

LIVERMORE BRIDGES 33-0140 AND 33-0012 ALAMEDA COUNTY, CALIFORNIA

PREPARED FOR:
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PREPARED BY:
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GEOCON
CONSULTANTS, INC

GEOCON PROJECT NO. E8370-06-01

SEPTEMBER 2006



Project No. E8370-06-01
September 12, 2006

Mr. Po Chen
Division Manager - Structure
Mark Thomas & Company, Inc.
1960 Zanker Road
San Jose, California 95112

Subject: ASBESTOS SURVEY
LIVERMORE BRIDGES 33-0140 AND 33-0012
STATE ROUTE 580 IN ALAMEDA COUNTY, CALIFORNIA

Dear Mr. Chen:

Geocon has performed an asbestos survey at the subject site. The scope of services provided by Geocon included surveying the site structure for suspect asbestos-containing materials, collecting bulk samples, and submitting the samples to a laboratory for analyses.

The accompanying report summarizes the services performed and laboratory analysis.

The contents of this report reflect the views of Geocon Consultants, Inc., who is responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.

Please call us if you have any questions.

Sincerely,

GEOCON CONSULTANTS, INC.


David A. Watts, CAC
Project Scientist


Richard W. Day
Regional Manager

DAW:RWD:rjk

(5) Addressee

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1.0 INTRODUCTION

1.1 Site Description

The project site (Site) consists of Bridges 33-0140 and 33-0012 at Post Miles (PM) 13.22 and 13.82, respectively, on State Route (SR) 580 in Livermore, Alameda County, California. The Site is depicted on the attached Vicinity Map, Figure 1, and Site Plan, Figure 2.

1.2 General Objectives

The purpose of the survey was to assess the potential presence and quantity of asbestos at the Site in advance of planned bridge demolition activities. The information obtained from this investigation will be used by Mark Thomas & Company, Inc. for waste profiling, coordinating asbestos removal activities, and estimating associated costs within the proposed project work areas.

2.0 BACKGROUND

The *Code of Federal Regulations (CFR)*, 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Federal Occupational Safety and Health Administration (FED OSHA) classify asbestos-containing material (ACM) as any material or product that contains *greater than 1%* asbestos. Nonfriable ACM is classified by NESHAP as either Category I or Category II material defined as follows:

- **Category I** – asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products.
- **Category II** – all remaining types of nonfriable asbestos-containing material not included in Category I that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated asbestos-containing material (RACM), a hazardous waste when friable, is classified as any material that contains *greater than 1%* asbestos by dry weight *and* is:

- Friable; or
- Category I material that has become friable; or
- Category I material that has been subjected to sanding grinding, cutting or abrading; or
- Category II nonfriable material that has a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing *any* amount of asbestos are subject to certain requirements of the Cal/OSHA asbestos standard contained in Title 8, CCR Section 1529. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of a material exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAP regulations (40 CFR Part 61, Subpart M). RACM (friable ACM and nonfriable ACM that will become friable during demolition operations) must be removed from buildings prior to demolition. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in buildings during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that may make it cost ineffective to do so. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (Title 8, CCR 341.6).

3.0 SCOPE OF SERVICES

Mr. David Watts, a California Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2007), performed the asbestos survey of the Site on August 28, 2006.

Suspect ACM were grouped into homogeneous areas with representative samples randomly collected from each. In addition, each potential ACM was evaluated for friability. A total of four bulk asbestos samples were collected from the Site.

Geocon's procedures for inspection and sampling are discussed below:

- Collected bulk asbestos samples after first wetting friable material with a light mist of water. The samples were then cut from the substrate and transferred to a labeled container. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed).
- Relinquished bulk asbestos samples to EMSL Analytical, Inc., a California-licensed laboratory, for asbestos analysis in accordance with EPA Test Method 600/R-93/116 using polarized light microscopy (PLM) under standard chain-of-custody procedures. EMSL Analytical, Inc. is a laboratory accredited by the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk asbestos fiber analysis. The laboratory analyses were performed on a 48-hour turn-around-time.

