client Sample</i> ST-52 <i>Collected:</i> 3/21/2014
0043	3/26/2014	0.012 % wt	6.4 % wt	Site: 2 Support I-beam for Deluge System Grey <i>Client Sample</i> ST-53 <i>Collected:</i> 3/21/2014
0044	3/26/2014	0.018 % wt	35 % wt	Site: 3 Bay 3 Deluge Pipe Support Box Grey <i>Client Sample</i> ST-54 <i>Collected:</i> 3/21/2014

(b)(6)

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\*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. See file(s) included in report for additional details. If slight modifications to methods appear < (less than) result significant that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the FLA-LAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AIMA-LAP, LLC-ELLAP Accredited #163563

Initial report from 03/26/2014 19:41:08



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Project: 140063 Stennis

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID	Analyzed	RDL	Lead Concentration	Notes
0045	3/26/2014	0.010 % wt	24 % wt	Site: 3 Bay 2 Deluge Pipe Support Box Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-55</i>				
0046	3/26/2014	0.033 % wt	0.058 % wt	Site: 3 Bay 3 Support I-beam Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-56</i>				
0047	3/26/2014	0.010 % wt	0.12 % wt	Site: 3 Bay 2 Support I-beam Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-59</i>				
0048	3/26/2014	0.010 % wt	0.074 % wt	Site: 11 Support Hangers for Firex and Helum Pipes S Si <i>Collected: 3/21/2014</i>
<i>Client Sample ST-80</i>				
0049	3/26/2014	0.010 % wt	0.33 % wt	Site: 11 Support Hangers for Firex Pipes S Side Pink <i>Collected: 3/21/2014</i>
<i>Client Sample ST-81</i>				
0050	3/26/2014	0.010 % wt	1.5 % wt	Site: 11 Support Hangers for Firex Pipes E Side Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-82</i>				
0051	3/26/2014	0.015 % wt	0.23 % wt	Site: 11 Support Hangers for Firex System Small Pipes Gr <i>Collected: 3/21/2014</i>
<i>Client Sample ST-83</i>				
0052	3/26/2014	0.021 % wt	0.52 % wt	Site: 11 Support Hangers for Firex System Grey <i>Collected: 3/21/2014</i>
<i>Client Sample ST-84</i>				
0053	3/26/2014	0.015 % wt	0.33 % wt	Site: Ground Main Deluge Pipe Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-85</i>				
0054	3/26/2014	0.010 % wt	5.2 % wt	Site: Ground Support for Deluge System Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-87</i>				
0055	3/26/2014	0.010 % wt	0.088 % wt	Site: 18 Exterior Wall of Corvette White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-88</i>				

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**(b)(6)** Ph.D., Laboratory Manager  
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\*Analytes following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. \*Slight modifications to methods applied <1% (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.  
 Samples analyzed by EMSL Analytical, Inc., Orlando, FL AIHA-LAP, LLC-ELAP Accredited 14163963

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Project: 140063 Stennis

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID:	Analyzed	RDI:	Lead Concentration	Notes
0056	3/26/2014	0.010 % wt	8.8 % wt	Site: 16 Interior Wall of Corvette White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-71</i>				
0057	3/26/2014	0.016 % wt	4.4 % wt	Site: 16 Fire Suppression System White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-73</i>				
0058	3/26/2014	0.057 % wt	0.36 % wt	Site: 1 Nitrogen Line White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-73A</i>				
0059	3/26/2014	0.010 % wt	0.42 % wt	Site: 1 Helium Line White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-74</i>				
0060	3/26/2014	0.025 % wt	24 % wt	Site: 1 Air Line White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-75</i>				
0061	3/26/2014	0.028 % wt	0.12 % wt	Site: 1 Hydrogen GH White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-76</i>				
0062	3/26/2014	0.028 % wt	0.066 % wt	Site: 1 Helium HE White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-77</i>				
0063	3/26/2014	0.025 % wt	2.0 % wt	Site: 1 Support Beam for Pipes White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-78</i>				
0064	3/26/2014	0.010 % wt	37 % wt	Site: Ground E. Pier Stair Railing Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-79</i>				
0065	3/26/2014	0.020 % wt	56 % wt	Site: Ground E. Pier Stair Kick Plate Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-80</i>				
0066	3/26/2014	0.010 % wt	35 % wt	Site: Ground E. Pier Stair Post Beige <i>Collected: 3/21/2014</i>
<i>Client Sample ST-81</i>				
0067	3/26/2014	0.012 % wt	9.7 % wt	Site: Ground Dock Support Beam White <i>Collected: 3/21/2014</i>
<i>Client Sample ST-82</i>				

