**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION IX**
**75 Hawthorne Street**
**San Francisco, CA 94105**

April 19, 2007

Ms. Nora Macariola-See
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive Suite 100
Pearl Harbor, HI 96860-3134

Subject: Draft Environmental Impact Statement (DEIS), Kilo Wharf Extension, Milcon P-502, Apra Harbor Naval Complex, Guam, Mariana Islands (CEQ # 20070085)

Dear Ms. Macariola-See:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

The project proposes to extend Kilo Wharf 400 feet to provide adequate berthing facilities to support the new T-AKE class multi-purpose dry cargo/ammunition ship, which will replace other supply and ammunition ships by 2009. The project will involve dredging of approximately 60,000 cubic yards of submerged sediment. The West extension alternative is the Navy's preferred alternative.

Based on our review, we have rated the DEIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions"). We have concerns regarding impacts to coral resources, the adequacy of mitigation for these impacts, and the need to consider a less damaging alternative that would reduce impacts to coral resources.

The preferred alternative will eliminate approximately 3.28 acres of coral reef and degrade as much as 14.88 additional acres due to dredging-related sediments, yet there is limited mitigation identified to minimize the indirect impacts from sedimentation. EPA recommends the Navy include: (1) operational controls to ensure extreme dredging conditions are prevented; (2) biological and/or turbidity monitoring so dredging activities can respond to adverse coral response/conditions; and (3) seasonal dredging prohibitions during coral spawning periods. Additionally, of the three options identified for compensatory mitigation for coral impacts, EPA recommends restoration of coral reefs within Sella Bay as the most viable and effective.

We also recommend an additional alternative, a reduced-length west extension, be discussed and evaluated if it would meet the project purpose and need. If this less damaging alternative does meet the purpose and need, an analysis of this alternative would be required under Clean Water Act Section 404 and should be evaluated in the Final EIS.

EPA appreciates the opportunity to review this DEIS. When the Final EIS is released for public review, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at 415-972-3846 or Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

/s/
Nova Blazej, Manager
Environmental Review Office

Enclosure: EPA's Detailed Comments
Summary of EPA Rating Definitions

CC: Michael Molina, U.S. Fish and Wildlife Service
Gerry Davis, National Marine Fisheries Service
George Young, US Army Corps of Engineers
Mike Gawel, Guam Environmental Protection Agency

**Mitigation for Sedimentation Impacts**

The project alternatives will impact coral resources both directly from dredging, as well as indirectly from sedimentation. We are pleased that the DEIS discusses indirect impacts of sedimentation on coral reefs, however the impacts considered appear to include only mortality by sediment deposition or burial. Sediments affect corals in a variety of ways including burial, abrasion, light attenuation, toxicity to larval stages, and prevention of recruitment. Different life stages, ages, and morphologies of coral vary in their sensitivity and response to sediments. It is important that sub-lethal impacts to corals also be identified and minimized.

The proposed mitigation to reduce sedimentation impacts is limited to the use of silt curtains, which the DEIS acknowledges may not always be effective (p. 4-9). The Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR 1505.2(c), require federal agencies to "state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not" when making its Record of Decision (ROD). EPA recommends the following additional mitigation be implemented and recorded in the ROD to avoid and minimize environmental harm to coral resources.

***1. Avoiding above-average dredging/release rates.*** In addition to the 3.28 acres of direct substratum impacts associated with the dredge footprint, buffer, and fill areas, sedimentation would impact an additional 1.69 acres under average conditions[1], and 14.88 acres on dredging days where extremes[2] in daily production and release of dredged material are reached (Table 4-1). The DEIS defines extreme conditions as undocumented high levels (8%) of sediment release into the water column and 24 continuous hours of very productive dredging (p. 4-22). It states that if these extreme conditions do occur, they would happen occasionally rather than continuously over the duration of dredging. No information is provided as to why these extreme situations would be necessary or if they are expected to occur in order to conform to the construction schedule identified (6 months of dredging for the preferred alternative). There is no discussion of any efforts to control dredging to ensure the average daily dredging rate is not exceeded. Because a significantly larger impact area would be affected under extreme cases, including high coral cover areas, it is important that every effort be made to avoid extreme dredging conditions and to avoid exceeding water quality standards.

> *Recommendation:* The FEIS should provide information regarding the expectation for extreme dredging days. Since it is within the Navy's control to manage dredging rates and to cease dredging operations under unfavorable conditions, EPA strongly recommends mitigation commitments be made to institute operational controls for project implementation to ensure daily production and release of dredged material does not exceed average dredging conditions (average daily production rate of 900 $yd^3$/day and

[1] Average daily production rate of 900 $yd^3$/day or 688 $m^3$/day and average dredged material release rate of 0.45%
[2] Average daily production rate of 2,000 $yd^3$/day or 1,530 $m^3$/day and average dredged material release rate of 8 %

average dredged material release rate of 0.45 percent). EPA recommends a commitment to this mitigation be included in the FEIS and the ROD.