Geocon sample identification numbers, material descriptions, friability assessments, and photo references are summarized as portions of Table 1. Sample locations are presented on the Site Plan, Figure 2. Photos of the materials sampled are presented with Site Photographs 1 through 6.

4.0 INVESTIGATIVE RESULTS

Chrysotile asbestos at a concentration of 30% was detected in samples representing nonfriable asbestos sheet packing used as barrier rail shims on Bridge 33-0012. Geocon was unable to safely quantify the barrier rail shims due to safety concerns (i.e., traffic).

Geocon did not observe barrier rail shims on Bridge 33-0140. However, a thorough inspection of the Bridge 33-0140 barrier rails was not possible due to safety concerns (i.e., traffic). Any barrier rail shims encountered on Bridge 33-0140 should be *assumed* to be ACM unless sampling and analysis indicate otherwise.

Asbestos was not detected in samples of the remaining suspect materials collected during the survey. Laboratory results for the bulk asbestos samples are summarized as portions of Table 1. Reproductions of the laboratory report and chain-of-custody documentation are presented in Appendix A.

5.0 CONCLUSIONS AND RECOMMENDATIONS

NESHAP regulations do not require that asbestos-containing sheet piling (a Category I nonfriable/nonhazardous material) identified during this survey be removed prior to demolition or be treated as hazardous waste. However, the disturbance of the material is still covered by the Cal/OSHA asbestos standard (Title 8, CCR Section 1529). The disturbance of the material must be performed by a licensed contractor registered with Cal/OSHA for asbestos-related work (or by a certified asbestos abatement contractor) following Cal/OSHA asbestos work requirements. Contractors are responsible for informing the landfill of the contractor's intent to dispose of asbestos waste. Some landfills may require additional waste characterization. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

Geocon also recommends the notification of contractors (that will be conducting demolition, renovation, or related activities) of the presence of asbestos in their work areas (i.e., provide the occupants and contractor[s] with a copy of this report and a list of asbestos removed by asbestos abatement contractor[s] during subsequent abatement activities). Contractors not involved in asbestos abatement should be instructed not to disturb asbestos during their work.

In accordance with Bay Area Air Quality Management District (BAAQMD) Regulation 11, Rule 2, written notification is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not) and for renovation activities involving specified quantities of RACM. In accordance with Title 8, CCR 341.9, written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain asbestos-related work.

