

# Summary of Historic Data

Brewer Environmental Services  
Further Phase II Site Characterization Report  
July 13, 1993

Borings B-9, B-10, and B-11 installed around UST location to depths of approximately 120 feet bgs

Boring	Depth (ft)	DCP (mg/kg)	Soil Lithology
B-9	0-16.5	nd	red brown silty clay-clayey silt grading to weathered basalt
	21.5	0.01	red brown silty clay-clayey silt grading to weathered basalt
	26.5	0.02	red brown silty clay-clayey silt grading to weathered basalt
	31.5	0.02	red brown silty clay-clayey silt grading to weathered basalt
	36.5	nd	red brown silty clay-clayey silt grading to weathered basalt
	41.5	0.016	red brown silty clay-clayey silt grading to weathered basalt
	46.5	nd	red brown silty clay-clayey silt grading to weathered basalt
	51.5	nd	red brown silty clay-clayey silt grading to weathered basalt
	56.5	0.11	red brown silty clay-clayey silt grading to weathered basalt
	56.5-75	nd	red brown silty clay-clayey silt grading to weathered basalt
B-10	75-120	nd	basalt
	0-31.5	nd	red brown silty clay-clayey silt grading to weathered basalt
	31.5	0.005	red brown silty clay-clayey silt grading to weathered basalt
	36.5	0.015	red brown silty clay-clayey silt grading to weathered basalt
	41.5	0.017	red brown silty clay-clayey silt grading to weathered basalt
	46.5	0.013	red brown silty clay-clayey silt grading to weathered basalt
	51.5	0.033	red brown silty clay-clayey silt grading to weathered basalt
	56.5	0.027	red brown silty clay-clayey silt grading to weathered basalt
	61.5	0.017	basalt
	64.3-65.1	nd<0.01	basalt
B-11	66.5	0.006	basalt
	66.5-83.25	nd<0.01	basalt
	0-11.5	nd	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	16.5	0.01	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	21.5	0.01	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	26.5	0.02	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	31.5	0.059	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	36.5	0.065	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	41.5	0.058	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	46.5	0.13	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	51.5	0.2	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	56.5	0.088	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	61.5	0.075	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	66.5	0.18	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt
	81.5-83	nd	basalt
	83-110	nd	red brown silty clay-clayey silt grading to gray green and red brown weathered basalt

EnviroServices & Training Center, LLC  
Soil Sampling Report - Former Emulsion Plant  
April 16, 2003

Excavated 6 test pits to depths of 12 to 15 feet bgs to identify physical evidence of a historic UST release. Visual/olfactory observations and a PID were used to field screen soil for indications of a UST release. 1,2-Dichloropropane (DCP) was detected in 3 of the 6 soil samples collected.  
Test Pit 5 (15 feet bgs): DCP = 0.007 mg/kg  
Test Pit 6 (12 feet bgs): DCP = 0.054 mg/kg  
Test Pit 6 (15 feet bgs): DCP = 230 mg/kg

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3376  
HONOLULU, HAWAII 96801-3376

SEP 11 2006  
CHYOME L. FUKINO, M.D.  
DIRECTOR OF HEALTH

In reply, please refer to:  
EMD/SHWB

September 7, 2006

U09008DP

Mr. Richard K. Mirikitani  
Vice President & Corporate Counsel  
Castle & Cooke Resorts, LLC  
100 Kahelu Avenue  
Mililani, Hawaii 96879

Dear Mr. Mirikitani:

SUBJECT: Dole Lanai Plantation, Former Emulsion Plant  
Facility ID 9-402424 / Release ID 900128

The Department of Health (DOH) has reviewed the report, *Exposure Prevention Management Plan (EPMP)*, dated June 2005, and prepared by EnviroServices & Training Center, LLC (ETC). Please note the report has been placed with the public record.

The DOH review of the subject file discovered that requested action and documentation for the site has not been submitted to DOH. On May 13, 2005, DOH wrote a letter to Castle & Cooke Resorts (C & C) requesting an Exposure Pathway Assessment Report (EPAR) for this release. To date, DOH has not received the EPAR. Please submit the EPAR within forty-five (45) days of your receipt of the letter. DOH's *Technical Guidance Manual (TGM)*, 2<sup>nd</sup> Edition, Appendix 5-1, contains guidance for preparing an EPAR.

DOH also has the following concern:

1. Soil sampling results indicate that the level of 1,2-Dichloropropane exceeds EPA Region 9 Preliminary Remediation Goals (PRG) for industrial soil by 300X.

DOH requests that Castle & Cooke Resorts prepare and submit a site-specific Tier 2 risk based assessment for sites remaining above the DOH Tier 1 Action Levels or EPA Region 9 Preliminary Remediation Goals (PRG) within forty-five (45) days of your receipt of this letter.

