Phase I Environmental Site Assessment Update for Kuhio Park Terrace Property Buildings C-1 through C-8 and D-1 through D-4 1472 to 1592 Linapuni Street Honolulu, Oahu, Hawaii

#### TDD No.:TO-12 09-09-11-0001 Job No.: 002693.1201.01BR

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**Prepared for:** 

U.S. ENVIRONMENTAL PROTECTION AGENCY Region 9 and Hawaii Department of Health, Hazard Evaluation & Emergency Response Division

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2010 Ecology and Environment, Inc.

#### Superfund Technical Assessment and Response Team

Phase I Environmental Site Assessment Update

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Approved by: \_

Paul E. Jones, START Project Geologist Ecology and Environment, Inc.



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# ist of Abbreviations and Acronyms

°F	degrees Fahrenheit
ACBM	asbestos containing building materials
AMSL	above mean sea level
ASTM	American Society for Testing and Materials
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPSC	Consumer Product Safety Commission
E & E	Ecology and Environment, Inc.
EDR	Environmental Data Resources, Inc.
HDOH	Hawaii Department of Health, Hazard Evaluation & Emergency Response Division
НРНА	Hawaii Public Housing Authority
LLP	land-owner liability protection
LUST	leaking underground storage tanks
mg/Kg	milligrams per kilogram
PCB	polychlorinated biphenyl
Phase I ESA	Phase I Environmental Site Assessment
REC	recognized environmental condition
RSL	regional screening level
SHWS	state hazardous waste site

## List of Abbreviations and Acronyms (cont.)

SSURGO	Soil Conservation Service Soil Survey Geographic
START	Superfund Technical Assessment and Response Team
TBA	targeted brownfields assessment
UIC	underground injection control
ТМК	tax map key
U.S. EPA	United States Environmental Protection Agency
UST	underground storage tank

# **Executive Summary**

The United States Environmental Protection Agency (U.S. EPA) directed Ecology and Environment, Inc.'s (E & E's) Superfund Technical Assessment and Response Team (START) to perform a Phase I Environmental Site Assessment Update (Phase I ESA Update) for Buildings C-1 through C-8 and D-1 through D-4 at the Kuhio Park Terrace property located in Honolulu, Hawaii (hereafter referred as the "site") (Figures 1 and 2, Appendix A). This assessment has been implemented following award of a targeted brownfields assessment (TBA) grant to the Hawaii Department of Health, Hazard Evaluation & Emergency Response Division (HDOH) for assessment of the property. At the request of the user, START also performed a visual survey of asbestos containing building materials and lead-based paint.

This Phase I ESA Update has been performed to update a June 2005 *Limited Phase I Environmental Site Assessment at Kuhio Park Terrace* (2005 Limited Phase I ESA), contained in Appendix B. The June 2005 Limited Phase I ESA was performed by AMEC Earth and Environmental, Inc. at the request of the HDOH. This assessment update was performed in general conformance with American Society for Testing and Materials (ASTM) Standard E1527-05 with the goal to identify recognized environmental conditions (RECs), de minimis conditions, and historical RECs at the subject property. At the request of the user, lead and asbestos in construction materials have been included in the scope of this assessment. According to the ASTM standard, lead and asbestos in construction materials are outside the scope of a Phase I ESA, but may be included if requested by the user. Except for lead and asbestos in construction materials, no environmental concerns have been considered in this assessment that are outside the scope of a Phase I ESA, as described in the ASTM standard.

#### **Recognized Environmental Conditions**

This assessment identified the following RECs in relation to the subject property:

- The presence of dieldrin in soil at concentrations which exceed HDOH and U.S. EPA action levels in residential soil and the potential presence of herbicides and pesticides in soil; and
- The likely presence of lead and asbestos in construction materials in all of the site structures.

The lack of access to the interiors of all the units of all structures is considered a data gap that significantly reduces E & E's ability to identify RECs in those locations. This data gap presents the potential that RECs are present in some units of some of the structures, where the interiors could not be observed.

#### **De Minimis Conditions**

The presence of debris and small volumes (1 gallon and less) of various building maintenancerelated products (paints, solvents, stains, and household cleaners) in Building D-2 (and presumably in the other structures) are considered de minimis conditions because they are unlikely to pose an unacceptable risk to workers or the public during or after redevelopment. No further assessment associated with de minimis conditions appears necessary. To prevent contaminating construction debris, building maintenance products should be segregated and recycled or disposed of properly before redevelopment.

The presence of non-polychlorinated biphenyl (PCB) containing fluorescent light ballasts in Building D-2 (and presumably in the other structures) is considered a de minimis condition because it is unlikely to pose an unacceptable risk to workers or the public during or after redevelopment. It is possible that other units in other buildings contain fluorescent light ballast that may contain PCBs. During demolition, light ballasts should be observed and any ballasts without "non-PCB containing" labels should be segregated, sampled if necessary, and disposed of properly.

#### Opinion

The known presence of pesticides and herbicides in site soil and the potential for further contamination of these contaminants in soil throughout the site is a REC that should be assessed to determine whether their presence poses an unacceptable risk to workers or the public during and after redevelopment. The presence and extent of herbicides and pesticides in site soil should be assessed to determine what remedial actions, if any, are necessary before soil is disturbed during redevelopment.

