



October 18, 2019

City of Georgetown
1134 North Fraser Street
Georgetown, South Carolina 29440

Attn: Mr. Orlando Arteaga, P.E.
City Engineer
E: oarteaga@cogsc.com

Re: **Report for Lead Paint Testing**
Port Tank Rehabilitation Project
Georgetown, South Carolina
Terracon Project No. EN197345

Dear Mr. Arteaga:

Terracon Consultants, Inc. (Terracon) is pleased to present the results of the limited lead-based paint (LBP) testing performed on September 24, 2019 in support of the Port Tank rehabilitation project in Georgetown, South Carolina. Our services were performed in general accordance with our Proposal No. PEN197345.

Regulatory Overview

Lead is regulated by the EPA, SCDHEC and OSHA. The EPA and SCDHEC regulate lead use, removal, and disposal, and OSHA regulates lead exposure to workers. The EPA defines LBP as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 mg/cm², 5,000 mg/kg, or 0.5% by dry weight as determined by laboratory analysis. The SCDHEC regulations 61-107.19 require that painted demolition debris with a lead concentration greater than 0.06% by weight be disposed in a permitted Class II landfill. However, coatings that are delaminated, deteriorated, flaking, or removed must be evaluated against the Toxicity Characteristic under state and federal hazardous waste management regulations. Lead-based paint is defined in SC Regulation 61-107.9, "Solid Waste Landfills and Structural Fill." The hazardous waste Toxicity Characteristic is defined in the SC Hazardous Waste Management Regulation 61-79, at § 261.24, "Toxicity Characteristic."

For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The complete OSHA standard for compliance can be found on OSHA's website (www.osha.gov). A synopsis of the OSHA regulations (29 CFR 1926.62) and the applicability are as follows:

Terracon Consultants, Inc. 1450 Fifth Street, West North Charleston, South Carolina 29405
P (843) 884 1234 F (843) 884 9234 terracon.com

Limited Lead Paint Testing Report

City of Georgetown Port Tank ■ Georgetown, South Carolina
October 18, 2019 ■ Terracon Project No. EN187345



The OSHA *Lead Standard for Construction* (29 CFR 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration, or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead,
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead,
- Installation of products containing lead,
- Lead contamination/emergency clean-up,
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed,
- Maintenance operations associated with construction activities described above

Sampling and Analytical Protocol

Mr. Langford and Andrew Mitroka of Terracon conducted the lead-based paint (LBP) sampling on September 24, 2019. The LBP sampling was conducted by collecting representative paint chip samples from painted or lacquered surfaces of structure components likely to contain LBP, based on apparent date of application. Samples were collected down to the surface substrate so as to include any underlying paint systems in the analysis. The samples were selected based on current paint schemes and may not be inclusive of old paint systems covered with paneling, or existing painted systems. The paint chip samples were submitted to an ELAP approved laboratory for analysis of lead by NIOSH Method 7082M (atomic absorption).

Findings

The 500,000-gallon water tank was erected in 1973 and has been re-painted several times throughout the years. The City intends to rehabilitate the steel tank and all its metal accessories by sandblasting to the bare surface. Eighteen (18) paint-chip samples were collected from the components of the Port Tank structure on the site. One paint sample (Pb-17) collected from the ladder contained a lead concentration above the EPA 0.5% by weight threshold. All other paint chip samples were above the SCDHEC 0.06% by weight threshold with the exception of the interior hatch white paint (Pb-18). The table below summarizes the sample locations and laboratory results. Laboratory results are attached.



Limited Lead Paint Testing Report

City of Georgetown Port Tank ■ Georgetown, South Carolina

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Table 1 – Summary of Lead in Paint Results

Sample Number	Description	Location	Lead Result	EPA Lead	SCDHEC Lead
				0.5%	0.06%
Pb-01	Orange Paint	Tank Leg 1	0.26 %	No	Yes
Pb-02	Orange Paint	Tank Leg 2	0.40 %	No	Yes
Pb-03	Orange Paint	Tank Leg 3	0.45 %	No	Yes
Pb-04	Orange Paint	Tank Leg 4	0.31 %	No	Yes
Pb-05	Orange Paint	Tank Leg 5	0.28 %	No	Yes
PB-06	Orange Paint	Tank Leg 6	0.21 %	No	Yes
Pb-07	Orange Paint	Water Uptake	0.33 %	No	Yes
Pb-08	Orange Paint	Concrete Pad at Water Uptake	0.18 %	No	Yes
Pb-09	Orange Paint	Exterior Upper Tank	0.33 %	No	Yes
Pb-10	Orange Paint	Exterior Upper Tank	0.23 %	No	Yes
Pb-11	Orange Paint	Exterior Upper Tank	0.19 %	No	Yes
Pb-12	Orange Paint	Exterior Upper Tank	0.20 %	No	Yes
Pb-13	Orange Paint	Exterior Upper Tank	0.16 %	No	Yes
Pb-14	Orange Paint	Exterior Upper Tank	0.14 %	No	Yes
Pb-16	Orange Paint	Exterior Upper Tank	0.23 %	No	Yes
Pb-17	Orange Paint	Ladder at Upper Platform	0.61 %	Yes	Yes
Pb-18	White Paint	Interior of Top Hatch	<0.0084 %	No	No

