



March 18, 2014

Mr. Gregory M. Dorosh, P.E.
Principal Engineer
Environmental Compliance Section
Bureau of Engineering and Highway Operations
State of Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, CT 06131-7546

Attention: Christopher Bonsignore, P.E. / Caswell Smith

Subject: On-Call Asbestos, Lead, Air Quality & Demolition Compliance
Agreement No. 08.24-03(11)
HazMat Inspection - Bridge No. 00696
Lake Avenue over Merritt Parkway (Rte. 15), Greenwich, CT
ConnDOT Assignment No. 504-4816
ConnDOT Project No. 56-309
TRC Project No. 183572.4816.00710

Dear Mr. Dorosh:

TRC performed a limited survey for hazardous building materials associated with the planned rehabilitation of Bridge No. 00696, Lake Avenue over Merritt Parkway (Rte. 15), Greenwich, Connecticut. Results of the survey identified lead based paint (LBP) to be present on the structural steel and decorative metal railing (9.3-15.1 mg/cm²) and concrete bridge abutment and guardrail support surfaces (0.019% by weight). Results obtained from TCLP waste stream sampling and analysis for leachable lead in the paint associated with the structural steel and decorative metal railing, characterized the paint waste stream as EPA RCRA/CTDEEP hazardous waste (280 mg/l). Results obtained from TCLP waste stream sampling and analysis for leachable lead in the paint associated with the concrete abutments/guardrail supports, characterized the paint waste stream as non-hazardous C&D waste (ND<0.013 mg/l). Grey expansion joint caulking and black rubbery vibration dampener strip material were sampled for asbestos content, and were both found to not contain asbestos. No bird guano accumulations were observed in accessible areas of the bridge. Associated laboratory data is attached.

If you have any questions, please call TRC at (860) 298-9692.

Very Truly Yours,

TRC

A handwritten signature in black ink, appearing to read "Erik R. Plimpton".

Erik R. Plimpton, P.E., CHMM
Program Manager

A handwritten signature in black ink, appearing to read "E. Burke".

E. Burke, P.E.
Engineer in Charge



Lead Based Paint Measurement Summary Table

Device(s): Niton XLP301-A (Serial #24792) X Ray Fluorescence (XRF) Spectrum Analyzer
 Site: Bridge No. 00696, Lake Avenue over Route 15, Greenwich, Connecticut
 Project #: 183572.4816.0710
 Date(s): 10/14/2013
 Inspector: Jonathan Gentile (Lead Inspector CT LIC #002125)

Number	Interior/ Exterior	Location	Bridge No.	Structure	Feature	Material	Color	Condition	Reading (mg/cm2)	Precision (mg/cm2)	Depth Index	Duration (sec)	Date/Time
1									0.0	0.0	1.0	275.4	10/14/2013 10:44
2			Self-Calibration 0.0 calibration						0.3	0.1	1.0	1.6	10/14/2013 10:55
3			0.3 calibration						1.0	0.1	1.1	5.0	10/14/2013 10:56
4			1.0 calibration						1.0	0.1	1.1	13.6	10/14/2013 10:58
5			1.0 calibration						1.0	0.1	1.1	3.3	10/14/2013 10:58
6			1.0 calibration						1.0	0.1	1.1	4.1	10/14/2013 10:59
7			1.6 calibration						1.4	0.1	1.1	5.9	10/14/2013 11:00
8	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Structural steel	Metal	Blue	Defective	14.1	3.9	1.8	2.2	10/14/2013 11:02
9	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Structural steel	Metal	Blue	Defective	15.1	3.3	1.8	3.0	10/14/2013 11:02
10	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Abutment	Concrete	White	Defective	0.0	0.1	6.0	7.8	10/14/2013 11:04
11	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Abutment	Concrete	White	Defective	0.0	0.0	2.2	3.1	10/14/2013 11:05
12	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Decorative railing	Metal	Blue	Defective	9.3	3.2	1.9	2.2	10/14/2013 11:28
13	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Guard rail support	Concrete	White	Defective	0.0	0.1	1.6	1.1	10/14/2013 11:30
14	Exterior	Greenwich	Bridge No. 00696	Bridge super structure	Guard rail support	Concrete	White	Defective	0.0	0.0	1.0	3.3	10/14/2013 11:31
15			0.0 calibration						0.0	0.0	1.0	1.2	10/14/2013 15:32
16			0.3 calibration						0.3	0.1	1.0	4.0	10/14/2013 15:33
17			1.6 calibration						1.5	0.2	1.1	3.5	10/14/2013 15:33

Lead paint includes paint found to contain any detectable amount of lead by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF).