The likely presence of lead and asbestos in construction materials is a REC that should be assessed to determine the extent and concentrations of these compounds in construction materials within all structures at the property. Due to the age of the site structures, it is possible that lead-based paint and asbestos in construction materials are present at concentrations that may pose an unacceptable health risk to workers or the public during and after redevelopment. Before redevelopment occurs, a complete survey of lead and asbestos in construction materials should be performed by an appropriately certified professional to determine what removal and/or abatement activities are necessary during redevelopment.

# **1** Introduction

The U.S. EPA directed E & E's START to perform a Phase I ESA Update for Buildings C-1 through C-8 and D-1 through D-4 at the Kuhio Park Terrace property in Honolulu, Oahu, Hawaii. This assessment has been implemented following award of a TBA grant to the HDOH. The site is located within a property assessed as tax map key (TMK) number 130390010000.

The site is situated within an irregular-shaped parcel totaling approximately 15.22 acres. The property is currently owned and operated by the State of Hawaii for public housing purposes. This report presents findings, conclusions, and recommendations of the assessment and is intended for use by U.S. EPA and the HDOH. The general site vicinity is presented as Figure 1 (Appendix A). Site features and surrounding features are presented on Figure 2 (Appendix A). This report was prepared as an update to the June 2005 Limited Phase I ESA, contained in Appendix B.

#### 1.1 Purpose

The purpose for performing a Phase I ESA is to identify RECs, which may represent conditions that need to be addressed during construction to protect workers and the public from exposure to contaminants. The RECs identified during the assessment represent actual and potential environmental liabilities associated with the property. If not identified before construction begins, addressing environmental issues can result in considerable project delay, unexpected cleanup costs, and may even require modifications to the construction to protect public health.

Performing a Phase I ESA can also help qualify for one of the three land-owner liability protections (LLPs) provided by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in the event that contaminants requiring assessment or remediation exist on the property as a result of the activities of certain third parties. The three LLPs include the innocent landowner, the contiguous property owner, and the bona fide prospective purchaser defenses. Performing a Phase I ESA helps satisfy the appropriate inquiry requirements to qualify for the LLPs. While this report may be suitable to qualify for any of these LLPs, its purpose at the time of preparation is to identify RECs in connection with the subject property.

In addition to this Phase I ESA Update, START performed a limited visual survey of building materials to evaluate the potential presence of asbestos containing building materials (ACBMs) and lead-based paint. It should be noted that though a limited visual survey of ACBMs and lead-based paint was conducted, a full ACBM and lead-based paint survey should be conducted following guidelines set forth in the Asbestos Hazard Emergency Response Act, the National Emission Standard for Hazardous Air Pollutants, and the Federal Department of Housing and Urban Development.

### 1.2 Methodology

This Phase I ESA Update was prepared by U.S. EPA Region 9 START in general conformance with ASTM Standard No. E1527-05. The purpose of the ASTM standard is to define good commercial and customary practice in the United States for conducting an ESA for a parcel of commercial real estate with respect to the range of contaminants within the scope of CERCLA and petroleum products. The goal of the ASTM Standard No. E1527-05 is to identify RECs, which the standard defines as follows:

"The term recognized environmental condition means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. The term includes hazardous substances or petroleum products even under conditions in compliance with the laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be de minimis are not recognized environmental conditions."

At the request of the user, lead and asbestos in construction materials have been included in the scope of this assessment. According to the ASTM standard, lead and asbestos in construction materials are outside the scope of a Phase I ESA, but may be included if requested by the user. Except for lead and asbestos in construction materials, no environmental concerns have been considered in this assessment that are outside the scope of a Phase I ESA, as described in the ASTM standard.

According to ASTM Standard No. E1527-05 Section 4.6, subject to the actual user knowledge exception (Section 4.8) and user's responsibilities (Section 6), an environmental site assessment meeting or exceeding this practice (E1527-05) may be used provided that the several components of the inquiries were collected or updated within 180 days of the date of intended property purchase. A copy of the June 2005 Limited Phase I ESA report that was updated in this assessment is included as Appendix B. The elements of a Phase I ESA Update, as performed in this assessment, are presented below.

- Interviews with owners, operators, and occupants;
- Searches for recorded environmental cleanup liens;
- Reviews of federal, tribal, state, and local government records;
- Visual inspections of the property and of adjoining properties; and
- The declaration by the environmental professional responsible for the assessment update.

# **2 Property Description**

### 2.1 Location and Legal Description

The geographic coordinates for the approximate center of the site located in Honolulu, Oahu, Hawaii are 21° 20' 18.6" North Latitude, 157° 52' 34.7" West Longitude. According to available tax records administered by Honolulu County, the site, with TMK number 130390010000, is situated on a 15.22 acre parcel designated for low-income residential use. The street addresses of 12 structures located in the site are even-numbered and range from 1472 Linapuni Street through 1592 Linapuni Street, , Honolulu, Oahu, Hawaii (Figure 1, Site Vicinity Map).

