



June 9, 2009

Ms. Theresa Santangelo-Dreiling
Colorado Department of Transportation
Property Management Program
Hazardous Materials Unit
15285 South Golden Road, Building 47
Golden, Colorado 80401

**RE: Asbestos and Limited Lead-Based Paint Inspection of Bridge K-18-CK
Located on Interstate 25 at Mile Marker 97.909**

Dear Ms. Santangelo-Dreiling:

This letter report presents the results of the asbestos and limited lead-based paint inspection of Bridge K-18-CK, conducted under Contract 08 HAA 00035. The following sections include an outline of the scope of the project, descriptions of the methodologies employed during the inspection, a summary of findings and recommendations based on those findings.

PURPOSE AND SCOPE

The purpose of the asbestos and limited lead-based paint inspection was to detect the presence of regulated asbestos containing material (RACM) and lead-based paint (LBP) in or on the structural components and driving surface of the Site bridge(s). As described in our proposal, the scope of the project included a physical assessment of the Site structure(s), collection and analysis of suspect asbestos containing material (ACM) and LBP samples, and preparation of a report containing the findings of the inspection and analyses as well as recommendations based on those findings.

INSPECTION METHODOLOGIES

This asbestos and LBP survey included observations of the bridge structure, obtaining representative samples, determination of friability and condition, and analysis of suspect ACM and LBP. The methodologies for inspection and analyses were generally based on U.S. Environmental Protection Agency (EPA) and Department of Housing and Urban Development (HUD) regulations, including EPA Asbestos Hazard Emergency Response Act (AHERA) and EPA Title X.

Sampling Methodology

ACM samples were obtained by physically removing a small portion (approximately one (1) square-inch) of the material using a sharp instrument (utility knives, coring tools, etc.). Samples of asphalt paving materials were obtained using an electric hammer drill with a coring bit after the surface of the sample area was thoroughly cleaned with de-ionized water. All layers of the sampled material were penetrated, and the disturbance

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of adjacent material was kept at a minimum. The samples were then placed into labeled containers and sealed. The sampling instruments were then wet-wiped to remove any materials which could contaminate following samples. Each sample was labeled identifying the sample number and location. Sampling was conducted in a manner by which damage to building materials was minimized. Sample locations were repaired after sampling using caulking, joint compound, and/or duct tape, as appropriate. All samples were logged onto field data sheets that contain a brief description of the sample areas, inspector identification, the date of inspection and a description of the material sampled.

If applicable, LBP samples were obtained by physically removing a small portion (approximately two (2) square-inches) of the paint using a sharp instrument (utility knives, coring tools, etc.). All layers of the paint were penetrated, and the disturbance of adjacent material was kept at a minimum. The samples were then placed into labeled containers and sealed. The sampling instruments were then wet-wiped to remove any materials which could contaminate following samples. Each sample was labeled identifying the sample number and location. Sampling was conducted in a manner by which damage to building materials was minimized.

Analytical Methodology

The ACM samples collected during the onsite inspection were transported under chain-of-custody to FRS Geotech, Inc. (FRS) at 1441 West 46th Avenue, Suite 14 in Denver, Colorado for analysis of asbestos content. The analytical procedure utilized by FRS during analysis of the bulk samples was the EPA-recommended method 600/R-93/116, or Polarized Light Microscopy with Dispersion Staining. FRS was instructed to hold the samples for six months from the date of analysis in the event that further analysis is required.

If applicable, the LBP samples collected during the onsite inspection were transported under chain-of-custody to Reservoirs Environmental, Inc. (Reservoirs) at 5801 Logan Street, Suite 100 in Denver, Colorado for analysis of lead content. The analytical procedure utilized by Reservoirs during analysis of the paint samples was the EPA-recommended method Flame Atomic Absorption Spectrometry. Reservoirs was instructed to hold the samples for six months from the date of analysis in the event that further analysis is required.

The laboratory analytical results are attached to this letter report.

FINDINGS AND RECOMMENDATIONS

Based on the results of the physical assessment, sampling and analyses the following findings were made:

- No ACM was detected at the Site bridge(s).
- No suspect LBP was observed at the Site bridge(s).

Based on these findings, Tetra Tech recommends the following:

- No ACM or LBP remediation is required prior to demolition or renovation.

LIMITATIONS

Tetra Tech has endeavored to meet what it believes is the applicable standard of care for the services performed and, in doing so, is obliged to advise CDOT of limitations regarding this report. Tetra Tech believes that providing information about limitations is essential to help clients identify and thereby manage risks. These risks can be mitigated, but not eliminated, through additional research. Tetra Tech will, upon request, advise CDOT of the additional research opportunities available and associated costs.

This asbestos and limited lead-based paint bridge inspection did not include any inquiry with respect to methane, lead in drinking water, formaldehyde, subsurface investigation activities or other services or potential conditions or features not specifically identified and discussed herein. In those instances where additional services or service enhancements are included in the report as requested or authorized by CDOT, specific limitations attendant to those services are presented in the text of the report.