6.0 REPORT LIMITATIONS

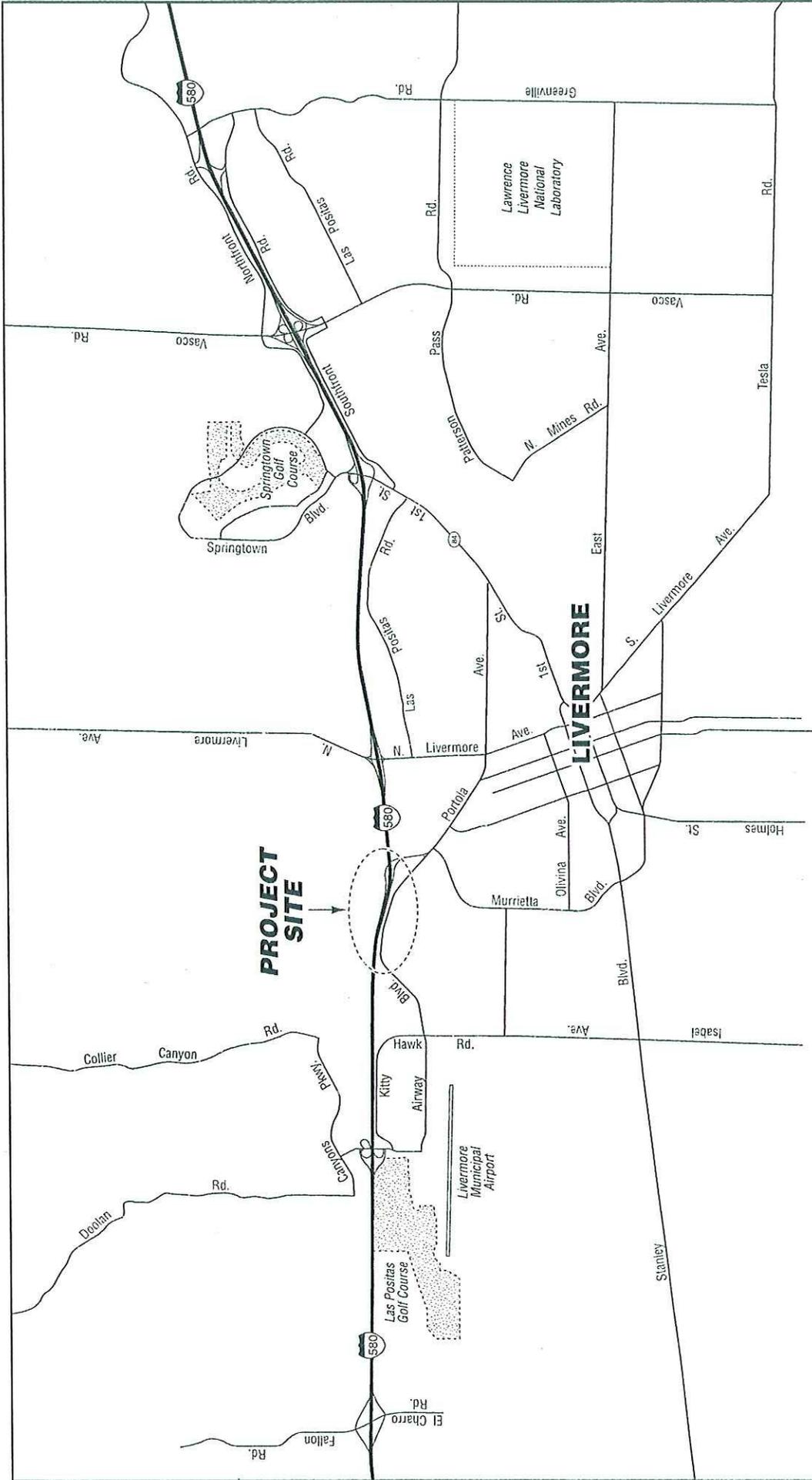
This asbestos survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos in structures. Due to the nature of surveys, asbestos use, and laboratory analytical limitations, some ACM in the structures may not have been identified. Spaces such as voids, crawlspaces, and pipe chases, may have been concealed to Geocon's investigator. Previous renovation work may have been concealed or covered spaces or materials, or may have partially demolished materials and left debris in inaccessible areas. Additionally, renovation activities may have partially replaced ACM with indistinguishable non-ACM. Asbestos may exist in areas not accessible or sampled in conjunction with this project.

During renovation or demolition operations, suspect ACM may be uncovered which are different from those accessible for sampling during this assessment. Personnel in charge of renovation/demolition should be alerted to note materials uncovered during such activities that differ substantially from those included in this or previous assessment reports. If suspect ACM are found, additional sampling and analysis should be performed to determine if the materials contain asbestos.

This report has been prepared exclusively for Mark Thomas & Company, Inc. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.