(b)(6)

(b)(6) Ph.D., Laboratory Manager  
or other approved signatory

\*Analyses following Lead in Paint by EMSL SOP (Determination of Environmental Lead by FLAA). Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection or storage. Samples received in good condition unless otherwise noted. Single analytical runs to methods applied. <= Detection result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the NELAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AHA-LAP, LLC-ELLAP Accredited #183963

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**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID:	Analyzed	RDL	Lead Concentration	Notes
0068	3/26/2014	0.017 % wt	7.2 % wt	Site: Ground Dock Support Beam White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-83				
0069	3/26/2014	0.010 % wt	44 % wt	Site: 3 E. Pier Star Post Beige <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-84				
0070	3/26/2014	0.010 % wt	29 % wt	Site: 3 E. Pier Star Railing Beige <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-85				
0071	3/26/2014	0.013 % wt	12 % wt	Site: 3 E. Pier Star Plate Beige <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-86				
0072	3/26/2014	0.010 % wt	13 % wt	Site: 18 Stair Railing White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-88				
0073	3/26/2014	0.010 % wt	2.2 % wt	Site: 18 Stair Kick Plate White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-89				
0074	3/26/2014	0.021 % wt	0.29 % wt	Site: 16 E. Side Stair Railing White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-90				
0075	3/26/2014	0.041 % wt	0.76 % wt	Site: 16 E. Side Stair Post White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-91				
0076	3/26/2014	0.046 % wt	3.0 % wt	Site: 16 E. Side Kick Plate White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-92				
0077	3/26/2014	0.010 % wt	1.1 % wt	Site: 11 S. Side Stair Railing White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-93				
0078	3/26/2014	0.010 % wt	1.1 % wt	Site: 11 S. Side Stair Kick Plate White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-94				
0079	3/26/2014	0.010 % wt	2.2 % wt	Site: 11 S. Side Stair Post White <i>Collected:</i> 3/21/2014
<i>Client Sample</i> ST-95				

**(b)(6)**

**151761** Ph.D., Laboratory Manager  
or other approved signatory

\*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in need of attention unless otherwise noted. \* slight modifications to methods applied if (b) (6) in 9.1.1 signifies that the analyte was not detected at or above the reporting limit. Method name, if of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.  
Samples analyzed by EMSL Analytical, Inc. Orlando, FL AIHA-LAP LLC-ELLAP Accredited #163503

Initial report from 03/26/2014 19:41:08





**EMSL Analytical, Inc.**

6125 Adanson Street, Suite 900, Orlando, FL 32804  
Phone/Fax: (407) 598-5987 / (407) 599-7063  
<http://www.EMSL.com> [orlandolab@emsl.com](mailto:orlandolab@emsl.com)

EMSL Order: (b)(6)  
CustomerID: OCCU56  
CustomerPO:  
ProjectID:

Attn: (b)(6)  
**OHC Environmental Engineering, Inc.**  
5420 Bay Center Drive  
Suite 100  
Tampa, FL 33609  
Phone: (813) 626-8156  
Fax: (813) 623-6702  
Received: 03/24/14 2:30 PM  
Collected: 3/21/2014  
Project: 140063 Stennis

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

Lab ID	Anal. Date	RDL	Lead Concentration	Notes
0080	3/28/2014	0.029 % wt	2.7 % wt	Site: 9 Walkway S. Side of Battleship - Railing White Collected: 3/21/2014
<i>Client Sample ST-96</i>				
0081	3/26/2014	0.020 % wt	0.95 % wt	Site: 9 Walkway S. Side of Battleship - Post White Collected: 3/21/2014
<i>Client Sample ST-97</i>				
0082	3/28/2014	0.010 % wt	1.4 % wt	Site: 9 Walkway S. Side of Battleship - Kick Plate White Collected: 3/21/2014
<i>Client Sample ST-98</i>				

Data reported may not reach applicable analytical sensitivity due to insufficient sample weights submitted. Suggested weight for analysis is 0.2 g

(b)(6)

(b)(6) Ph.D., Laboratory Manager  
or other approved signatory

\*Analysis for Lead in Paint by EMSL SOP: Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the maximum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. Any modifications to methods applied are less than result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AHA-LAP, unless specifically indicated otherwise.  
Sample analyzed by EMSL Analytical, Inc. Orlando, FL AHA-LAP, LLC-ELLAP Accredited #193723

Initial report from 03/26/2014 19:41:08