#### 2.2 Site and Vicinity General Characteristics

The site is situated approximately <sup>1</sup>/<sub>2</sub> mile east of the junction of Highways 1 and 201, 1-<sup>1</sup>/<sub>4</sub> miles north of the Honolulu Harbor, and <sup>1</sup>/<sub>3</sub> mile south of the Kalihi Valley Field. The site is incorporated in the Kuhio Park Terrace public housing complex, which includes Kuhio Homes and Kalihi Valley Homes to the north, Hauiki Homes to the west, Pauhala Homes I, II, III, and IV to the east, and Kamehameha and Kaahumanu Homes to the south.

The site includes twelve structures: eight two-story, four unit residential buildings identified as buildings C-1 through C-8 and four single-story residential buildings identified as buildings D-1 through D-4. The area of investigation specific to this Phase I ESA Update includes the immediate vicinity of the 12 on-site structures (buildings C-1 through C-8 and D-1 through D-4) (Figure 2, Appendix A).

The site is bounded by residential properties to the north, Linapuni Street to the west and south, and School Street to the east. Nearby properties consist of residential structures to the north, a public school to the east, a community center to the south, and a commercial strip mall to the east.

The climate of Honolulu is marine, tropical with average air temperatures ranging from 70 degrees Fahrenheit (°F) to 88 °F and an annual relative humidity of 60 percent (%). It lies in the belt of northeasterly trade winds, which blow throughout most of the year. The annual mean precipitation is 22 inches based on records from the Honolulu Airport.

### 2.3 Description of Structures and Improvements On Site

Site improvements include eight two-story, four unit residential buildings identified as buildings C-1 through C-8 and four single-story, two unit buildings, identified as buildings D-1 through D-4. All buildings are fronted by concrete sidewalks. All buildings were constructed in about 1963 with concrete floors, walls, and ceilings. START observed 9-inch by 9-inch vinyl floor tiles on the floor of building D-1 during the site reconnaissance. The roof was not accessible to START during the site reconnaissance.

All structures are served with public water and sewer. Electricity is provided to all structures via overhead power lines. START observed natural gas meters throughout the site. However, no information regarding the use of natural gas was provided to START during this Phase I ESA Update or referenced in the 2005 Limited Phase I ESA report.

### 2.4 Current Uses of the Site

Buildings C-1 through C-8 are two-story, four-unit residential structures originally utilized for public housing. Building D-1 through D-4 are single-story residential duplexes originally utilized for public housing. No information regarding the current uses of the structures was available to START during this Phase I ESA Update. During START's reconnaissance, it appeared that all of the structures were occupied by residential tenants. Portions of the property not occupied by structures are used for resident parking and landscaping.

### 2.5 Past Uses of the Site

START reviewed historical documentation, including the 2005 Limited Phase I ESA report (Appendix B), historical aerial photographs (Appendix C), Sanborn Fire Insurance Maps (Appendix D), and City Directory (Appendix E) information to assess whether previous uses of the site or adjoining properties represent RECs in relation to the subject site. START's findings from review of past uses of the site are consistent with the findings presented in the 2005 Limited Phase I ESA report. The following brief history of the uses of the site is based upon information included in those documents.

#### <u>1927</u>

The 1927 Sanborn map indicates the site to be generally undeveloped with the exception of a few small structures located east of the current site structures.

#### Prior to Mid-1940s

The site was utilized for taro cultivation until the mid-1940s. Due to limited historical information, the duration of its use for agricultural purposes and prior uses was not precisely defined during this Phase I ESA Update.

#### Mid-1940s to 1962

The parcel was utilized for the development of 62 low-rise townhomes comprising what are known as the Kalihi War Homes.

#### 1962 to Current

Construction of the on-site structures began in 1963. Structures at the site have been utilized for public residential purposes since they were constructed.

### 2.6 Current and Past Uses of Adjoining Properties

Historic uses of adjoining properties are consistent with the historic use of the site. Current land use of adjoining properties is for single and multi-family residential use.

# **3 Physical Setting**

### 3.1 Topography and Drainage

According to the 2005 Limited Phase I ESA report, topography at the site is generally flat with a gentle slope toward Kalihi Stream located to the south and southeast. Elevations throughout the parcel range from approximately 70 feet above mean sea level (AMSL) in the southeastern corner of the parcel to 90 feet AMSL in the northwestern corner of the parcel.

Information obtained during START's review of the 2005 Limited Phase I ESA report indicates that surface water generally flows in a southeasterly direction. Stormwater flow onto the site and run-off were not evident during the site reconnaissance.

A review of the information collected as part of this assessment indicated site topography and drainage are generally consistent with the conditions described in the 2005 Limited Phase I ESA report.

### 3.2 Regional Geology and Soil Stratigraphy

START utilized and verified regional geology and soil stratigraphy information included in the 2005 Limited Phase I ESA report and the Soil Conservation Service Soil Survey Geographic (SSURGO) data maintained by the U.S. Department of Agriculture. Soil compositions provided by SSURGO include soils from the surface to depths of about 59 inches below ground surface (bgs). The following description of regional geology and soil stratigraphy is based on information presented in Section 3.3 of the 2005 Limited Phase I ESA.