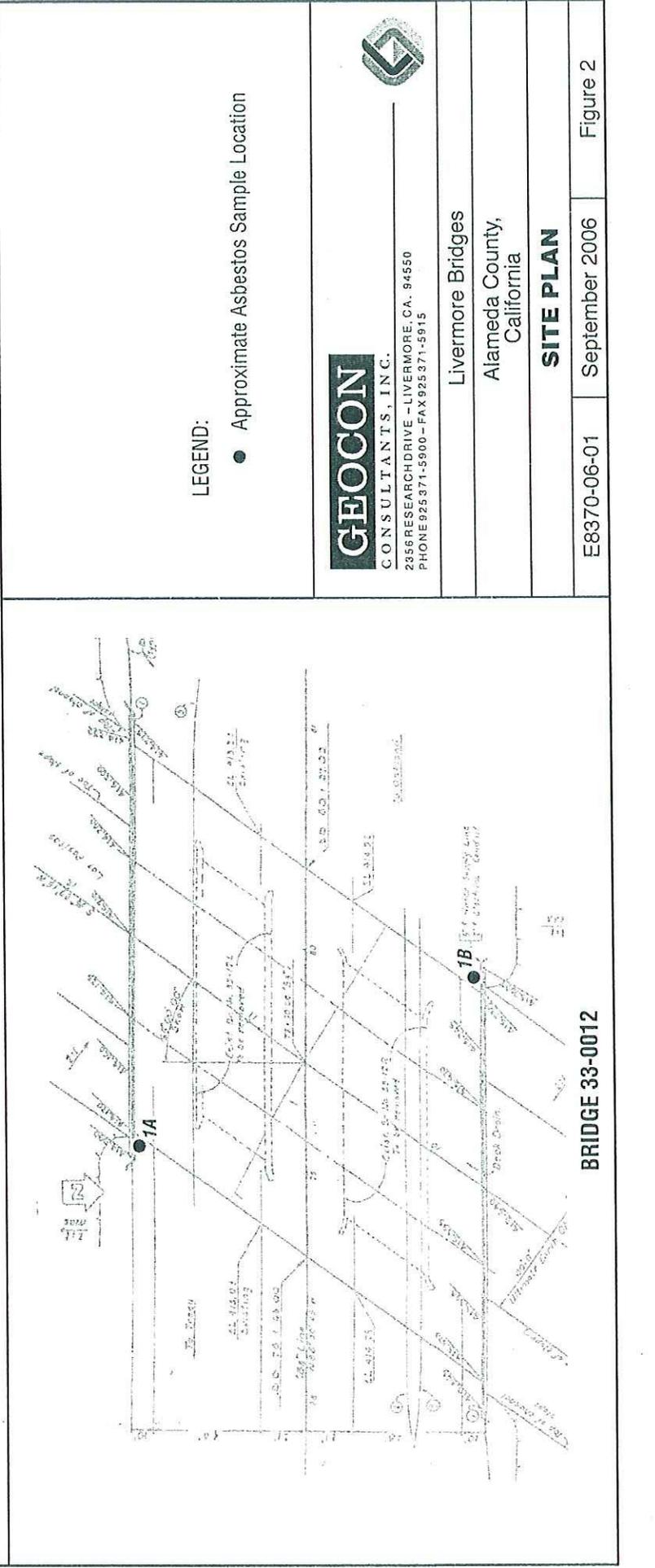
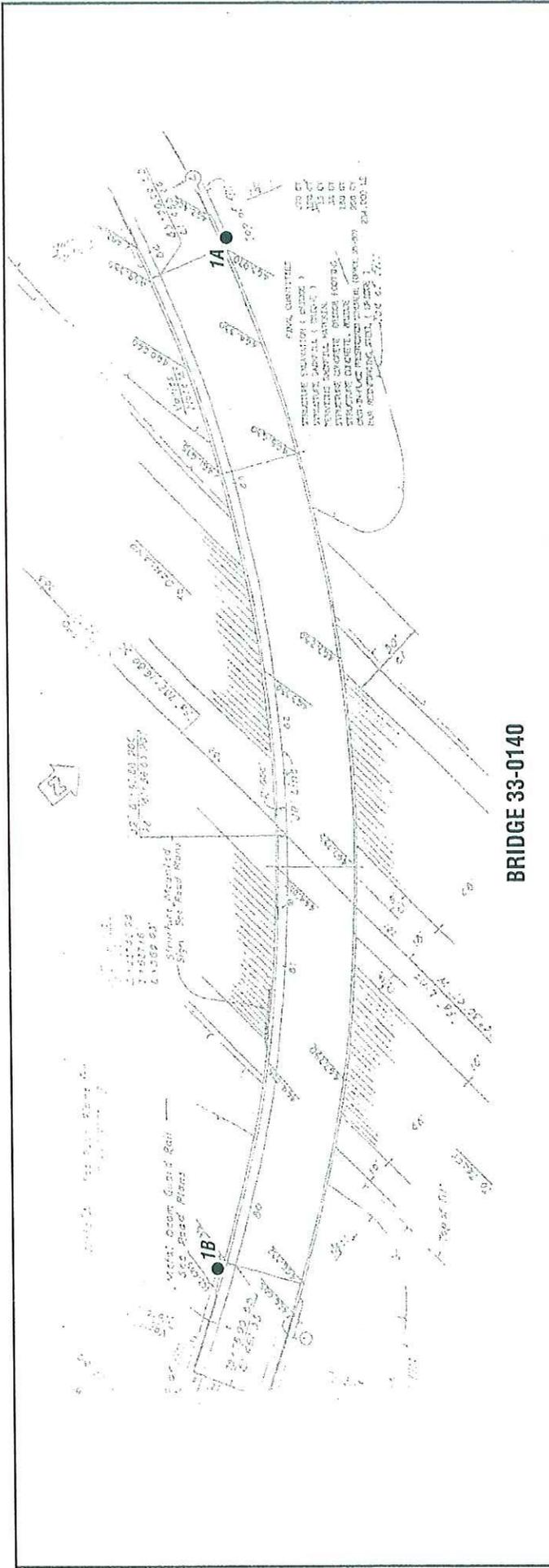
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Livermore Bridges
Alameda County,
California