80 Lupes Drive
Stratford, CT 06615



Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com

Client: Erik Plimpton
TRC Environmental Consultants
21 Griffin Rd., North
Windsor, CT 06095

Analytical Report

CET # 3100003

Report Date: October 23, 2013
Project: Greenwich Bridge 00696, Greenwich
Project Number: 183572.4816.0710

Connecticut Laboratory Certificate: PH 0116
Massachusetts laboratory Certificate.: M-CT903
Rhode Island Certification: 199



New York Certification: 11982
Florida Laboratory Certification: E871064

CET #:3100003

Project: Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

SAMPLE SUMMARY

The sample(s) were received at 24.6°C.

This report contains analytical data associated with following samples only.

Sample ID	Laboratory ID	Matrix	Collection Date/Time	Receipt Date
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#1 Greenwich Bridge	3100003-01	Paint Chip	10/14/2013 11:00	10/16/2013
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Analyte: TCLP Lead [EPA 6020A]

Analyst: SS

Matrix: Extract

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
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3100003-01	#1 Greenwich Bridge	280	0.013	mg/L	1	B3J2216	10/22/2013	10/22/2013 15:26	
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CET #:3100003

Project: Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

QUALITY CONTROL SECTION

Batch B3J2216 - EPA 6020A

Analyte	Result (mg/L)	RL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Blank (B3J2216-BLK1)					Prepared: 10/22/2013 Analyzed: 10/22/2013				
Lead	ND	0.013							
LCS (B3J2216-BS1)					Prepared: 10/22/2013 Analyzed: 10/22/2013				
Lead	0.199	0.013	0.200		99.6	80 - 120			

CET #:310003

Project: Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710



80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
email: cet1@cetlabs.com

Quality Control Definitions and Abbreviations

Internal Standard (IS)	An Analyte added to each sample or sample extract. An internal standard is used to monitor retention time, calculate relative response, and quantify analytes of interest.
Surrogate Recovery	The % recovery for non-tarer organic compounds that are spiked into all samples. Used to determine method performance.
Continuing Calibration Batch	An analytical standard analyzed with each set of samples to verify initial calibration of the system. Samples that are analyzed together with the same method, sequence and lot of reagents within the same time period.
ND	Not detected
RL	Reporting Limit
Dilution	Multiplier added to detection levels (MDL) and/or sample results due to interferences and/or high concentration of target compounds.
Duplicate Result	Result from the duplicate analysis of a sample. Amount of analyte found in a sample.
Spike Level	Amount of analyte added to a sample
Matrix Spike Result	Amount of analyte found including amount that was spiked.
Matrix Spike Dup	Amount of analyte foun in duplicate spikes including amount that was spike.
Matrix Spike % Recovery	% Recovery of spiked amount in sample.
Matrix Spike Dup % Recovery	% Recovery of spiked duplicate amount in sample.
RPD	Relative percent difference between Matrix Spike and Matrix Spike Duplicate.
Blank	Method Blank that has been taken through all steps of the analysis.
LCS % Recovery	Laboratory Control Sample percent recovery. The amount of analyte recovered from a fortified sample.
Recovery Limits	A range within which specified measurements results must fall to be compliant.
CC	Calibration Verification

Flags:

- H- Recovery is above the control limits
- L- Recovery is below the control limits
- B- Compound detected in the Blank
- P- RPD of dual column results exceeds 40%
- #- Sample result too high for accurate spike recovery.



Connecticut Laboratory Certification PH0116
Massachussets Laboratory Certification M-CT903
Rhode Island Certification 199

New York Certification 11982
Florida Laboratory Certification E871064

Complete Environmental Testing, Inc.

80 Lupes Drive, Stratford, CT 06615 • Tel: 203-377-9984 • Fax: 203-377-9952 • www.cetlabs.com

CET #:3100003

Project: Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,



David Ditta
Laboratory Director

Report Comments:

ND is None Detected at the specified detection limit

All analyses were performed in house unless a Reference Laboratory is listed.

Samples will be disposed of 30 days after the report date.

Sample Result Flags:

E- The result is estimated, above the calibration range.

H- The surrogate recovery is above the control limits.

L- The surrogate recovery is below the control limits.

B- The compound was detected in the laboratory blank.

P- The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.

D- The RPD between the sample and the sample duplicate is high. Sample Homogeneity may be a problem.

All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

Complete Environmental Testing is only responsible for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt.