2. ***Monitoring and seasonal dredging prohibitions.*** We understand there is substantial uncertainty in predicting indirect impacts from sedimentation. EPA recommends that careful monitoring be conducted before, during, and after completion of dredging to both determine the actual impacts to corals over the full aerial extent of sediment plumes and to manage the dredging process to minimize these impacts.

In our scoping comments dated September 1, 2005, we recommended a Biological Monitoring Plan be developed to monitor the stress level of coral organisms during dredging, with thresholds established, which if exceeded, could trigger suspension of dredging until coral condition improved. We identified a new high-resolution technique developed by the National Coral Reef Institute as possibly being available for this use (See http://www.publicaffairs.noaa.gov/releases2005/aug05/noaa05-r481.html). As an alternative to monitoring coral condition during dredging, we recommend a comprehensive turbidity monitoring program during dredging to insure that water quality standards are not exceeded outside of the silt curtains. Turbidity monitoring should also be linked with thresholds, which, if exceeded, could trigger suspension of dredging.

We recommended in our scoping comments that mitigation include cessation of dredging during periods of coral spawning, which the DEIS identifies as occurring mostly during the summer months with peak spawning in Guam occurring 7 to 10 days after the July full moon (p. 3-32). Neither biological monitoring nor dredging prohibitions during peak spawning are discussed in the DEIS.

*Recommendation:* EPA recommends biological and/or turbidity monitoring occur during dredging activities to identify adverse coral response and that mitigation be included to suspend dredging in such cases. We also recommend dredging activities be scheduled to avoid peak spawning periods. Additionally, since direct structural construction-related impacts to the coral reef are uncertain, monitoring of direct impacts should occur, including assessments of coral size classes, mortality, and partial colony mortality, and algal cover. An after-construction assessment of impacts to the coral reef ecosystem, including aerial extent, should be conducted as the basis for compensatory mitigation. EPA recommends a commitment to this mitigation be included in the FEIS and the ROD.

**Alternatives Analysis / 404(b)(1) Least Environmentally Damaging Practicable Alternative**
The purpose and need for the project is to provide "adequate berthing facilities" to support a new class of ammunition ship, the "T-AKE", that will replace existing ammunition ships currently forward-deployed to the Apra Harbor Naval Complex (p. ES-1). The existing Kilo wharf provides 400 feet of berthing, and with the two breasting dolphins (extensions) that flank either side, there is a total of 641 feet for ship berthing. The T-AKE requires 800 feet for berthing (p. 1-4), but the wharf must also accommodate the ship's two cranes, which are 430 feet apart on the ship, to avoid repositioning the ship when unloading. The alternatives propose an addition of 400 feet to the existing wharf for a total wharf length of 800 feet, but the preferred West Extension alternative does not consider the existing eastern dolphin, which would add

approximately 120 feet to the berthing area, providing a total of 920 feet with a 400 foot wharf extension. Therefore, it appears that a western wharf extension of less than 400 feet could accommodate the T-AKE cranes and still meet the purpose and need for the project.

The U.S. Army Corps of Engineers cannot permit the discharge of dredged or fill material if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem. Since the DEIS does not explain why a 400 ft. extension is required instead of less damaging alternatives, such as a 250 or 300 ft. western extension, the alternatives considered do not appear to evaluate all practicable alternatives to satisfy the project purpose and need. Since reducing wharf length to the west would minimize impacts to the high coral cover areas in Zone 8 to the west of the extension, it is possible that the preferred alternative may not be the Least Environmentally Damaging Practicable Alternative (LEDPA) as required under the 404(b)(1) Guidelines (Section 404 of the Clean Water Act). The DEIS does not indicate how much cargo staging area is deemed adequate to accommodate the T-AKE.

> *Recommendation:* EPA recommends evaluating a project alternative consisting of a reduced-length west extension if this would meet the project purpose and need. Since a reduction in wharf length to the west would reduce direct and indirect impacts to coral resources, a reduced length west extension alternative should be considered and selected if practicable.

**Compensatory Mitigation**

The Navy would implement compensatory mitigation through the U.S. Army Corps of Engineers permit required for the proposed project (p. 4-33) and the Navy and the resource agencies are in the process of determining the scale and types of mitigation required. The federal and Government of Guam resource agencies have proposed an upland watershed reforestation project to control the sediment sources entering Sella Bay and impacting corals. The draft Restoration Plan for Sella Bay Watershed prepared by Guam Departments of Agriculture and Guam Environmental Protection Agency (Guam EPA) (Feb 2007) was not included in the DEIS. The Navy also proposes the use of artificial reefs and permanent boat moorings as mitigation, but no habitat equivalency analysis or mitigation plan was included in the DEIS.