VICINITY MAP



E8370-06-01 September 2006 Figure 1



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Livermore Bridges
 Alameda County,
 California

SITE PLAN

E8370-06-01 September 2006 Figure 2

TABLE 1
 SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - ASBESTOS
 LIVERMORE BRIDGES 33-0140 AND 33-0012 IN ALAMEDA COUNTY, CALIFORNIA

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Bridge No.	Sample No.	Description of Material	Approximate Quantity	Friable	Site Photo	Asbestos Content
33-0140	0140-1A	Abutment expansion joint material	NA	NA	3	ND
	0140-1B					ND
33-0012	0012-1A	Barrier rail shims	Unable to safely quantify	No	6	30% chrysotile
	0012-1B					30% chrysotile

Notes:

NA = Not applicable (no asbestos detected)

ND = No asbestos fibers detected

Asbestos barrier rail shims may be present on Bridge 33-0140. A thorough inspection of the Bridge 33-0140 barrier rails was not possible due to safety concerns (i.e., traffic).



Photo 1 – Bridge 33-0140 (barrier rails inaccessible)



Photo 2 – Bridge 33-0140 deck joint (non-suspect)



Photo 3 – Bridge 33-0140 abutment joint





Photo 4 – Bridge 33-0012



Photo 5 – Bridge 33-0012 deck joint (non-suspect)



Photo 6 – Bridge 33-0012 barrier rail shims

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PHOTOGRAPHS 4, 5, & 6

Livermore Bridges
Alameda County, California

E8370-06-01

September 2006

APPENDIX

A



EMSL Analytical, Inc

2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577

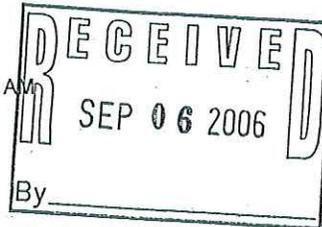
Phone: (510) 895-3675 Fax: 5108953680 Email: milpitaslab@emsl.com



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Project: E8370-06-01 / Livermore Bridges

Customer ID: GECN21
Customer PO: E8370-0601
Received: 08/29/06 9:45 AM
EMSL Order: 090604396
EMSL Proj:
Analysis Date: 8/31/2006
Report Date: 8/31/2006



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

Sample	Location	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
0140-1A, EJM, abutment 090604396-0001		Brown Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
0140-1B, EJM, abutment 090604396-0002		Brown Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
0012-1A, Shims, barrier rail 090604396-0003		Gray Fibrous Homogeneous		70% Non-fibrous (other)	30% Chrysotile
0012-1B, Shims, barrier rail 090604396-0004		Gray Fibrous Homogeneous		70% Non-fibrous (other)	30% Chrysotile

Analyst(s)

Jeremy Malson (4)

or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Analysis performed by EMSL San Leandro (NVLAP #101048-3)

