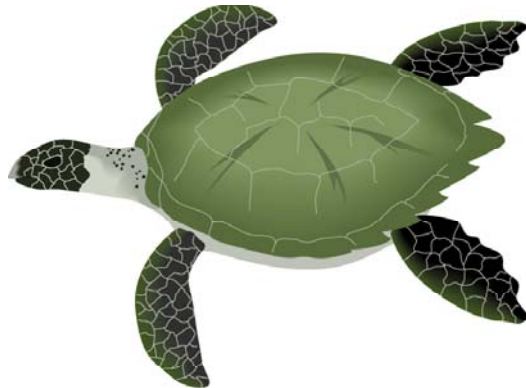




**United States Air Force  
15th Air Base Wing  
Environmental Restoration Program**

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***Final*  
SITE INSPECTION REPORT  
FOR AREAS OF CONCERN 18, 20, AND 21  
Bellows Air Force Station  
Oahu, Hawaii**



**May 9, 2003**

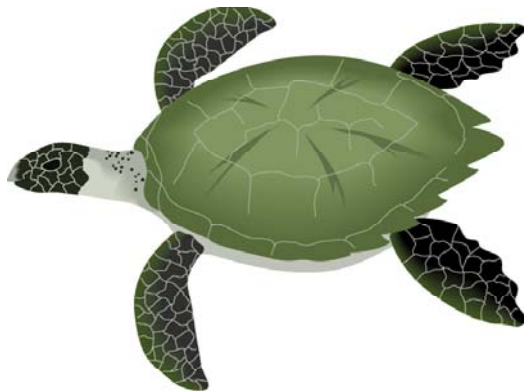
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**APPENDIX D**

**Deviations from Field Sampling Plan**

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# Appendix D:

## Deviations from the Field Sampling Plan

This appendix describes the changes to the sampling and analysis program that occurred during the Site Inspection (SI) conducted at AOCs 18, 20, and 21 at Bellows AFS, Oahu, Hawaii. With the exception of the deviations noted below, the sampling and analysis program was performed in accordance with the Field Sampling Plan (FSP) (Appendix C in the *Work Plan for Site Inspections at Areas of Concern 18, 20, and 21* (CH2M HILL, April 15, 2002).

### Site AOC 18 Trenches

The FSP stated that six trenches would be excavated and that a subsurface soil sample would be collected from each trench. A total of five trenches were excavated and five subsurface soil samples were collected. The remaining trench was not completed due to limited space within the natural depression. The trenches were planned to be approximately 2 to 4 feet wide and up to 20 feet long. Because the waste-dump material was highly unconsolidated, the sides of the trench collapsed and resulted in increased trench sizes to approximately 8 feet wide. This allowed for only five trenches to be excavated due to larger than expected excavation size. The size and location of the completed trenches provided good coverage of the investigation area and adequate inspection of the subsurface materials within the area.

The FSP indicated that the excavated materials would be placed on plastic sheeting adjacent to the trench. This protocol was followed for the first trench. During backfilling of the excavated materials, it was impossible to separate the plastic sheeting from the excavated materials; the plastic sheeting was therefore buried within the trench. For the remaining four trenches, the excavated materials were not placed on plastic sheeting. Instead, the material that was obtained for sampling was placed on a clean plastic sheet prior to sampling activities. This plastic sheeting was disposed of following sample collection.

### Site AOC 18 Surface Soil and Trench Subsurface Soil Sampling Analysis

The FSP did not state that trench subsurface soil samples would be analyzed for dioxins/furans. Due to the presence of concentrated ash layers present in some of the trenches, two of the trench subsurface soil samples (from trench 001 and 004) were analyzed for dioxins/furans.

The FSP stated that surface soil samples would be analyzed for dioxins/furans. Since ash was not present on the surface of the landfill, the number of surface soil samples analyzed for dioxins/furans were reduced from five to three. Surface soil samples 001 and 002 were not analyzed for dioxins/furans.

Subsurface soil samples from trenches 003, 004, and 005 were obtained from ash layers that contained large quantities of metal and glass. The soil samples filtered (through a sieve) to remove the metal and glass fragments prior to laboratory analysis. A standard No. 4, 0.19-inch-mesh sieve was used in the laboratory to remove these fragments.

## **Site AOC 18 Monitoring Well Locations**

The FSP indicated that three HSA borings would be developed as 2-inch-diameter monitoring wells and would be located within the boundary of the landfill. Because of difficult drilling conditions encountered within the landfill, and because of the overall size of the excavated trenches, only one monitoring well (MW001) was completed within the landfill. Two other HSA borings developed as monitoring wells were installed outside of the perimeter of the landfill. Monitoring well MW002 is located 40 feet to the southwest of MW001, and MW003 is located approximately 84 feet to the southeast of MW001.

## **Site AOC 18 Surveying**

The FSP indicated that surface soil samples and the ends of the trenches would be surveyed using GPS methods for accurate locating on SI report figures and maps. Following fieldwork, a qualified land surveyor was used to locate these samples and trenches.

## **Site AOC 20**

No deviations from the field sampling and analysis plan occurred at Site AOC 20.

## **Site AOC 21**

No deviations from the field sampling and analysis plan occurred at Site AOC 21.