The findings and opinions conveyed via this report are based upon information obtained at a particular date from a variety of sources specified herein, and which Tetra Tech believes are reliable. Nonetheless, Tetra Tech cannot and does not warrant the authenticity or reliability of the information sources it has relied upon.

This report represents Tetra Tech's services to CDOT as of the report date. In that regard, the report constitutes Tetra Tech's final document, and the text of the report may not be altered in any manner after final issuance of the same. Opinions relative to environmental conditions given in this report are based upon information derived from the most recent Site reconnaissance date and from other activities described herein. CDOT is herewith advised that the conditions observed by Tetra Tech are subject to change. Certain indicators of the presence of hazardous materials may have been latent or not present at the time of the most recent Site reconnaissance and may have subsequently become observable. In similar manner, the research effort conducted for the asbestos and limited lead-based paint bridge inspection is limited. Accordingly, it is possible that Tetra Tech's research, while fully appropriate for an asbestos building inspection and in compliance with the scope of service, may not include other important information sources. Assuming such sources exist, their information could not have been considered in the formulation of our findings and conclusions.

This report is not a comprehensive site characterization or regulatory compliance audit and should not be construed as such. The opinions presented in this report are based upon findings derived from a Site reconnaissance, a review of specified records and sources and comments made by interviewees. Specifically, Tetra Tech does not and cannot represent that the Site contains no hazardous or toxic materials, products, or other latent conditions beyond those observed by Tetra Tech during its site assessment. Further, the services herein shall in no way be construed, designed or intended to be relied upon as legal interpretation or advice.



Bridge K-18-CK
June 9, 2009

Please do not hesitate to contact us at 303.665.4392 if you have any questions regarding this letter report.

Sincerely,
Tetra Tech

A handwritten signature in blue ink, appearing to be 'RJ Egan', written in a cursive style.

Ryan J. Egan
Project Manager

Attachments: Analytical Results

FRS Geotech, Inc.
1441 W. 46th Ave, Ste. 14
Denver, CO 80211-2338

Phone: (303) 477-2559
(800) 386-3136
FAX: (303) 477-2580
e-mail: frsgeo@ix.netcom.com

June 4, 2009

Mr. Ryan Egan
Tetra Tech
363 Centennial Pkwy
Suite 210
Louisville, CO 80027

Re: Project: CDOT--Bridge K-18-CK, PO#114-181879

FRS Lab Number 113686

Dear Mr. Ryan Egan:

The bulk samples submitted to FRS Geotech, Inc. have been analyzed by polarized light microscopy (PLM), the EPA-recommended method for determination of fibrous constituents in building materials. The percent of asbestos contained in the samples is a visual estimation based upon comparisons with published charts. The results of these analyses are summarized in the enclosed table. This report relates only to the items received and tested by our laboratory. According to requirements set by the National Institute of Standards and Technology/NVLAP, this report must not be used to claim endorsement by NVLAP or any agency of the US Government. Also, NVLAP guidelines specify that this report should not be reproduced, except in full, without the written approval of FRS.

A copy of your Chain of Custody is attached for your convenience. This report is considered highly confidential. Results will not be discussed with any person not associated with you.

Please call if you have any questions about this work.

Sincerely,

David A. Schroeder, Ph.D.
Data Controller

Enclosures

NVLAP Accredited Lab #102078-0
AIHA Accredited Lab #101557

FRS GEOTECH, INC.
 1441 W. 46th Avenue, Ste. 14
 Denver, CO 80211-2338

**RESULTS OF BULK ASBESTOS SAMPLE ANALYSIS
 BY POLARIZED LIGHT MICROSCOPY (PLM) EPA-600/R-93/116**

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Client: **Tetra Tech**

Lab No.: **113686**

Project: **CDOT--Bridge K-18-CK, PO#114-181879**

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Sample No. [layer] Description	Volume (%)	Sample Date	Nonasbestos Fibrous Material (%)	Asbestos Minerals (%)	Summary (%)
<u>M16.1A</u> Concrete [gray]	100%	05/29/09	Fiberglass Cellulose Synthetics Others	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: None Detected Other Fibrous Material -- Nonfibrous Material 100
<u>M16.1B</u> Concrete [gray]	100%	05/29/09	Fiberglass Cellulose 2 Synthetics Insect parts Trace <1%	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: None Detected Other Fibrous Material 3 Nonfibrous Material 97
<u>M16.1C</u> Concrete [gray]	100%	05/29/09	Fiberglass Cellulose Trace <1% Synthetics Others	Amosite Anthophyllite Chrysotile Crocidolite Trem./Act.	Total Asbestos: None Detected Other Fibrous Material Trace <1% Nonfibrous Material 99

* Composite analysis (multilayered sample, see individual layer analyses).

Analyst(s): _____
 Mark Cooperrider

Completed: 06/04/2009

