

**PHASE 2 ENVIRONMENTAL
SITE ASSESSMENT**

**UCE WEST VILLAGE
PROPERTY
DAVIS,
CALIFORNIA**

**WKA No.
6915.02**



WALLACE • KUHL & ASSOCIATES INC.



**WALLACE - KUHL
& ASSOCIATES INC.**

August 10, 2006

Geotechnical Engineering

Engineering Geology

Environmental Consulting

Remediation Services

Construction Inspection

Materials Testing

Mr. Rob DeWaters

West Village Community Partnership, LLC

1000 Sansome Street, Suite 180

San Francisco, California 94111

Phase 2 Environmental Site Assessment Report

UCD WEST VILLAGE PROPERTY

Vicinity of State Highway 113, between Hutchison Drive and Russell Boulevard

Davis, Yolo County, California

WKA No.: 6915.02

Dear Mr. DeWaters,

As you requested, Wallace-Kuhl & Associates (WKA) completed a Phase 2 investigation of the above referenced site. The site is defined by Yolo County Assessor's Parcel Numbers (APNs) 036-170-04 and -05, and is located west of Highway 113, south of Russell Boulevard and north of Hutchison Drive in Davis, California. The Phase 2 scope of work was developed based on the findings presented in WKAs December 15, 2005 *Phase 1 Environmental Site Assessment, UCD West Village Property, Davis, California*. The purpose of the assessment was to evaluate surficial soils on the subject property for evidence of potential persistent pesticide residuals.

To address potential persistent pesticide residuals, surface soil samples were collected for laboratory analysis as presented herein. Based on this information, WKA proposed and performed the following scope of work:

- Coordinated with the UCD Regional Notification Center to establish locations of subterranean structures on the site prior to hand sampling
- Collected one 4-point composite sample per each 25-acres (collect 32 discrete samples and composite into 8 for analysis)
- Collected four background samples to five feet below ground surface
- Collected discrete samples in the vicinity of the grain silos

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- Analysis by a California-certified laboratory for *Organochlorine Pesticides, Lead and Arsenic* using EPA methods 8081A and 6010 for the soil samples retrieved from the property. The background samples were analyzed for arsenic and lead.

Sampling Activities

On July 24, 2006, a representative from WKA collected a total of 32 discrete surficial soil samples (SS-1 through SS-32), and five discrete surficial soil samples from around the grain silos (Silo-1 through Silo-5). The 32 discrete soil samples were composited by the laboratory into eight 4-point composite samples for analysis. In addition, four background samples (BG-1 through BG-4) were collected from a depth of four to five feet below ground surface for analysis of arsenic and lead. The sampling and analysis strategy for the 225-acre site was based on recommendations presented in DTSC's August 2002 Interim Guidance for Sampling Agricultural Soils, Second Revision. The surficial sample was collected by hand excavating to a depth of four to six-inches below surface grade and filling a laboratory supplied glass jar with soil.

The background samples were collected by hand excavating to depths ranging from four and five feet below ground surface. The samples were submitted under chain-of-custody to California Laboratory Services (CLS), a California Department of Health Services accredited laboratory, for analysis. The soil samples were analyzed for Total Arsenic and Total Lead using EPA 6000/7000 series methods and for Organochlorine Pesticides using EPA method 8081A.

Results

The soil samples were tested for Organochlorine Pesticides using EPA method 8081A and for Total Lead and Total Arsenic using EPA 6000/7000 series methods. Table 1 shows the concentrations of Dieldrin, DDT and its degradation compounds (DDE and DDD), Endosulfan I, Toxaphene, as well as arsenic and lead.

Composite Samples

DDE was detected in three of the eight composite samples at concentrations ranging from 0.038 mg/kg to 0.076 mg/kg. DDT and DDD were not detected above laboratory reporting limits. Evaluating



concentrations of DDT, DDE and DDD for hazardous waste purposes requires a summation of their respective concentrations. Summation of DDT, DDD and DDE concentrations for soil samples obtained from the site ranged from <0.03 to 0.076 mg/kg. Dieldrin was detected in six of the eight samples at concentrations ranging from 0.0055 to 0.020 mg/kg. The highest concentration of Dieldrin was reported in composite sample SS-(17-20). Toxaphene was detected in seven of the eight composite samples at concentrations ranging from 0.11 mg/kg to 0.18 mg/kg. In addition, Endosulfan I was detected in one composite sample (SS-17-20) at a concentration of 0.11 mg/kg.

Arsenic was detected in each composite sample at concentrations ranging from 7.3 mg/kg to 8.0 mg/kg. Lead was detected in each sample at concentrations ranging from 5.2 mg/kg to 6.8 mg/kg. The highest concentration of arsenic was detected in composite sample SS-(13-16) and the highest concentration of lead was detected in sample SS-(5-8).