> *Recommendation:* Append the Restoration Plan for Sella Bay Watershed to the FEIS and include a habitat equivalency analysis or mitigation plan for the proposed use of artificial reefs and permanent boat moorings in the FEIS.
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> EPA supports and recommends the watershed reforestation project at Sella Bay over artificial reefs and permanent moorings for compensatory mitigation. The resource agencies do not support artificial reefs and permanent moorings because these projects are not likely to replace the lost ecosystem functions at Kilo wharf. Reforestation of 500 acres in the Sella watershed is a project of sufficient scale and likely success to restore a healthy coral reef at Sella Bay. The habitats and species at Sella Bay are similar to those at Kilo Wharf. To assure successful mitigation at Sella, we recommend aggressive erosion control and fire prevention practices, long term assurances that the land will remain as forest, control of feral ungulate populations, and a comprehensive monitoring

program designed to measure progress toward specific performance standards. EPA recommends a commitment to this mitigation be included in the FEIS and the ROD.

**Coral Reef Impact Assessment**

The DEIS defines "coral reef communities" as those areas where living corals constitute a sizable fraction of bottom cover (Zones 7, 8, and 9) (p. 4-15). EPA disagrees with this definition. Live coral cover by itself is not an adequate metric to describe the ecological functions of coral reef ecosystems. For example, percent cover may under represent coral habitat and functions in areas where there are abundant small corals, or where many corals are dead because of recent disturbance. The discussion of marine ecosystem impacts (Section 4.3) appears to be based on coral reef assessments conducted by the Navy's consultant (Appendix I) and overlooks the more complete surveys reported in the Resource Agency Marine Assessment (Appendix J).

*Recommendation:* EPA recommends that the impact analysis reflect all of the available information on the coral reef ecosystem at Kilo Wharf. The impacts analysis should consider the Resource Agency Marine Assessment (Appendix J) because it provides a more complete assessment of the marine ecosystems, including coral size classes and density, fish, other invertebrates, algae, etc.

**Operational Phase Impacts / Mitigation**

The DEIS states that no operational impacts are anticipated from the preferred alternative. However, sediment in the area is presently re-suspended during ship berthing and unberthing operations, and the proposed project would involve similar ship berthing procedures with similar short-term and intermittent sediment re-suspension (p. 4-12). The DEIS does not provide the basis for the conclusion that there will be no operational impacts, especially since the T-AKE is 125 feet longer than the T-AE ammunition ships it will be replacing.

The DEIS identifies potential mitigation when it discusses impacts from bow anchors. The DEIS states that bow anchors from transient ships longer than the extended wharf should not be dropped further west than the west end of the wharf to avoid impacts to benthic habitat Zones 7, 8, or 9 (i.e., the coral reef community). There is no discussion of whether this will be a condition of operation or how it would be enforced.

*Recommendation:* In the FEIS, substantiate the conclusion regarding similar operational impacts from the larger T-AKE ship. If there will be operational impacts from re-suspended sediment, identify mitigation to reduce this impact. Identify whether and how bow anchor prohibitions will be enforced for larger transient ships. EPA recommends a commitment to this mitigation be included in the FEIS and the ROD.

**Stormwater Pollution Prevention**

The project alternatives involve extension of stormwater drainage facilities to serve the full length of the wharf (p. 2-7) and, the DEIS identifies the need for a Clean Water Act Section 402 National Pollution Discharge Elimination System (NPDES) permit for storm water discharges associated with construction activities (p. 1-7). The DEIS does not identify what stormwater management practices will be taken to prevent pollutants from entering waters during the construction and operation phases. This is important because coral reefs and marine ecosystems are sensitive to water quality changes. In addition, Guam EPA recently adopted strong local

stormwater protection measures and published the "CNMI and Guam Stormwater Management Manual".

> *Recommendation:* The Navy should commit to the stormwater management policies required by Guam EPA and identify specific structural and operational stormwater management practices in the FEIS. This should include an identification of the practices that will be implemented during the construction phase, as well as the project design features that will prevent stormwater pollution during the operations phase, including proper disposal of wash waters and spill response.

**Cumulative impacts**

We have the following comments and recommendations on cumulative impacts:

- The cumulative impacts assessment discusses other wharf and dredging projects and the impacts these projects have on coral reef communities in inner- and outer- Apra Harbor (p. 4-58, 4-63 through 4-64). The DEIS identifies the Kilo Wharf extension project as directly impacting 0.15 percent of the total live coral habitat in the region of influence (p. 4-18). To sufficiently represent cumulative impacts to this resource, the cumulative impacts section of the FEIS should identify what percent of total live coral habitat has already been lost in the region. The future projects identified that will impact coral habitat should be discussed in this context. We recommend using a table format to present the range of acres or percent of coral that will be lost/degraded by each of these projects.
- The DEIS states that the Polaris Point projects would increase land and water use intensity on and around the peninsula, require significant infrastructure upgrades and site development activities, and increase traffic volumes on local roads. The substantial indirect impacts from sedimentation and stormwater pollution to coral habitats and water quality from these projects should be discussed.
- The cumulative impacts section identifies the planned Marine Corps relocation to Guam for which scoping comments are now being accepted. This project should be added to Table 4-7 and a greater discussion included on cumulative impacts to coral habitats and land and water resources in the context of substantial development and population increases that would occur.