The site is located on the seaward side of the Honolulu Plain on the southern flank of the Koolau Mountains. The underlying base of the mountains consists of basalt, resulting from historic volcanic activity. Overlying the basalt is a thick lens of coastal marine sediments, inter-layered with alluvial material, cinder, ash, and near shore sediments.

Site soils generally consist of poorly drained clay identified as Kaena soil. Clay with silt is generally present from ground surface to approximately nine inches bgs. From approximately nine inches to 53 inches bgs, site soils are described as stony clay. Permeability and runoff are generally slow.

Additional site soils may include a well drained stony clay loam identified as Makiki soil. Stony clay loam is generally present from ground surface to approximately 20 inches bgs. From approximately 20 inches bgs to 29 inches bgs, Makiki soils are described as clay loam. From approximately 29 inches bgs to 59 inches bgs, Makiki soils are described as paragravelly clay loam. Permeability is moderately rapid with slow runoff.

The site is situated near Kalihi Stream to the south and east. The stream flows from the northeast to the southwest and discharges to the Pacific Ocean at approximately 4 cubic feet per second on

average. Surface water runoff was not observed during the site reconnaissance. Surface water runoff is expected to flow from the property in a southeasterly direction and discharge into Kalihi Stream, based on surface topography. The site receives an average annual rainfall of about 50 inches per year, with much of the rain falling in the winter months.

### 3.3 Hydrogeology

The following description of regional hydrogeology is based on information presented in Section 3.3 of the 2005 Limited Phase I ESA.

The site is located above the Honolulu aquifer, which includes an upper and a lower aquifer. The upper aquifer is classified as unconfined. The upper aquifer is considered a moderately saline potential groundwater source that is replaceable with a high vulnerability to contamination. The lower aquifer is considered to be confined. The lower aquifer is considered as an irreplaceable, fresh drinking water source that has a low vulnerability to contamination. The water resources on the island are managed by the Hawaii Board of Water Supply. The aquifer system is widely used for agricultural and public water supply.

The site is situated north (presumed upgradient) of the Hawaii State Underground Injection Control (UIC) Line serving the immediate area of Oahu. The UIC line segregates aquifers currently used, or potentially used, as drinking water sources. Typically, aquifers upgradient of the UIC line are considered potential sources of drinking water. Since the site is located upgradient of the UIC line, the water below the site is considered a potential drinking water source. State records indicate that the closest drinking water well is approximately 2,500 feet to the north of the site and pumps water from the lower aquifer.

According to the 2005 Limited Phase I ESA report, depth to groundwater is approximately 60 feet bgs. Although the 2005 Limited Phase I ESA does not indicate the direction of groundwater flow, E & E assumes groundwater flows in a southerly direction, based on topography.

# **4 Records Review**

### 4.1 Standard Environmental Record Sources

START subcontracted Environmental Data Resources (EDR) to search reasonably ascertainable government records for information regarding properties with known environmental concerns located within the search radius prescribed by the ASTM standard specific to each database (search area distances are up to a maximum 1-mile radius of the site). Database search information is incorporated into the appropriate sections of this report.

The database search report consists of information from the recommended sources listed in the ASTM guidelines. A summary of the database research results is provided as part of the EDR radius report to show sites identified within various radii away from the property. Information provided in the EDR radius report was reviewed to identify changes in regulatory records between the time of the 2005 Limited Phase I ESA and this Phase I ESA Update. A copy of the EDR radius report is contained in Appendix F.

#### 4.1.1 On-Site Search Results

The findings from START's review of available information pertaining to the site are consistent with the findings of the 2005 Limited Phase I ESA report. In the EDR radius report, the site was listed on the State Hazardous Waste Site (SHWS), U.S. Brownfields, Brownfields (a state program), and Facility Index System databases. The database listings for the site appear related to the known presence and ongoing assessment of dieldrin in site soil. The EDR radius report contained in the 2005 Limited Phase I ESA did not list the site as a Brownfield site.

#### 4.1.2 Off-Site Search Results

The findings from START's review of available information pertaining to the potential presence of off-site RECs are generally consistent with the findings presented in the 2005 Limited Phase I ESA report.

Two sites listed in the 2005 Limited Phase I ESA EDR radius report were not listed in the EDR radius report generated for this Phase I ESA Update. These are Rakuyo Ken USA, located at 804 Gulick Avenue, and Safety Clean Corp. 918304, located at 723 Umi Street. The 2005 Limited Phase I ESA did not identify either of these sites as representing a REC with respect to the subject property. Both of these sites are located approximately ½ mile downgradient from the site, thus they are not considered to have significant potential to have caused contamination at the site.

A number of sites were identified in the EDR radius report, including 12 sites not listed in the 2005 Limited Phase I ESA EDR radius report. Most of the sites identified in the EDR radius report are located at lower elevation. Sites identified in the EDR radius report at equal or higher elevation than the subject property include one underground storage tank (UST) site, two UST/ leaking UST (LUST) sites, one UST/SHWS site, three LUST sites, and three SHWS sites. Sites

at equal or higher elevation are more likely than those at lower elevation to represent a REC with respect to the subject property. None of the information provided in the EDR radius report indicates that any of the properties appearing in the database search are likely to have caused contamination at the subject site due to distance, location relative to groundwater gradient, case closed status, type/mobility of released contaminants, or a combination thereof.