Mr. Richard K. Mirikitani  
September 7, 2006  
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DOH's *Technical Guidance Manual (TGM), 2<sup>nd</sup> Edition* and the companion Risk-Based Corrective Action document contain guidance for preparing a site-specific Tier 2 risk based assessment. Both documents are available for download at our website:  
<http://www.hawaii.gov/health/environmental/waste/ust/tgm.html>.

If you have any questions regarding this letter, please contact Dr. Darren Park of our Underground Storage Tank Section at (808) 586-4375 or e-mail at [darren.park@doh.hawaii.gov](mailto:darren.park@doh.hawaii.gov).

Sincerely,

  
STEVEN Y.K. CHANG, P.E., CHIEF  
Solid and Hazardous Waste Branch

JUN 17 2005

## EXPOSURE PREVENTION MANAGEMENT PLAN

Former Emulsion Plant  
Lanai City, Lanai, Hawaii

Facility ID: 9-402424  
Release ID: 900128

Prepared For:  
CASTLE & COOKE RESORTS, LLC  
P.O. Box 630310  
Lanai City, Hawaii 96763-0310

Prepared By:  
ENVIROSERVICES & TRAINING CENTER, LLC  
2850 Paa Street, Suite 150  
Honolulu, Hawaii 96819  
Tel: 839-7222

ETC Project No: 02-6011

June 2005

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### APPENDIX

APPENDIX 1:	EXPOSURE PATHWAY ASSESSMENT DATA
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## 1.0 CERTIFICATION AND LIMITATIONS

EnviroServices & Training Center (ETC), LLC has completed this Exposure Prevention Management Plan (EPMP) for the project site. ETC's findings and conclusions presented in this EPMP are professional opinions based solely upon visual observations of the project site, government regulations, and upon interpretation of the laboratory data and field measurements gathered at the time and location of the study.

This report is intended for the sole use of ETC's Client, Castle & Cooke Resorts, LLC exclusively for the project site indicated. The scope of services performed in execution of this EPMP may not be appropriate for satisfying the needs of other users, and any use or reuse of this EPMP or the findings and conclusions presented herein is unauthorized and at the sole risk of said user.

ETC makes no guarantee or warranty; either expressed or implied, except that our services are consistent with good commercial or customary practices designed to conform to acceptable industry standards and governmental regulations. No warranty or representation, expressed or implied, is included or intended in its proposal, contracts, or reports. Opinions stated in this EPMP apply only to the site as outlined and apply to the conditions present at the time the activities were performed. Moreover, these opinions do not apply to site changes that occur after the activities were performed.

Prepared By:

  
Damon Hamura  
Environmental Engineer

Date:

6/16/05



## 2.0 INTRODUCTION

### 2.1 Purpose

The project site is the former Emulsion Plant facility, previously used by Dole Packaged Foods Company (Dole), located at 750 Fraser Avenue in Lanai City, Hawaii. Dole used the site as an agricultural chemical mixing and storage area from 1947 to the late 1980s. Included as part of the facility were two, 10,000-gallon capacity, single-wall, steel-construction underground storage tanks (USTs). Both tanks were used to store diesel fuel from 1947 through approximately 1978-1979. From 1978-1979 until the USTs were taken out of service in the late 1980s, the tanks were used to store Telone II, a soil fumigant primarily comprised of 1,3-dichloropropene.

During UST closure activities in 1989, petroleum constituents, as well as halogenated volatile compounds (HVOCs) were detected in soil samples. In addition, further site characterization activities identified detectable concentrations of petroleum constituents, HVOCs, and organochlorine pesticides.

