EXHIBIT U

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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August 25, 2009

Major General David F. Bice
Department of Defense
Joint Guam Program Office (JGPO)
2221 S. Clark St. Suite 900
Arlington, VA 22202

Subject: EPA comments on the early release Draft Environmental Impact Statement (erDEIS) for the Guam and CNMI Military Relocation, July 2009

Dear Major General Bice:

EPA appreciates the opportunity to review the early release Draft Environmental Impact Statement (erDEIS). Due to the extremely short period of time within which the Department of Defense (DoD) requested comments, EPA's review was focused on identifying environmental concerns in areas of our regulatory authority for certain project actions[1]. Our detailed comments are enclosed.

EPA understands the challenges that DoD is facing in meeting its 2014 deadline for the Marine relocation. We also appreciate DoD's stated objective to avoid the creation of "two Guams", where the standards of living and access to services provided to the military population are not afforded to, or occur at the expense of, local residents. This is a challenge since local residents are disproportionately underserved and socio-economically impacted under existing conditions compared to other U.S. communities. To our knowledge, no other local community with such pre-existing vulnerabilities has been asked to bear the impacts of such a large military action.

Since the erDEIS is an in-progress working document, the data gaps and incomplete information made it difficult to accurately identify the impacts that DoD's proposed actions will have on Guam's population and environmental resources. Accurate baseline data is often absent, affecting the analysis and impact conclusions. For example, the lack of site-specific impact assessment for a number of resources, such as surface water, groundwater, coral reef ecosystems, and wetlands did not contain the baseline data to analyze the impact conclusions. In some cases, a reasonable impact assessment methodology is identified but is not applied to the project sites; instead conclusions are made, without apparent scientific basis, that impacts would be less than significant because Best Management Practices (BMPs) would be followed. Without site-specific impact analysis, the assessments of the Marine relocation actions appear more appropriate for a programmatic-level National Environmental Policy Act (NEPA) document, rather than the project-level analysis DoD intends it to be.

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1 EPA's review was limited to the air quality, water resource, and marine biological communities sections of Volumes 2, 4, 6 and 7 of the erDEIS

We have identified significant overarching concerns that must be addressed before the release of the public DEIS. These concerns should come as no surprise, since we have communicated them on numerous occasions, through formal letters (beginning with our detailed scoping comments dated May 21, 2007), and through many formal and informal meetings and discussions. Our most pressing concerns relate to Guam's already stressed drinking water and wastewater infrastructure, which has the potential to significantly affect public health and safety. In addition, project impacts could significantly degrade Guam's federally designated sole source aquifer (SSA), as well as cause or contribute to violations of water quality standards. Air quality impacts are also of concern. We note that we were unable to confirm the non-applicability of general conformity.

1. Impacts to Guam's drinking water/wastewater infrastructure and water supply

The project will result in an island-wide shortfall in water supply projected for 2013-2015 (construction phase of the project), significantly impacting Guam Waterworks Authority's (GWA) public water system. Because the project construction workforce would reside within the GWA public water system service area, DoD assumes that GWA will make the necessary upgrades; however, GWA and local Gov Guam agencies have serious financial/resource constraints. The erDEIS does not disclose the potential impacts to public health and safety should the GWA system expansions not occur at the level sufficient to support the increased construction-phase population. GWA's Northern District Wastewater Treatment Plant is also out of compliance with its Clean Water Act (CWA) discharge permit, and construction of the project will increase flows to this non-compliant plant. In addition, there is uncertainty whether the Northern Guam Lens Aquifer, a federally designated as a Sole Source Aquifer under the Safe Drinking Water Act, can sustainably yield needed water supplies. Contamination threats to the aquifer from point and non-point sources are also a concern, but were not analyzed in the erDEIS.

Recommendations:

- The DEIS should accurately identify the baseline conditions for the drinking water and wastewater systems so that the impact assessment can reflect the potential public health and safety impacts that could occur should GWA not successfully implement the needed system expansions and improvements. For wastewater, we understand some joint DoD/GWA studies are being pursued. Such studies may help identify and address impacts expected to occur during the interim timeframe. This information should be incorporated into the DEIS for an improved project-level analysis.
- The DEIS should disclose the funding requirements needed to implement the long-term water and wastewater alternatives and associated actions needed to ensure long-term compliance with federal environmental laws.
- To address uncertainty regarding the aquifer sustainable yield, sustainable yield confirmation studies should occur so that additional information can be included in the DEIS. The USGS study, which will take 3 years to complete, should commence as soon as possible.
- The DEIS should disclose impacts to the aquifer from point and non-point sources, and describe robust stormwater management and source water protection programs, in

cooperation with Guam Environmental Protection Agency, to protect the aquifer and comply with water quality standards.