80 Lupes Drive
Stratford, CT 06615



Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com

Client: Erik Plimpton
TRC Environmental Consultants
21 Griffin Rd., North
Windsor, CT 06095

Analytical Report

CET # 3100246

Report Date: October 30, 2013
Project: DOT Greenwich Bridge 00696, Greenwich
Project Number: 183572.4816.0710
PO Number: C183572

Connecticut Laboratory Certificate: PH 0116
Massachusetts laboratory Certificate.: M-CT903
Rhode Island Certification: 199



New York Certification: 11982
Florida Laboratory Certification: E871064

CET #:3100246

Project: DOT Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

SAMPLE SUMMARY

The sample(s) were received at 22.2°C.

This report contains analytical data associated with following samples only.

Sample ID	Laboratory ID	Matrix	Collection Date/Time	Receipt Date
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#2 Greenwich Bridge	3100246-01	Solid	10/14/2013 11:30	10/25/2013
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Analyte: TCLP Lead [EPA 6020A]

Analyst: SS

Matrix: Extract

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
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3100246-01	#2 Greenwich Bridge	ND	0.013	mg/L	1	B3J2918	10/29/2013	10/29/2013 18:49	
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CET #:3100246

Project: DOT Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

QUALITY CONTROL SECTION

Batch B3J2918 - EPA 6020A

Analyte	Result (mg/L)	RL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Blank (B3J2918-BLK1)									Prepared: 10/29/2013 Analyzed: 10/29/2013
Lead	ND	0.013							
LCS (B3J2918-BS1)									Prepared: 10/29/2013 Analyzed: 10/29/2013
Lead	0.197	0.013	0.200		98.7	80 - 120			

CET #:3100246

Project: DOT Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710



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Stratford, CT 06615

Tel: (203) 377-9984
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Continuing Calibration Batch	An analytical standard analyzed with each set of samples to verify initial calibration of the system. Samples that are analyzed together with the same method, sequence and lot of reagents within the same time period.
ND	Not detected
RL	Reporting Limit
Dilution	Multiplier added to detection levels (MDL) and/or sample results due to interferences and/or high concentration of target compounds.
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Flags:

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- B- Compound detected in the Blank
- P- RPD of dual column results exceeds 40%
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Complete Environmental Testing, Inc.

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CET #:3100246

Project: DOT Greenwich Bridge 00696, Greenwich

Project Number: 183572.4816.0710

Questions related to this report should be directed to David Ditta, Timothy Fusco, or Robert Blake at 203-377-9984.

Sincerely,



David Ditta
Laboratory Director

Report Comments:

ND is None Detected at the specified detection limit

All analyses were performed in house unless a Reference Laboratory is listed.

Samples will be disposed of 30 days after the report date.

Sample Result Flags:

E- The result is estimated, above the calibration range.

H- The surrogate recovery is above the control limits.

L- The surrogate recovery is below the control limits.

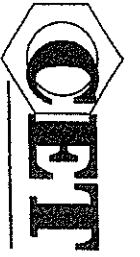
B- The compound was detected in the laboratory blank.

P- The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.

D- The RPD between the sample and the sample duplicate is high. Sample Homogeneity may be a problem.

All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

Complete Environmental Testing is only responsible for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt.



3100246

COMPLETE ENVIRONMENTAL TESTING, INC.

F CUSTODY RECORD

Client: _____ Date and Time in Freezer _____

Volatile Soils Only:

80 Lupes Drive
Stratford, CT 06615
Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet@cellabs.com

Sample ID	Date/Time	Matrix A=Air S=Soil W=Water DW=Drinking W. C=Cassette S=Solid Wipe Other (Specify)	Turnaround Time ** (check one)			
			Same Day	24 Hours	2-3 Days	Standard
#2 - Greenwld Bridge 12/11/13	1130	Pest			<input checked="" type="checkbox"/>	

Organics	Metals (check all that apply)	Additional Analysis
8260 CT List		
8260 Aromatics		
8260 Halogens		
SPLP 8260		
TCLP 8260		
TPH (418.1)		
CT ETPH		
8270 CT List		
8270 PNAs		
PCBs		
Pesticides		
13 Priority Poll		
8 RCRA		
TOTAL		
TCLP Pb	<input checked="" type="checkbox"/>	
SPLP		
Field Filtered		
Lab To Filter		
TOTAL # OF CONT.		1
NOTE #		

PRESERVATIVE (Cl-, HCl, N-, HNO₃, S-, H₂SO₄, Na-, NaOH, C-, Coal, O-, Other)
CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, O-Other) Plastic King
Soil VOCs Only (M-MeOH B= Sodium Bisulfite W=Water F= Empty F=Spore)
RELINQUISHED BY: _____ DATE/TIME: 12/11/13 1100 RECEIVED BY: _____ DATE/TIME: 12/11/13 1330
RELINQUISHED BY: _____ DATE/TIME: 12/11/13 1058 RECEIVED BY: _____ DATE/TIME: 12/11/13 1330