Twenty orphaned sites were also identified in the database search. Orphaned sites are those for which EDR does not have sufficient location information to plot on the map. Online sources such as Google Earth, Mapquest Maps, and Google searches were used to identify locations of orphaned sites. START identified the locations of all orphan sites. All 20 sites were located beyond the applicable database search distances, thus are not of concern in this assessment.

### 4.2 Additional Records Sources

Additional sources of environmental records may include title searches; fire, planning, and building department records; local agency records; local land records; and historical telephone directory listings. According to ASTM E1527-05, "the purpose of records review is to obtain and review records that will help identify recognized environmental conditions in connection with the property". Except as noted herein, additional records sources were not searched because they were not likely to provide information that would have identified RECs, considering what is already known about the property. As part of the records search provided by EDR, additional records reviewed are the results of an environmental cleanup lien search and a search of historical telephone directory listings.

#### 4.2.1 Local Agency Records

The HDOH is the local environmental oversight agency for permitting, assessment, remediation, and closure of hazardous materials releases in the vicinity of the site. The site appeared on two regulatory database listings, including the state hazardous waste site database (SHWS) and U.S. Brownfields database. The only record for review from the HDOH is the 2005 Limited Phase I ESA report. Information provided in the 2005 Limited Phase I ESA report was included throughout this Phase I ESA Update. No other local agency records were reviewed as part of this Phase I ESA Update.

#### 4.2.2 Previous Investigations at the site

Results of previous investigations for the site are described in the 2005 Limited Phase I ESA. A copy of the 2005 Limited Phase I ESA is contained in Appendix B and summarized below.

The previous environmental sampling was performed by Certified Industrial Hygiene & Safety in February 1997 at Buildings D-1 and D-2 at the request of the Hawaii Public Housing Authority (HPHA). Results of the Phase II ESA were summarized in the 2005 Limited Phase I ESA report. The specific locations and depths of the soil samples collected during the Phase II ESA were not identified in the 2005 Limited Phase I ESA and could not be identified as part of this assessment. The soil samples were analyzed for pesticides by U.S. EPA Method 8080. Dieldrin (an oganochlorine pesticide) was reportedly detected in six out of eight samples. The two non-detect samples were background samples.

Concentrations of dieldrin ranged from 0.97 milligrams per kilogram (mg/kg) to 6.4 mg/kg; exceeding the U.S. EPA Region 9 Regional Screening Level (RSL) (formerly Preliminary Remediation Goal) for residential soil of 0.0303 mg/kg and the HDOH direct-exposure action level (EAL) for residential soil of 0.03 mg/kg. Since these detected concentrations are above the U.S. EPA Region 9 RSL and HDOH EAL, these elevated concentrations may pose a human health concern at the site. Per Chapter 128-1 of Hawaii Revised Statutes (Hawaii Environmental Response Law), the legal application of a pesticide product is not considered a release of a contaminant into the environment. RSLs and EALs are generic cleanup goals intended to be utilized as initial screening criteria for individual chemicals. Exposure pathways for dieldrin are via direct exposures to soil. The Limited Phase I ESA was performed in general conformance with the scope and limitations of the *Standard Practice for Environmental Site Assessments, E1527-00*, ASTM International, 2000. AMEC concluded the following in the June 2005 Limited Phase I ESA report:

"Recognized environmental conditions associated with current residential land use include pesticides (containing dieldrin) applied to building foundations. Additionally, pesticides and herbicides are also suspected to be generally throughout the Site as they may have been associated with former taro cultivation on the site prior to residential development.

A previous environmental test indicated dieldrin contamination near buildings D-1 and D-2 at concentrations ranging from 0.97 to 6.4 mg/kg, which are above the USEPA Region 9 RSL for dieldrin in residential soils (0.03 mg/kg). A letter from HDOH to HPHA states that the dieldrin contamination is a result of legal pesticide applications (per Chapter 128D-1, HRS) and is therefore not regulated by HDOH. Irrespective of its legal use, ASTM E 1527-00 promulgates that the dieldrin contamination found on site is a recognized environmental condition. The letter further states that there is potential for exposure if the soil is disturbed and best management practices should be employed during demolition activities. The soil has not been disturbed at this time."

#### 4.2.3 Historical Telephone Directories

A review of historical telephone directory listings was not included in the 2005 Limited Phase I ESA report. As part of the database and records search performed by EDR, results of a search of historical telephone directory listings were provided in the EDR City Directory Abstract. The dates included in the EDR City Directory for the site and adjoining properties included 1959, 1964, 1969, 1974, 1979, 1984, 1989, 1994, 1999, 2004, and 2009.