There is no sample Pb-15

Recommendations

It is our understanding the City of Georgetown intends to sandblast the port tank to the substrate. Terracon recommends full enclosure of the tank during the sandblasting process and the collection of all debris for testing by the Toxicity Characteristic Leachate Procedure (TCLP) prior to disposal. It may be prudent to perform perimeter air monitoring during the sandblasting operations to insure the integrity of the containment. Workers performing the removal must comply with OSHA's Lead in Construction Standard, 29 CFR 1926.62.

Accumulations of paint waste (chips, dust, flakes, etc.) must be properly evaluated for compliance with the hazardous waste determination requirements of the SC Hazardous Waste Management Regulation for the Toxicity Characteristic, found at SC R. 61-79.261.24. Similarly, waste generated from any abatement activities, as well as other materials contaminated from the abatement activities, must also be evaluated in terms of the hazardous waste Toxicity Characteristic. If the material is classified as a hazardous material, the material shall be disposed of in a Subtitle C (hazardous waste) landfill.

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City of Georgetown Port Tank ■ Georgetown, South Carolina
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Limitations

This survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during our survey of the building. This letter report has been prepared on behalf of and exclusively for use and reliance by the Client. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date.

This report has been prepared on behalf of and exclusively for use by City of Georgetown for specific application to their project as discussed. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information, which may have been used in the preparation of this report. No warranty, express or implied is made.

Terracon appreciates the opportunity to provide this service to City of Georgetown. If you have any questions regarding this report, please contact the undersigned at (843) 277-8402.

Sincerely,
Terracon Consultants, Inc.

Craig C. Langford, OHST
Senior Industrial Hygienist

For
Jeffrey A. Gurrie, CIH
Authorized Project Reviewer

Attachments: Laboratory Results



EMSL Analytical, Inc.

706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
<http://www.EMSL.com> greensborolab@emsl.com

EMSL Order: 021906598
CustomerID: WPCE62
CustomerPO: EN197345
ProjectID:

Attn: **Craig Langford**
Terracon, Inc.
1450 Fifth Street West
North Charleston, SC 29405

Phone: (843) 884-1234
Fax: (843) 884-9234
Received: 09/25/19 1:00 PM
Collected: 9/24/2019

Project: **EN197345 / Port Water Tank**

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
Pb-01	021906598-0001	9/24/2019	9/26/2019	.2639 g	0.26 % wt
Site: Tank Leg 1					
Pb-02	021906598-0002	9/24/2019	9/26/2019	.258 g	0.40 % wt
Site: Tank Leg 2					
Pb-03	021906598-0003	9/24/2019	9/26/2019	.3008 g	0.45 % wt
Site: Tank Leg 3					
Pb-04	021906598-0004	9/24/2019	9/26/2019	.3023 g	0.31 % wt
Site: Tank Leg 4					
Pb-05	021906598-0005	9/24/2019	9/26/2019	.2884 g	0.28 % wt
Site: Tank Leg 5					
Pb-06	021906598-0006	9/24/2019	9/26/2019	.3339 g	0.21 % wt
Site: Tank Leg 6					
Pb-07	021906598-0007	9/24/2019	9/26/2019	.2792 g	0.33 % wt
Site: Water Uptake					
Pb-08	021906598-0008	9/24/2019	9/26/2019	.2645 g	0.18 % wt
Site: Concrete Pad					
Pb-09	021906598-0009	9/24/2019	9/26/2019	.3174 g	0.33 % wt
Site: Exterior Upper Water Tank					
Pb-10	021906598-0010	9/24/2019	9/26/2019	.266 g	0.23 % wt
Site: Exterior Upper Water Tank					
Pb-11	021906598-0011	9/24/2019	9/26/2019	.306 g	0.19 % wt
Site: Exterior Upper Water Tank					
Pb-12	021906598-0012	9/24/2019	9/26/2019	.2644 g	0.20 % wt
Site: Exterior Upper Water Tank					
Pb-13	021906598-0013	9/24/2019	9/26/2019	.267 g	0.16 % wt
Site: Exterior Upper Water Tank					
Pb-14	021906598-0014	9/24/2019	9/26/2019	.2663 g	0.14 % wt
Site: Exterior Upper Water Tank					
Pb-16	021906598-0016	9/24/2019	9/26/2019	.2955 g	0.23 % wt
Site: Exterior Upper Water Tank					

James Cole, 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. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (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 unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC EMSL Lab ID 102564 is accredited by the AIHA Laboratory Accreditation Program (AIHA-LAP), LLC in the Environmental Lead accreditation program for Lead in Paint Chips.

