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DEPARTMENT OF THE NAVY
NAVY ENVIRONMENTAL HEALTH CENTER
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Ser EP/ 001460
18 NOV 2005

From: Commanding Officer, Navy Environmental Health Center
To: Commander NAVFAC EFD Pacific, [redacted], 258 Makalapa Drive, Suite 100, Pearl Harbor, HI 96860-3134

Subj: HEALTH RISK ASSESSMENT OF SOIL AT THE REPLACEMENT OF 212 FAMILY HOUSING QUARTERS SITE LOCATED AT MARINE CORPS BASE, KANEOHE, OAHU, HI

Ref: (a) E-mail NAVFAC EFD Pacific [redacted] of 03 Oct 05

Encl: (1) Health Risk Assessment of Soil at the Replacement of 212 Family Housing Quarters Site Located at Marine Corps Base, Kaneohe, Oahu

1. Reference (a) requested NEHC conduct a baseline human health risk assessment (HHRA) for chlordane, heptachlor and heptachlor epoxide found in soils at the Replacement of 212 Family Housing Quarters Site located at Marine Corps Base, Kaneohe, Oahu. These chemicals were legally applied in the past to the housing foundations on the site to prevent termite infestation. They resurfaced during demolition and grading of the previous housing area in preparation for the development of new housing. Potential health effects from exposure to these chemicals on the site were assessed for a current/future residential scenario, and future construction and maintenance activities to ensure that the presence of these chemicals is not a threat to human health.

2. The results of the HHRA are included in enclosure (1). The results are presented in terms of incremental cancer risks and incremental non-cancer hazard for the six stockpiles of topsoil and five areas. These risks were calculated using all of the soil sampling results from each stockpile or area.

3. After reviewing the planned use of the site and all of the results, NEHC considers six stockpiles of top soil and five areas safe. However, the review did uncover an individual sample location that NEHC recommends for action. There was concern with Area 2 related to a chlordane concentration of 104 parts per million, that appears to be a hot spot. This single chlordane concentration contributed to essentially all of the cancer risk in Area 2. Residents could be exposed if the area is disturbed; children are of particular concern. It would be prudent to eliminate any potential exposure to this hot spot. For these reasons, NEHC recommends that one of the following actions be taken to ensure the safety of all current and future residents and workers on the site in the area of the hot spot:

a. Soil removal of an additional 18 inches below current grade and collection of confirmation samples. Excavation of this hot spot will reduce the risk for the entire housing area and ensure the safety of current or future residents and construction and

maintenance workers. Removal of this hot spot will also reduce the risk for potential exposure in a future scenario where soils might be disturbed again by excavation.

b. Use of a permanent and impenetrable barrier to prevent exposure resulting from soil disturbance. If barriers are used rather than soil removal, administrative controls to track the hot spot and maintain barrier preservation need to be implemented. This will prevent contact with the contaminated soil and will reduce the risk for potential exposure in a future scenario where soils might be disturbed again by excavation.

4. My point of contact for this evaluation is [redacted]

[redacted]

By direction

Copy to:
NAVMEDSUPPCMD
CNO (N-453)
NAVFAC (ENC/KPB)
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