The results of the EDR City Directory Abstract search were consistent with findings from other historical records. With the exception of one listing, the target property and adjoining properties were consistently listed as either "Alphabetical List Only", "No Current Listing", "Not verified", or "Residential". The unique listing was provided in 1994 and listed "Kuhio Park Terrace (Rec Ctr)" to be addressed as 1531 Linapuni Street. The EDR City Directory Abstract identified no adjoining properties as commercial or industrial sites. The EDR City Directory Abstract is contained in Appendix E.

#### 4.2.4 Environmental Cleanup Lien Records

In general conformance with ASTM E1527-05, records were reviewed for environmental cleanup liens recorded against the subject parcel. A search for environmental liens was conducted by EDR. No environmental liens were identified in relation to the subject parcel. The environmental lien search report is contained in Appendix G.

# **5 Site Reconnaissance and Interviews**

#### 5.1 Site Reconnaissance

START conducted a reconnaissance on site of buildings D-1 and D-2 on March 11, 2010. The scope of the project was subsequently changed to include ten additional buildings and another reconnaissance was conducted on July 21, 2010 to observe Buildings D-3, D-4, and C-1 through C-8. The site was observed visually for evidence of obvious contamination or the possibility of the presence of RECs. Select photographs are contained in Appendix H.

#### 5.1.1 Observations on the Property

The site generally appeared to be in similar condition to that described in the 2005 Limited Phase I ESA report. During the March 11, 2010 and July 21, 2010 site reconnaissance, much of the site was covered in lawn, landscaping and paved parking. START did not observe obvious indications of contamination, such as surface staining or distressed vegetation at the site during the site reconnaissance.

The 2005 Limited Phase I ESA reported that the on-site structures were originally painted prior to the ban of lead-based paint in 1978 by the U.S. Consumer Product Safety Commission (CPSC). In 1978, the CPSC banned paints and similar surface coatings that contain more than 0.06 percent lead (lead-based paint). Lead-based paint may likely be present in the building materials, including the concrete block fences situated adjacent to the site structures.

#### 5.1.2 Observations Within and Adjacent to the Structures

During the March 11, 2010 and July 21, 2010 site visits, START observed the 12 on-site structures from the outside as well as the interior of one unit in building D-2. START did not observe indications of an obvious release inside the structure, such as surface staining or leaking containers. All of the structures appeared to be constructed of concrete block walls with concrete ceilings and floors. The interiors and exteriors of the structures were painted. According to the Hawaii Public Housing Authority, building materials observed in the interior of the observed unit at Building D-2 are typical of those not observable in the remaining units of the on-site structures.

Debris and small volumes (1 gallon and less) of various building maintenance-related products (paints, solvents, stains, and household cleaners) were observed inside the one unit observed at Building D-2. START observed 9-inch square vinyl floor tile throughout the unit, which is known to have been manufactured using asbestos. Most interior lights were observed to be fluorescent lighting systems. START observed two fluorescent light fixtures inside the unit and gained access to one for inspection of the light ballast. A label on the light ballast indicates that it is a non-PCB containing ballast. START did not observe interior staining that could be indicative of a release.

#### 5.1.3 Indications of Polychlorinated Biphenyls

Di-electric oil within electrical transformers and some types of electrical equipment may contain PCBs, particularly if they were installed before the use of PCBs was banned in 1977.

The 2005 Limited Phase I ESA did not identify the presence of PCB-containing electrical transformers at or adjacent to the site. START did not observe PCB-containing electrical transformers or electrical equipment at the site during either of the site reconnaissance visits. START observed one fluorescent light ballast in Building D-2 with a label indicating it is "non PCB-Containing". Though building materials observed in Building D-2 are reportedly similar to those in the other units, it is possible that some units contain fluorescent light ballasts with PCBs due to the age of the construction.

#### 5.1.4 Observations at Adjacent Properties

Observations of adjacent properties during the 2005 Limited Phase I ESA and this Phase I ESA Update were consistent. Surrounding adjacent properties generally consist of multi-family residential structures belonging to the Kuhio Park Terrace housing project.

### 5.2 Interviews

START interviewed the following individuals as part of this assessment:

- Ms. Melody Calisay, HDOH;
- Mr. Marcel Audant. HPHA; and
- One anonymous citizen.

The interview process consisted of personal interviews and/or the completion of one or both of the questionnaires by those knowledgeable about the property. Copies of completed questionnaires are contained in Appendix I.

#### 5.2.1 User-provided Information

As required by ASTM E1527-05, the user (Ms. Melody Calisay) was asked for the user-provided information by completing the user questionnaire. Specific questions in each of the following six categories of information are included in the questionnaire:

- Environmental cleanup liens that are filed or recorded against the property;
- Activity and land use limitations that are in place on the property or that have been filed or recorded in a registry;
- Specialized knowledge or experience of the person seeking to qualify for the LLP;
- Relationship of the purchase price to the fair market value of the property if it were not contaminated;
- Commonly known or reasonably ascertainable information about the subject property; and
- The degree of obviousness of the presence or likely presence of contamination at the subject property, and the ability to detect the contamination by appropriate investigation.

START also verbally reviewed the user questionnaire with Mr. Marcel Audant of the HPHA and recorded his responses on the questionnaire form. A copy of the completed questionnaire is contained in Appendix I.