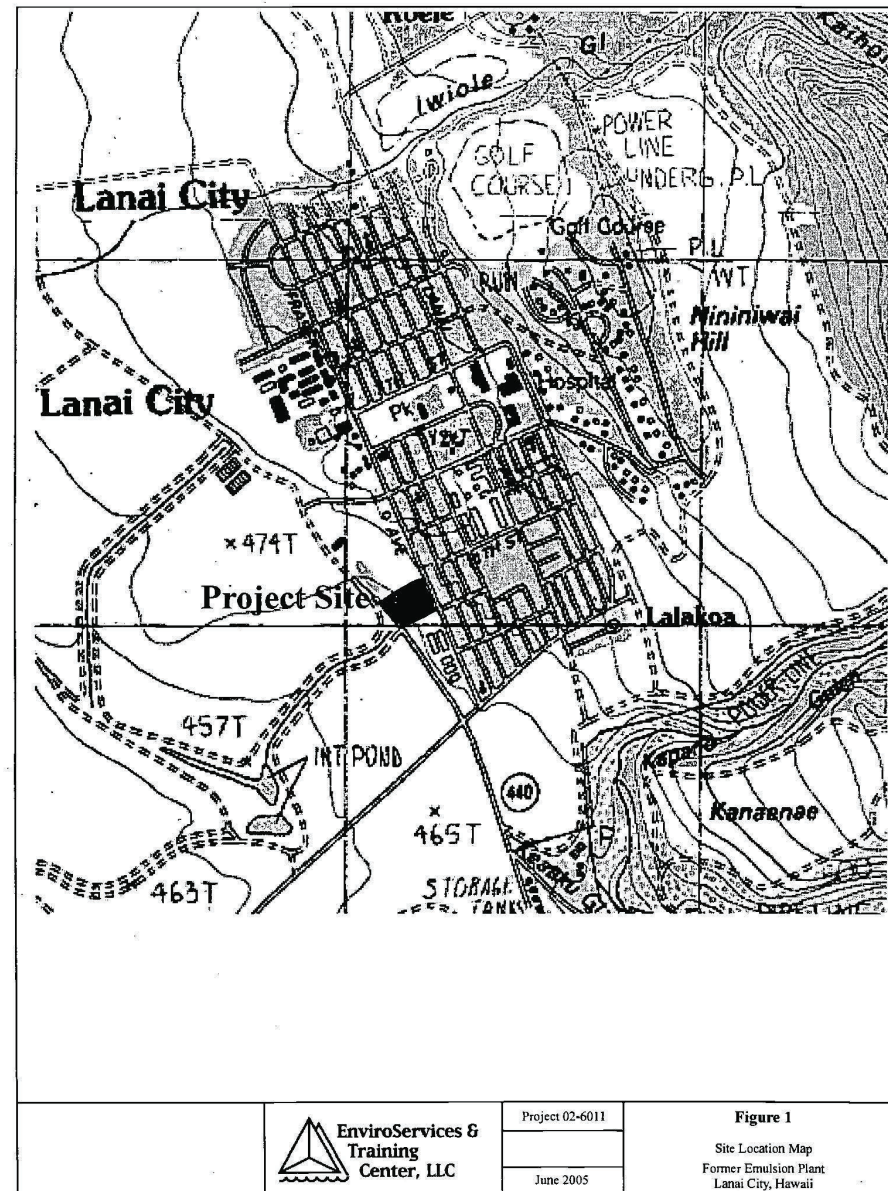
Based on findings of previous environmental investigations, this EPMP was prepared to provide guidance and assistance in managing potential risks associated with residual contamination in the soil to facility personnel and future construction workers.

### 2.2 Site Description

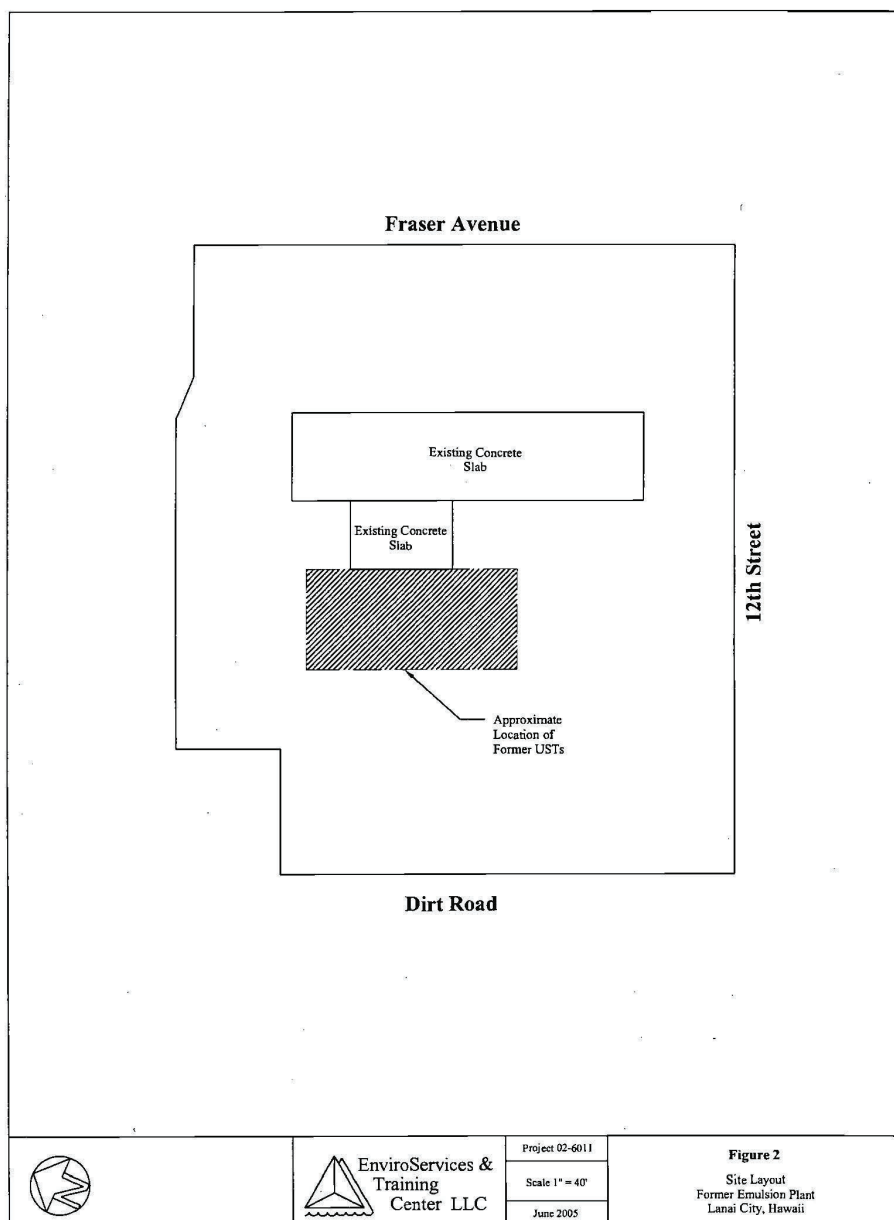
The elevation of the project site is approximately 1,550 feet above mean sea level (msl). The site and surrounding areas exhibit a gradient towards the southwest. There are no perennial streams in the vicinity of the project site and the nearest surface water body is the Pacific Ocean, located nearly 2 miles west of the site. The nearest water well is an irrigation well located approximately 0.9 miles east-northeast and upgradient of the site. Depth to groundwater near the site is estimated at 800 to 900 feet below ground surface (bgs).