Initial report from 09/26/2019 08:19:30



EMSL Analytical, Inc.

706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
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Collected: 9/24/2019

Project: **EN197345 / Port Water Tank**

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
Pb-17	021906598-0017	9/24/2019	9/26/2019	.2678 g	0.61 % wt
Site: Ladder					
Pb-18	021906598-0018	9/24/2019	9/26/2019	.2379 g	<0.0084 % wt
Site: Top Cover Interior White/Blue					

James Cole, 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. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (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 unless specifically indicated otherwise. Definitions of modifications are available upon request.
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Initial report from 09/26/2019 08:19:30



EMSL ANALYTICAL, INC.
LABORATORY-PRODUCTS-TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

6598

EMSL ANALYTICAL, INC.
10801 SOUTHERN LOOP
BLVD
PINEVILLE, NC 28134
704-525-2205

Company : Terracon		EMSL-Bill to: <input type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**		
Street: 1450 Fifth Street West		Third Party Billing requires written authorization from third party		
City: North Charleston	State/Province: SC	Zip/Postal Code: 29405	Country:	
Report To (Name): Craig Langford		Fax #:		
Telephone #: 843.442.6658		Email Address: craig.langford@terracon.com		
Project Name/Number: EN 197345 Part Water Tank				
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email		Purchase Order:	U.S. State Samples Taken:	
Turnaround Time (TAT) Options* - Please Check				
<input type="checkbox"/> 3 Hours	<input type="checkbox"/> 6 Hours	<input checked="" type="checkbox"/> 24 Hours	<input type="checkbox"/> 48 Hours	
<input type="checkbox"/> 3 Days	<input type="checkbox"/> 4 Days	<input type="checkbox"/> 5 Days	<input type="checkbox"/> 10 Days	
<small>*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide</small>				
Matrix	Method	Instrument	Reporting Limit	Check
Chips <input type="checkbox"/> mg/cm ² <input checked="" type="checkbox"/> % by wt.	SW846-7000B/7420 or AOAC 974.02	Flame Atomic Absorption	0.01%	<input checked="" type="checkbox"/>
	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
Air	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300 modified	ICP-AES	0.5 µg/filter	<input type="checkbox"/>
	SW846-7000B/7420	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
Wipe* <input type="checkbox"/> ASTM <input type="checkbox"/> non ASTM <small>*If no box is checked, non-ASTM Wipe is assumed</small>	SW846-6010B or C	ICP-AES	0.5 µg/wipe	<input type="checkbox"/>
	SW846-1311/7420/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
TCLP	SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	<input type="checkbox"/>
	SW846-7420	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
Soil	SW846-7421	Graphite Furnace AA	0.3 mg/kg (ppm)	<input type="checkbox"/>
	SW86-6010B or C	ICP-AES	1 mg/kg (ppm)	<input type="checkbox"/>
	SM3111B or SW846-7000B/7420	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
Wastewater	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-AES	1 mg/kg (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
Drinking Water				
Other:		Preservation Method (Water):		
Name of Sampler:		Signature of Sampler:		
Sample #	Location	Volume/Area	Date/Time Sampled	
Pb-01	Tank Leg 1			
Pb-02	Tank Leg 2			
Pb-03	Tank Leg 3			
Pb-04	Tank Leg 4			
Pb-05	Tank Leg 5			
Pb-06	Tank Leg 6			
Client Sample #'s		Total # of Samples: 18		
Relinquished (Client):	<i>C. Nelson</i>	Date: 9/24/09	Time: 1:30	
Received (Lab):	<i>Kyle Nelson</i>	Date: 9/25/09	Time: 9:20AM Fx	
Comments:		7957 7007 8002		
<i>Jim Glasby 9/25/09 1pm</i>				



EMSL ANALYTICAL, INC.
LABORATORY-PRODUCTS-TRAINING

LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID (Lab Use Only):

6598

EMSL ANALYTICAL, INC.

10801 SOUTHERN LOOP BLVD
PINEVILLE, NC 28134
704-525-2205

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled
Pb-07	Water uptake		
Pb-08	Concrete Pad		
Pb-09	Exterior upper water tank		
Pb-10	↓		
Pb-11			
Pb-12			
Pb-13			
Pb-14			
Pb-15			
Pb-16	↓		
Pb-17	Ladder		
Pb-18	Top Cover Interior white/blue		

Comments/Special Instructions: