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In reply, please refer to:
HEER OFFICE

November 15, 1995

Mr. Leighton G. M. Wong
Director
Department of the Navy
Pacific Division
Naval Facilities Engineering Command
(Makalapa, HI)
Pearl Harbor, Hawaii 96860-7300

Dear Mr. Wong:

Subject: Comments on the "Draft report for the Phase I Remedial Investigation (RI), Red Hill Oily Waste Disposal Facility, Fleet & Industrial Supply Center (FISC), Pearl Harbor, Hawaii.

The Hawaii Department of Health (DOH), Hazard Evaluation and Emergency Response (HEER) Office has reviewed the draft RI report and has provided the following general and specific comments.

GENERAL COMMENTS

DOH have found this report, "Phase I remedial Investigation Report (Draft) Red Hill Oily Waste Disposal Facility, Fleet and Industrial Supply Center Pearl Harbor, Oahu Hawaii", to be quite comprehensive and generally appears to be thorough and scientifically valid. The surface and subsurface soil and sediment sampling and analysis appears to be especially thorough and quite adequate. DOH agree with the final conclusion that the basal groundwater pathway is of potential concern and requires additional investigation. However, I have some questions about the preliminary assessment of the basal groundwater, the Dense and Non-aqueous Phase Liquids (DNAPLs), and a few general comments on the contents of this report.

BASAL GROUNDWATER AND DNAPLs

The report does not give any reason why more effort was not expended on a preliminary investigation of the basal groundwater contamination during this phase I investigation. Sampling of the existing basal groundwater wells in the vicinity of the contaminated site for groundwater contamination, or at least an

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inventory of these existing basal wells at the site would have been helpful. Was such type of investigation ruled out in the scope of work for the Phase I study? Also, the report does not mention the presence of DNAPls in the groundwater. If any of the potential groundwater contaminants are DNAPLs, then this should be considered as the potential contaminant transport pathway, as DNAPLs may not follow the expected groundwater pathway. Other specific comments are discussed in detail in the following paragraphs.

SPECIFIC COMMENTS

Section 5.4.1.1 Groundwater Pathway (Stilling Basin)

The report uses Attenuation factors of 10 and 100 as the lower and the upper limit respectively for the groundwater pathway beneath the Stilling Basin. The Attenuation factor represents the attenuation and retardation associated with the transport of contaminants in the subsurface. It can be seen in Appendix C, that the low permeability clay layer (Silty Clay) in Boring 04 (RH-B04 [MW-03]) is limited to less than 10 feet. Where as in other borings, it extends beyond 10 feet. Since all the borings around the Stilling Basin do not encounter a low permeability tuff and since the low permeability clay layer in all these borings is of variable thickness, DOH recommend an attenuation factor of 10 for the Stilling Basin site. An attenuation factor of 100 may result in misleadingly low contaminant concentration values.

Also, compounds such as Total Fuel Hydrocarbons (TFH), 1-1, Dichloroethene (1,9-DCE), Benzo[a]anthracene (B[a]A), and others are some of the compounds that occur in perched groundwater, in concentrations of concern to environment and health. These compounds should also be of concern to the basal groundwater because the tuff which causes the perched groundwater is not really continuous, as can be seen from the boring logs (Appendix C) taken from the borings constructed around the stilling basin. Hence, the concentrations entering the basal water where the tuff is not present could conceivably be the same as those observed in the perched groundwater.

Appendix C Ogden Exploratory Borings Logs

As can be seen from the boring logs in Appendix C and the Figure 2-4, the borings around the Stilling Basin encountered tuff at about 25-35 feet below ground surface (bgs), except for boring B04 and the background boring B-01. The boring B04 is less than 100 feet from all the other borings and boring B01 is about 25 feet upslope of the other borings. I presume wind laid tuff deposited over the entire area. But, the presence of tuff in all but two of the borings indicate a localized distribution

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