BLYMYER
ENGINEERS, INC.
1829 Clement Avenue
Alameda, California 94501-1396
(510) 521-3773 FAX: (510) 865-2594

LETTER OF TRANSMITTAL

December 14, 2000	BEI Job No. 94015
ATTENTION:	Mr. Amir Gholami
SUBJECT:	Kawahara Nursery
	16550 Ashland Avenue
	San Lorenzo, California

Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

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SIGNED: Mark Detterman

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BLYMYER
ENGINEERS, INC.

January 20, 2000
BEI Job No. 94015

Mr. Amir Gholami
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: **Health Risk Assessment Workplan**
Kawahara Nursery
16550 Ashland Avenue
San Lorenzo, California
STID # 4403

Dear Mr. Gholami:

Blymyer Engineers, Inc., on behalf of Kawahara Nursery, is pleased to present this workplan for the purpose of documenting the intent of Kawahara Nursery to use a Risk-Based Corrective Action (RBCA) methodology for determining the corrective action goals for soil and groundwater at the subject site. A Tier 2 RBCA health risk assessment (HRA) is proposed to be conducted. The HRA will use available site-specific data to determine site-specific target levels (SSTLs) for soil and groundwater. When the SSTLs have been derived, the remaining petroleum hydrocarbon sources at the site will be removed, using the SSTLs as cleanup goals. The SSTLs will be defined such that site soil and groundwater contamination will not adversely impact the health of the current site residential occupants and future potential construction workers at the site. The site will be assumed to remain largely a commercial establishment with a similar use scenario and similar chemical pathway exclusions; however, future residential use of the entire property may additionally be evaluated. The data used to analyze the chemicals of concern (COC) at the site will be modified so that the chemical specific database used in the generation of SSTLs will conform to California regulatory requirements (i.e. benzene will conform to California regulatory guidelines).

Blymyer Engineers proposes to use the model entitled *RBCA Tool Kit* by Groundwater Sciences, Inc. of Houston, Texas, that utilizes equations directly out of the American Society for Testing and Materials (ASTM) 1739-95 document entitled *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* and dated November 1995. The analytical fate and transport models used by the ASTM standard include the Box and Gaussian Models for onsite and offsite atmospheric modeling, respectively, Summer's Model for soil to groundwater modeling, and Domenico's Model for groundwater fate and transport modeling.

Blymyer Engineers will focus the HRA on the effects of the specific COCs that have been detected in soil and groundwater at the site. In particular, these chemicals consist of benzene, toluene, ethylbenzene, and total xylenes (BTEX). Published, but conservative, chemical and soil parameter data will be assumed where such input is required by the modeling program.

Current residential inhabitants will be assumed to be exposed to volatilized contaminants from groundwater. No other pathway is assumed to be completed based upon the distance between the impacted soil and the residential dwelling, and the prevailing direction of wind. A groundwater ingestion scenario will be excluded.

Construction workers will be assumed to be exposed to dermal contact with impacted soil, inhalation of impacted soil dust and vapors, groundwater vapors, and incidental ingestion of soil particles. Incidental ingestion of groundwater will not be assumed, nor modeled as it is an unlikely event to occur based upon the depth groundwater is known to occur at the site.

Should an exposure pathway for future residential inhabitants be evaluated, the future residents will be assumed to be exposed to inhalation of vapors from impacted soil and groundwater, and indoor and outdoor exposure scenarios, as appropriate. A groundwater ingestion scenario will be excluded. It is currently assumed that dermal contact will be excluded in this scenario as documented residual contamination at the site is located at a minimum depth of 10 to 12 feet. However an SSTL would be generated for the site for use in defining the corrective action goal for impacted soil in the vicinity of the metallic objects preliminarily located on site. It will be assumed that no other exposure pathway will be completed.

As requested by the ACHCSA, Blymyer Engineers will use a Hazard Quotient of 1.0 for cumulative health risks related to non-carcinogenic chemicals, and a total health risk of 10^{-5} for carcinogenic chemicals for potential residential receptors and potential industrial receptors (construction workers).

Blymyer Engineers will prepare a final report of the findings of the risk assessment, with a tabulation of existing data, and appropriate Worksheets provided in Appendix B of the *RBCA Tool Kit* package as necessary.

Please call Mark Detterman at (510) 521-3773 with any questions or comments regarding this project.

Sincerely,

Blymyer Engineers, Inc.

REGISTERED GEOLOGIST
MARK E. DETTERMAN
No. 1788
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA
9/21

By: _____
Mark E. Detterman, C.E.G. 1788
Senior Geologist

And: _____
Michael S. Lewis
Vice President, Technical Services

c. Mr. John Kawahara, Kawahara Nursery

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