2. Impacts to Coral Reef Ecosystems

We have substantial concerns regarding the Carrier Vessel Nuclear (CVN) berth project's direct and permanent impacts to 39 acres of coral reefs, a magnitude unprecedented in recent permit history for the U.S. Pacific Islands. Because the preferred alternative is not the "Least Environmentally Damaging Practicable Alternative", it does not meet Clean Water Act permit requirements. Additionally, the proposed mitigation underestimates the amount of compensatory mitigation required to compensate for impacts to coral reefs. Because of inadequacies in the characterization of impacts and compensatory mitigation, EPA considers the CVN berth project a potential candidate for elevation under CWA 404(q).

Recommendations:

- Complete coral reef characterization and impact assessment in accordance with EPA, USFWS, and NOAA's previously communicated protocols.
- Accurately estimate mitigation to replace lost ecosystem functions, according to EPA, USFWS, and NOAA's recommendations.
- Omit the "proxy" approach for estimating cost of mitigation from the erDEIS.
- Develop an approvable "In-lieu Fee" program for Guam for compensatory mitigation in conjunction with federal and Guam resource agencies.

3. Air Quality/Energy

The project has the potential to seriously degrade air quality and cause health impacts from large increases in the use of high-sulfur fuel for both transportation and power. The traffic analysis predicts significant traffic congestion during the construction phase, and Guam's current exemption from low-sulfur fuel requirements means emissions will contain higher levels of particulate matter and other air toxics, potentially impacting the health of Guam's medically-underserved low-income population, of which over one-third are children. Since Guam has two areas that are in nonattainment for the sulfur dioxide National Ambient Air Quality Standard (NAAQS), these increases in fuel use could contribute to or expand the areas in Guam where these health-based air-quality standards are not met. Additionally, DoD's long-term energy alternatives include a new power plant in an SO_2 nonattainment area. This will present permitting difficulties, especially since EPA is currently reviewing the existing sulfur dioxide standard and expects to soon propose final actions that could lead to a lower, more protective, standard.

Because we have not yet received the air quality analysis (JGPO estimates Sept 2009), we cannot review the air quality impact assessment methodology and assumptions and cannot confirm the determination made in the erDEIS that general conformity is not triggered. We will provide comments to JGPO when the full air quality analysis is shared with EPA.

Recommendations:

- The DEIS should evaluate a long-term energy alternative representing a diversified energy strategy for meeting DoD energy needs that includes renewable energy and energy efficiency. In developing this strategy, we recommend DoD consider ways in which it could foster increased energy efficiency off-base as well as on-base.
- For mobile source pollutants, quantify mobile source air toxics along congested roadway segments to identify potential health impacts to sensitive populations, and identify measures to mitigate these impacts.
- Evaluate opportunities in the DEIS for using ultra-low sulfur diesel, available from Japan, in construction-related vehicles/equipment and energy generation for the protection of human health and to lessen additional inputs in SO_2 nonattainment areas. Evaluate the use of biodiesel for transportation fuels in the DEIS, consistent with the Energy Policy Act and Navy policy.

4. Adaptive Program Management Approach

While this approach has not been fully developed and was not included in the erDEIS, we would like to express our serious concerns regarding the use of adaptive management in this context. We believe that if DoD continues down this path, the true extent and magnitude of impacts will not be disclosed in the EIS. We are available to discuss this further when we have received more information; in the mean time, we request that the term "Adaptive Management" or similar variations not be used in this context, and we urge DoD to rethink this approach.

We would like to work with DoD staff in the Joint Guam Program Office and Naval Facilities Engineering Command Pacific to address as many of these issues as possible before the DEIS public release. We understand this may be challenging because of deadline pressures, however, our concerns are of sufficient magnitude that definitive action must be initiated towards resolution as soon as possible.

We look forward to working closely with you on addressing these concerns. We will continue to provide comments and assistance to DoD while work on improving the erDEIS proceeds.

Sincerely,

Enrique Manzanilla, Director
Communities and Ecosystems Division

cc: Kyle Fujimoto, NAVFAC Pacific
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August 25, 2009

EPA Detailed Comments on Early Review Draft Environmental Impact Statement (erDEIS) for the Guam and CNMI Military Relocation, July 2009

WATER RESOURCES

Source Water

Guam relies heavily on the Northern Guam Sole Source Aquifer (SSA) for much of its drinking water needs. Sustainable practice in this context requires protections above and beyond minimum standards so that the aquifer will be permanently protected. The costs of clean-up or replacement would be much greater than the cost of providing additional protections. The following comments address sustainable yield of the Northern Guam SSA, identification of potential impacts of the aquifer due to surface water impacts (stormwater and nonpoint source runoff) and the need to identify appropriate mitigation measures.

Sustainable Yield of the Northern Guam Lens Aquifer (NGLA)

The erDEIS states that impacts on groundwater/aquifer are not considered significant because the total increased extraction by DoD is below maximum sustainable yield of the aquifer basins. We disagree with this conclusion for the following reasons:

There is uncertainty regarding the sustainable yield. The sustainable yield estimates vary considerably between the 1982 and 1991 studies. The erDEIS uses the 1991 sustainable yield estimate of 80.5 MGd instead of the1982 estimate of 57.4 MGd, while acknowledging that both studies are recently cited as being the current estimate (including the USGS 2007 citation of 57.4 MGd in the "Recent Hydrologic Conditions – Guam) (Vol. 2, p. 4-10). The total cumulative use of groundwater for all proposed action alternatives would total approximately 69.4 MGd (Vol 7, Sect 3.4.2).