#### 5.2.2 Findings of Transaction Screen Questionnaire

As required by ASTM E1527-05, START asked the user to answer the questions included on the ASTM E1528-06 questionnaire. Results of the interviews did not provide any information that was not identified during previous assessments.

#### 5.2.3 Interviews

The anonymous interviewee did not provide additional information not already identified during previous assessments. Results of the remaining interviews are presented section 5.2.1 and 5.2.2, describing the findings of the questionnaires.

# 6 Findings

An initial Phase II ESA was performed at the site in 1997 by Certified Industrial Hygiene Services to investigate the potential presence of pesticide contaminated soils surrounding the onsite structures. Dieldrin contaminated soil was detected near the site building foundations of Buildings D-1 and D-2 at concentrations ranging from 0.97 to 6.4 mg/kg, exceeding the U.S. EPA Region 9 RSL for dieldrin in residential soils of 0.03 mg/kg.

A Limited Phase I ESA was performed at the site in 2005 by AMEC to investigate the potential presence of RECs on the subject property and on other adjacent properties that are part of the Kuhio Park Terrace development. The Limited Phase I ESA identified dieldrin-contaminated soil as an REC identified during the 1997 Phase II ESA. Additionally, the June 2005 Limited Phase I ESA concluded that pesticides and herbicides possibly associated with former taro cultivation on the property prior to development were suspected to be present in soil throughout the Kuhio Park Terrace parcel.

This assessment was performed to update the 2005 Limited Phase I ESA. Though not included in the 2005 Limited Phase I ESA, assessment of the potential presence of lead and asbestos in construction materials was included in this update at the request of the HDOH. Issues of potential concern identified in this assessment are the presence of pesticides and herbicides in soil; the potential presence of lead and asbestos in construction materials; the presence of debris and various building maintenance-related products (paints, solvents, stains, and household cleaners) inside the structures; and the potential presence of PCB-containing fluorescent light ballasts inside the structures. No other issues of potential concern were identified in this assessment.

# 7 Conclusions

At the request of the HDOH and as part of a TBA grant awarded to the HDOH, a Phase I ESA Update was performed for Buildings C-1 through C-8 and D-1 through D-4 of the Kuhio Park Terrace public housing property in Honolulu, Hawaii. The assessor's parcel number included in this assessment is TMK number 130390010000. As part of a previous investigation, a Limited Phase I ESA was performed and results reported in the June 2005 Limited Phase I ESA Report. This report is an update to the June 2005 Limited Phase I ESA.

#### 7.1 Recognized Environmental Conditions

The goal of the ASTM standard is to identify RECs, which the ASTM standard defines as:

"The term recognized environmental condition means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. The term includes hazardous substances or petroleum products even under conditions in compliance with the laws."

Except for the following, this assessment has revealed no RECs in relation to the subject property. The following RECs were identified in relation to the subject property:

- The presence of dieldrin in soil at concentrations which exceed HDOH and U.S. EPA action levels in residential soil and the potential presence of herbicides and pesticides in soil; and
- The likely presence of lead and asbestos in construction materials in all of the site structures.

### 7.2 De Minimis Conditions

According to the ASTM standard, the term REC is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. Conditions determined to be de minimis are not RECs. This assessment has revealed the following de minimis conditions in relation to the subject property:

- The presence of debris in Building D-2 and presumably in the other structures;
- The presence of small volumes (1 gallon and less) of various building maintenancerelated products (paints, solvents, stains, and household cleaners) in Building D-2 and presumably in the other structures; and

• The presence of fluorescent light ballasts with labels indicating they are non-PCB containing.

# 7.3 Historical Recognized Environmental Conditions

According to the ASTM standard, the term historical REC is an environmental condition that in the past would have been considered a REC but that may or may not be considered a REC currently. This assessment has revealed no historical RECs identified in relation to the subject parcel.

# 8 Opinion

This section is included as described in ASTM E1527-05, Section 3.2.39. The opinions provided here are based solely on the information presented in this report. Results of this assessment indicate that there are two RECs and three de minimis conditions identified in connection with the subject property.

The known and potential presence of herbicides and pesticides in site soil is an REC that should be assessed to determine whether the presence of these contaminants poses an unacceptable risk to workers or the public during and after redevelopment. The presence and extent of herbicides and pesticides in site soil should be assessed to determine what remedial actions, if any, are necessary before soil is disturbed during redevelopment.

The likely presence of lead and asbestos in construction materials is a REC that should be assessed to determine the extent and concentrations of these compounds in construction materials within all structures at the property. Due to the age of the site structures, it is possible that lead-based paint and asbestos in construction materials are present at concentrations that may pose an unacceptable health risk to workers or the public during and after redevelopment. Before redevelopment occurs, a complete survey of lead and asbestos in construction materials should be performed by an appropriately certified professional to determine what removal and/or abatement activities are necessary during redevelopment.