The project site is bounded by Fraser Avenue to the east, 12<sup>th</sup> Street to the south, and undeveloped agricultural land to the north and west. Residential properties are located upgradient and directly across Fraser Avenue from the project site. Warehouses and offices used by Castle & Cooke Resorts, LLC (CCR) personnel are located crossgradient and directly across 12<sup>th</sup> Street from the project site.

Currently, there are no structures within the project site. The property is used as parking for heavy equipment and for CCR employee vehicles. CCR has no plans for development at the project site and anticipates that use of the site as a parking area will continue indefinitely.







## 2.3 Geology and Hydrogeology

### 2.3.1 Regional Geology

The island of Lanai is a shield volcano formed by eruptions at the summit and along three rift zones. The primary rift zone is a broad ridge that trends in the northwest direction and the two minor rift zones trend in the southwest and south-southeast directions. The Palawai Basin, located in the southern portion of Lanai, is the remnant of the caldera formed by the collapse of the shield summit. All lavas of Lanai are tholeiitic basalts, ranging from olivine-free tholeiites through olivine tholeiites to very olivine-rich oceanites. Lava flows range from 0.3 to 30 meters thick, averaging 6 meters, with very little evidence of erosion or weathering between successive flows. In general, pahoehoe flows predominate near vents and a'a flows are abundant on the lower slopes (MacDonald, et al., 1983).

Since Lanai lies in the rain shadow of West Maui and East Molokai, the island is very dry, with an average annual rainfall at the summit of approximately 100 centimeters per year. For this same reason, the northeast portion of the island is sheltered from wave erosion, with broad expanses of alluvium and beaches. Conversely, the southwest portion of the island is fully exposed to waves generated by southwestern storms, creating the phenomenon of high sea cliffs along the leeward portion of the island (Macdonald, et al., 1983).

Wind erosion on Lanai is significant, exhibited by slightly consolidated to completely unconsolidated dune ridges formed by wind blown sand along the southeast portion of the island and deposition of soil from weathered basaltic rocks that form yellowish to reddish brown unconsolidated dunes on the north and northeast portion of the island (Macdonald, et al., 1983).

### 2.3.2 Site Geology

The site is situated at an elevation of approximately 1,550 feet above mean sea level (msl). The soil at the site is classified as Lahaina silty clay, 3 to 7 percent slopes (LaB). The Lahaina series consists of well-drained soils developed in material weathered from basic igneous rock. In a representative profile, the surface layer consists of a reddish brown silty clay, the subsoil consists of a dusky red and dark reddish brown subangular blocky silty clay and silty clay loam. The substratum is soft, weathered basic igneous rock. Permeability is moderate, runoff is slow, and the erosion hazard is slight (USDA, 1972).

The soil encountered during site characterization activities included reddish brown silty clay grading to weathered basalt. Less weathered basalt was encountered at depths ranging from 50 to 75 feet bgs.