NOTES: RCP for Lead - Tan White Pest on Concrete

Client / Reporting Information
Company Name: RC
Address: _____
City: _____ State: _____ ZIP: _____
Report To: _____ E-mail: _____
Phone #: _____ Fax #: _____

Project Information
Project Contact: Erik Plogter PO # C183572
Project: RT - Greenwld Bridge 00615 Project #: 183572.4816.0710
Location: Greenwld, CT Collector(s): ML
Data Report: Std Site Specific (MSMSD) * RCP Pkg *
RSR Reporting Limits (check one) Email GA Eical SWP Other (Specify)
SHEET _____ OF _____

* Additional charge may apply. ** TAT begins when the samples are received at the Lab. TAT for samples received after 3 p.m. will start on the next business day. REV. 5/9/05

BULK ASBESTOS ANALYSIS REPORT

CLIENT: CT Department of Transportation

Lab Log #: 0043026
 Project #: 183572.4816.0710
 Date Received: 10/15/2013
 Date Analyzed: 10/16/2013

Site: Greenwich Bridge 00696

POLARIZED LIGHT MICROSCOPY by EPA 600/R-93/116

Sample No.	Color	Homogenous	Multi-Layered	Layer No.	Other Matrix Materials	Asbestos %	Asbestos Type
1	Grey	Yes	No	--	---	ND<1%	None
2	Grey	Yes	No	--	---	ND<1%	None
3	Black	Yes	No	--	---	ND<1%	None
4	Black	Yes	No	--	---	ND<1%	None

Reporting limit- asbestos present at 1%
 ND<1% - asbestos was not detected
 Trace - asbestos was observed at level of less than 1%
 NA/PS - Not Analyzed / Positive Stop

Note: Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. In those cases, negative results must be confirmed by quantitative transmission electron microscopy.

The Laboratory at TRC follows the EPA's Interim Method for the Determination of Asbestos in Bulk Insulation (1982), and the EPA recommended Method for the Determination of Asbestos in Bulk Building Materials (EPA/600/R-93/116), July 1993, R.L. Perkins and B.W. Harvey which utilizes polarized light microscopy (PLM). Our analysts have completed an accredited course in asbestos identification. TRC's Laboratory is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), for Bulk Asbestos Fiber Analysis, NVLAP Code 18/A01, effective through June 30, 2014. TRC is an American Industrial Hygiene Association (AIHA) accredited lab for PLM effective through October 1, 2014. Asbestos content is determined by visual estimate unless otherwise indicated. Quality Control is performed in-house on at least 10% of samples and the QC data related to the samples is available upon written request from the client.

This report shall not be reproduced, except in full, without the written approval of TRC. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items tested.

Analyzed by: *Amanda Parkins* Reviewed by: *Kathleen Williamson* Date Issued: 10/16/2013
 Amanda Parkins, Laboratory Analyst Kathleen Williamson, Laboratory Manager

TRC LABORATORY ASBESTOS ANALYTICAL ACCREDITATIONS

NVLAP Lab Code 101424-0 AIHA #100122 CT #PH-0426 ME LA-0075, LB-0071 MA #AA000052 NY #10980 WV# LT000356
 RI #AAL-007C3 TX #300354 VT #AL014538 VA #3333 000283 AZ #A20944 HI #L-09-004 NJ #CT004 CA #10275CA

ProScience Analytical Services, Inc.

22 Cummings Park, Woburn, Massachusetts 01801
 781-935-3212 ~ Fax: 781-932-4857 ~ E-Mail general@proscience.net

Laboratory Report

Client Project #: 183572.4816.0710
 Client Reference: CT DOT - Greenwich, Bridge 00696
 PO #: C183572
 Client #: 297
 Client Name: TRC Environmental Corp. (CT)

Batch: NT 14170
 Method: NOB
 Date Received: 10/17/2013
 Date Analyzed: 10/21/2013
 Date of Report: 10/18/2013

LAB ID	Field ID	Description:	Color	Initial Weight	% Asbestos Types				% Other Non-asp.	% Organic	% Carb.	Total % Asbestos	Analyzed /	
					CHR	AMO	ACT	CRO					ANT	TRE
NT107478	2	Caulk		.3257	.00	.00	.00	.00	11.03	82.74	6.23	ND	Yes	No
NT107479	4	Vibration Cloth		.1809	.00	.00	.00	.00	3.26	81.48	15.26	ND	Yes	No

Comments:

Key: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite TR = Trace = < 1% ND = None Detected

Aimee Cormier
 Aimee Cormier, Analyst