Silo Samples

DDT was detected in two of the five samples at concentrations ranging from 0.076 mg/kg to 0.090 mg/kg. DDE and DDD were not detected above laboratory reporting limits. Evaluating concentrations of DDT, DDE and DDD for hazardous waste purposes requires a summation of their respective concentrations. Summation of DDT, DDD and DDE concentrations for soil samples obtained from the site ranged from <0.075 to 0.090 mg/kg. Dieldrin, Toxaphene and Endosulfan I were not detected above laboratory reporting limits.

Arsenic was detected in each composite sample at concentrations ranging from 4.4 mg/kg to 5.1 mg/kg. Lead was detected in each sample at concentrations ranging from 11 mg/kg to 22 mg/kg.

Background Samples

In the four background samples collected (BG-1 through BG-4) arsenic was detected at concentrations ranging from 4.2 mg/kg to 6.1 mg/kg and lead was detected at concentrations ranging from 3.7 mg/kg to 5.4 mg/kg.

The complete analytical test results, chain-of-custody and laboratory quality control data for soil samples obtained from the site are included as Appendix A. The sample locations are shown on Figure 1.



Conclusions and Recommendations

Arsenic and lead occur naturally in soil. Both arsenic and lead concentrations detected in surface soil samples collected at the site were below the range of the published regional background levels. A 1997 DTSC research paper, "Naturally Occurring Concentrations of Inorganic Chemicals in Soil," established background levels in shallow soils (less than 2.5 feet below surface grade) for naturally occurring arsenic and lead at 11 and 126 mg/kg, respectively. While the shallow arsenic levels fall below published regional background concentrations, they slightly exceeded the arsenic concentrations in the deeper "background" samples collected at the site.

Regulatory criteria for determining whether soils are to be classified as hazardous waste for disposal purposes based on their residual agricultural chemicals content are contained in Title 22, California Code of Regulations (CCR), Article 3, Section 66261.24, and are known as Total Threshold Limit Concentration (TTLC) values. The TTLC for arsenic is 500 mg/kg and for lead it is 1,000 mg/kg. The TTLC for the summation of DDT, DDD and DDE is 1.0 mg/kg. The TTLC for Dieldrin is 100 mg/kg, and 5.0 mg/kg for Toxaphene. Review of Table 1 reveals that the arsenic, lead, DDT/DDD/DDE, Dieldrin and Toxaphene concentrations are all below published Title 22, CCR levels. Based on these values, the soil would not be classified as hazardous waste if removal/relocation were required. However, a complete characterization (including additional soluble and total metals screening) would be required prior to undertaking a large-scale removal/relocation mitigation project.

The US EPA Region IX Residential Cancer-Based Preliminary Remedial Goal (PRG) for DDE and DDT is 1.7 mg/kg, and 2.4 mg/kg for DDD, while the PRG for Dieldrin is 0.03 mg/kg, 0.44 mg/kg for Toxaphene, and 370 mg/kg for Endosulfan I. Review of Table 1 reveals that the detected persistent pesticide residual concentrations for the samples were all below the health-based PRG value for residential development. Therefore, the levels of organochlorine pesticides detected in surface soils at the subject property should not require further assessment.

The US EPA Region IX Cancer-Based Preliminary Remedial Goal (PRG) for arsenic is 0.39 mg/kg, and 400 mg/kg for lead. PRGs are used as a screening tool to evaluate whether a particular site may require additional study or remediation due to potential chemicals of concern in soil. However, California has recently modified the PRG for lead to 150 mg/kg and for arsenic to 0.062 mg/kg (for the most restrictive residential land use). The difficulty with comparing sample result concentrations to



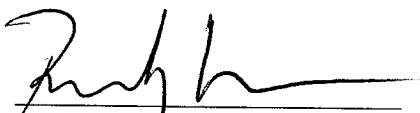
PRG values is that both federal and California-Modified PRGs are well below even naturally occurring levels for these metals.

Because the samples revealed arsenic concentrations above the EPA PRGs and the results slightly exceeded site background concentrations, further assessment, dependent upon planned future land use and/or regulatory review, may be required. If the site continues to be used for agriculture, the site may not require immediate attention. However, sensitive land uses such as residential housing, schools or wildlife mitigation may result in a requirement to remediate or evaluate through a risk assessment, the elevated arsenic soils.

Limitations

The statements and conclusions in this report are based upon the scope of work described above and on observations made on the date of our fieldwork as specified herein. Our work was performed using a degree of skill consistent with that of competent environmental consulting firms performing similar work in the area. No recommendation is made as to the suitability of the property for any purpose. The results of our investigation do not preclude the possibility that materials currently, or in the future, defined as hazardous are present on the property. This report is applicable only to the investigated property and should not be used for any other property. No warranty is expressed or implied.

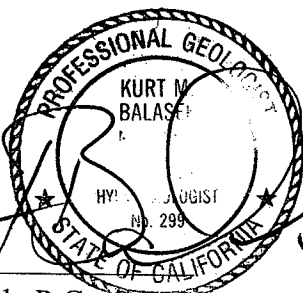
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Randy L. Wheeler
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Attachments

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Kurt M. Balasek, P.G., C. H.G.
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APPENDIX A
LABORATORY DATA SHEET



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