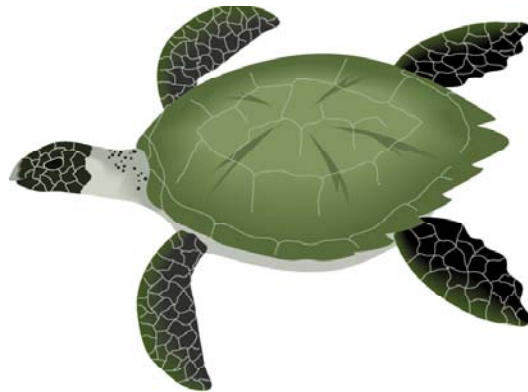




**United States Air Force
15th Air Base Wing
Environmental Restoration Program**

SITE INSPECTION REPORT PIER DUMP SITE

**Bellows Air Force Station
Oahu, Hawaii**



Appendix C Deviations from the Work Plan

Appendix C

Deviations from the Work Plan

Section Reference	Work Plan Sampling and Analysis Specifications	Description of Deviation	Justification for Deviations
Work Plan			
4.1	The excavations will be centered over six anomalies identified during geophysical surveys. [Figure 4-1 located all of the test pits within the survey grid.]	Test pit TP005 was constructed as a T-shaped test pit. The first section (TP005A) was centered over an anomaly identified for the Pier Dump investigation. The second section (TP005B) was constructed over the approximate location of a geophysical anomaly that another project identified as a potential UST.	For little added time and effort the second section (TP005B) verified the presence of metal debris. The suspected UST was revealed to be buried metallic debris.
4.2	All wells shall be abandoned after use and backfilled with bentonite.	No bentonite was used to backfill the boreholes.	After the temporary wells were removed, the loose sands within the borehole collapsed leaving no room for bentonite chips. The boreholes were shallow, and did not encounter subsurface stratification, and therefore the collapsed boreholes do not represent a conduit for contaminant migration into groundwater below the shallow water table zone, rendering the bentonite unnecessary.
5.4	Test pits shall be backfilled when field team members leave the site.	Upon discovery of potential OEW on 13 Oct 98, EOD personnel directed the field team to leave the pit open and evacuate the site. Consequently, test pit TP003 was left open after field team members left the site.	As specified in Section 5.5 of the Work Plan (Ordnance and Explosive Waste Evaluation), EOD and Bellows Security Police personnel assumed control of the site after the potential OEW was discovered. A temporary fence and barricades were placed around TP003 to limit access and the area was attended by security personnel overnight.

Appendix C (continued)
Deviations from the Work Plan

Appendix A: Field Sampling Plan			
Section Reference	Work Plan Sampling and Analysis Specifications	Description of Deviation	Justification for Deviations
1.1.1	A slide hammer with stainless steel liners and stainless steel scoops shall be used as sampling devices. The slide hammer, which is a modified split-spoon sampler, shall be used to collect samples for volatile organic analysis.	The slide hammer was not used. Brass sleeves and glass jars were used to collect soil samples. Brass sleeves were hand-driven directly into the soil to collect samples for volatile organic analysis.	The laboratory methods identify brass or stainless steel sleeves and glass jars as appropriate sample containers. Therefore, the use of brass sleeves and glass jars vs. stainless steel sleeves did not affect sample integrity, analyses, or data quality. Since the soils were loose, the brass sleeves were hand-driven directly into the soil without the use of the slide hammer.
1.2 and Fig 1-1	Downgradient wells MW5 and MW6 will be used to assess exposure pathways associated with Waimanalo Bay located east of the site.	MW6 was located within the site, 30 feet east (downgradient) of TP004.	Due to soft sand conditions that limited drill rig access, MW-6 was moved closer to the site than indicated on Figure 4-1 of the Work Plan. Given the close proximity of the site to the ocean and that significant mixing of nearshore waters and groundwater beneath the site is expected, data collected from the well is expected to provide representative information to assess exposure pathways associated with Waimanalo Bay.

Appendix C (continued)
Deviations from the Work Plan

Appendix A: Field Sampling Plan			
Section Reference	Work Plan Sampling and Analysis Specifications	Description of Deviation	Justification for Deviations
1.2.3	The portion of groundwater samples collected for volatile organic analysis shall be obtained with a bailer.	The portion of groundwater samples collected for volatile organic analysis was collected with a peristaltic pump.	<p>Statement of Problem: The peristaltic pump is generally considered to be less effective than hand bailer for collection of groundwater samples submitted for VOC analysis for the following reasons: 1) Turbulence and air bubbles may form within the tubing that creates headspace into which VOCs may volatilize out of solution; and 2) heat and friction may be generated as the pump head rolls over and compresses the flexible tubing to draw up the sample. Consequently, the potential resulting heat increases the chance that VOCs may volatilize out of solution as the water exits the tubing and is exposed to air. As depth to water increases, the pump has to be operated at higher speed to overcome the hydrostatic head and there is greater chance that heat will be generated.</p> <p>Mitigation Measures Taken: Careful regulation of the pump and careful observation of the tubing ensured that no air bubbles were observed within the tubing prior to sample collection. Given the shallow depth to water, very little pressure was needed to draw up the water allowing the pump to be operated at very low speed. As a result, heat and friction were considered insignificant.</p>

Appendix C (continued)
Deviations from the Work Plan

Table 1-1	One equipment rinsate blank shall be collected from decontaminated soil sampling equipment.	No equipment rinsate blanks were collected.	<p>All soil samples from the test pits were collected directly in sample containers eliminating the need for an equipment blank. Three soil samples including a duplicate were collected from the DPS borings. Three methods were used to minimize the potential for cross-contamination via DPS:</p> <p>1) Sample collection proceeded from the background sample location, BH001 where no contamination was anticipated to BH002 within the site; 2) soil samples were collected in stainless steel liners and did not contact the interior of the split spoon; and 3) DPS equipment was thoroughly decontaminated with Alconox and tap water prior to each use.</p>
Table 1-2	One equipment rinsate blank shall be collected from decontaminated groundwater sampling equipment.	No equipment rinsate blanks were collected.	<p>Groundwater samples from the temporary monitoring wells were collected with new dedicated/disposable sampling tubing for each well. The use of new tubing for each sampling point eliminated contact of the sample to non-disposable equipment (such as the peristaltic pump). Using the rationale and definition for the equipment blank provided in the FSP, the collection of equipment blanks was not required.</p>