The presence of debris and small volumes (1 gallon and less) of various building maintenancerelated products (paints, solvents, stains, and household cleaners) in Building D-2 (and presumably in the other structures) are considered de minimis conditions because they are unlikely to pose an unacceptable risk to workers or the public during or after redevelopment. No further assessment associated with de minimis conditions appears necessary. To prevent contaminating construction debris, building maintenance products should be segregated and recycled or disposed of properly before redevelopment.

The presence of non-PCB containing fluorescent light ballasts in Building D-2 (and presumably in the other structures) is considered a de minimis condition because it is unlikely to pose an unacceptable risk to workers or the public during or after redevelopment. It is possible that other units in other buildings contain fluorescent light ballast that may contain PCBs. During demolition, light ballasts should be observed and any ballasts without "non-PCB containing" labels should be segregated, sampled if necessary, and disposed of properly.

The lack of access to the interiors of all the units of all structures is considered a data gap that significantly reduces E & E's ability to identify RECs in those locations. This data gap presents the potential that RECs are present in some units of some of the structures, where the interiors could not be observed.

# 9 Limitations

### 9.1 Special Terms and Conditions

To achieve the study objectives stated in this report, conclusions are based on the best information available during the period of the investigation and within the scope of services prescribed in the agreement.

Professional judgment was exercised in gathering and analyzing the information obtained, and we commit ourselves to the usual care, thoroughness, and competence being practiced in the engineering profession at the time of this work. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, START cannot guarantee that the investigations completely defined the potential for any contamination by hazardous or otherwise harmful substances described in the report or, if no such contamination is found, its absolute absence.

This report is not a legal opinion. This report does not necessarily comply with requirements defined in any environmental law such as the "innocent landowner defense" or "due diligence inquiry." Only legal counsel retained by the user is competent to determine the legal implications of any information or conclusions in this report for the user.

START is not responsible for any effect upon the legal rights, obligations, or liabilities of any party or for any effect on the finance-ability, marketability, or value of the property investigated in the study or for the occurrence or non-occurrence of any transaction involving the property.

This report was prepared for the exclusive use of the U.S. EPA and the HDOH. START is not liable for any action arising out of the reliance of any third party on the information contained within this report.

### 9.2 Significant Assumptions

A number of assumptions have been made in the preparation of this assessment, consistent with the standard of care generally practiced by similar professionals in the environmental assessment industry at the time the work is performed. START did not attempt to list all assumptions or determine whether those assumptions are significant because no level of effort can fully document the assumptions made during the normal course of professional judgment exercised in the preparation of this type of assessment. If any special assumptions were made that are deemed pertinent to the findings of the assessment, they are described in this section in general conformance with ASTM Standard E1527-05.

## 9.3 Deviations

This assessment was conducted in general conformance with ASTM Standard E1527-05. This assessment was performed without deviations from the ASTM standard that are deemed pertinent to our findings.

## 9.4 Data Gaps

According to ASTM Standard E1527-05, "The report shall identify and comment on significant data gaps that affect the ability of the environmental professional to identify recognized environmental conditions and identify the sources of information that were consulted to address the data gaps". START was only able to gain access to the interior of one unit of one of the onsite structures. It is possible that RECs are present inside other units of the structures that were not observed.

### 9.5 Out of Scope Issues

Information regarding contaminants and issues that are outside the scope of this assessment may be of concern to landowners and may be provided herein at the request of or for the general information of the user. The most common of these constituents and issues that may be of concern include, but are not limited to, the following:

- Radon;
- Naturally occurring asbestiform minerals;
- Naturally occurring lead in drinking water;
- Lead and asbestos in construction materials;
- Wetlands delineation;
- Regulatory compliance;
- Cultural and historical resources;
- Industrial hygiene;
- Health and safety;
- Ecological resources;
- Endangered species;
- Indoor air quality;
- Biological agents;
- Mold;
- Geologic hazards; and
- Geotechnical conditions.

Inclusion of information regarding any of these issues in this report is for informational purposes only. As a result, any information provided herein regarding any issues that are outside the scope

of CERCLA or petroleum does not provide the landowner with any legal protection from liability for costs related to assessment, abatement, or otherwise addressing these issues.

# 10 Qualifications of Environmental Professionals

This Phase I Environmental Site Assessment was conducted by E & E's environmental professionals duly registered by the California Board for Geologists and Geophysicists.

I, Paul Jones, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I developed and performed all appropriate inquiries in general conformance with the standards and practices set forth in 40 CFR Part 312.

Approved by:

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Paul E. Jones, START Project Geologist Ecology and Environment, Inc.

# **11 References**

- ASTM International. 2000. "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Standard E1527-00." ASTM International.
- ASTM International. 2005. "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Standard E1527-05." ASTM International.
- ASTM International. 2006. "Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process, Standard E1528-06." ASTM International.
- AMEC Earth & Environment. July 2004, Revised 2005. "Limited Phase I Environmental Site Assessment at Kuhio Park Terrace." June.

# A Figures

# B Limited Phase I Environmental Site Assessment Report, June 2005

# **C** Historical Aerial Photographs

# **D** Sanborn Fire Insurance Maps

# **E EDR City Directory Abstract**

# F EDR Report

# **G** EDR Lien Search

# H Site Photographs

I Questionnaires