The erDEIS attributes part of the difference in the two estimates to a change in the subbasin boundaries and chooses to use the higher 1991 estimate, stating that it is more recent and was more comprehensive. There is no information as to what percentage of yield the subbasin boundary differences could reasonably account for, and no discussion as to what other factors could cause the remaining difference. Because the large difference in these two values, more discussion is warranted. It also interjects a substantial amount of uncertainty in assessing impacts. This uncertainty should be considered in determining impact significance (40 CFR 1508.27 (b) 5).

Sustainable yield of sub-basins is exceeded

The 22 proposed DoD wells appear to be clustered in areas rather than spread throughout sub-basins, which could result in localized stress within subaquifers and may increase the cone of depression and increase the risk of saltwater intrusion. A comparison of Table 4.1-1 (Vol 2, p 4-11) with Table 3.2-5 (Vol 6, page 3-33) indicates that three sub-basins (Agafa Gumas, Finegayan, and Yigo) will approach or exceed sustainable levels. Indeed, Finegayan and Agana subbasins are seeing increased salinity, suggesting that overdrafting is imminent or has begun. This threatens sustainability of supply and water quality, affecting a beneficial use of the water

resource. Clustering wells in a few places also does not add the flexibility needed for an adaptive management approach.

Simply approaching the sustainable yield is significant on overall groundwater use for Guam. This is because the project renders this resource unavailable for use by Guamanians. Therefore, we do not agree that there would be no reduction in the availability or accessibility of water resources as a result of the project (v2: 4-90).

Recommendations: Sustainable yield confirmation studies should occur. We recommend that the USGS study, which will take 3 years to complete, commence as soon as possible. We believe JGPO may have stated that a University of Guam review of the 1991 sustainable yield was being pursued. If this is correct, we support this review since it will provide more timely information and reduce the uncertainty of utilizing this sustainable yield value for planning purposes. A conservative approach would be to use the yield from the 1982 study for planning purposes until confirmation of a higher sustainable yield is performed. Regardless of which approach is used, until the sustainable yield estimate used is confirmed, there is not sufficient basis to deem the impacts to the NGLA less than significant.

Mitigation measures should be identified to prevent degradation in the three aforementioned sub-basins. Monitoring triggers will need to be identified. Relying on monitoring alone is not an adequate mitigation measure given that three sub-basins may exceed sustainable yields. Reasonable mitigation measures could include increased water conservation in existing DoD facilities, and reduction in leakage in GWA distribution system.

The relationship between the existing and proposed wells, rate of withdrawal, and response of the aquifer needs further explanation. We also recommend that the DEIS make clear what coordination will occur with GWA regarding future GWA wells, and the relationship between proposed GWA wells and DoD wells.

Potential Contaminant Impacts on Sources of Drinking Water

The erDEIS does not provide adequate detail regarding new contaminant sources (gas stations, fuel storage sites, dry cleaners, stormwater discharge, maintenance yards, spent ammunition, etc.) and their locations and proximity to wellheads to allow EPA to evaluate the risk to groundwater that will result from the project.

The relationship between the numerous sink holes identified in the erDEIS, the management of stormwater, and the protection of groundwater is not discussed. The three sub-basins underlying Anderson AFB contain approximately 100 dry wells used to facilitate the flow of stormwater. Data indicate that this stormwater often contains pollutants which negatively impact groundwater quality (Vol 2, p. 4-8). The erDEIS acknowledges that the Anderson AFB Stormwater Pollution Prevention Plan has prevented "extensive" groundwater contamination (Vol 2, page 4-19), implying some level of groundwater contamination is occurring. The relationship between the dry wells, as potential sources of contaminants, and stormwater quality requires further discussion. The quality of the stormwater should be disclosed and estimates of how it will

change with the project build-out and operations discussed. The distance between the bottom of the dry wells and the first encountered groundwater should be identified, as well as the proximity of the dry wells to existing and proposed groundwater wells. For example, what will be the time of travel from the base of the dry well to the nearest well used for drinking water? EPA would like to review the proposed BMP(s) that will be used for the sink holes to protect groundwater quality. Additionally, a map is needed depicting the proximity of existing groundwater wells, new groundwater wells, dry wells, VOC (i.e., trichloroethylene and tetrachloroethylene) plumes, and sub-basin boundaries.

Recommendations: Additional information identified above is needed.

Source water protection for the northern aquifer is essential. We encourage DoD to complete a source water assessment for each proposed and existing wellhead to better understand contaminant threats to the Northern Guam SSA. Protecting groundwater from contaminants protects public health through ensuring a clean, safe drinking water supply. Reducing the threat of waterborne illnesses helps save money by eliminating costly health care expenses, lost wages, work absences, decreased job productivity, and additional treatment costs incurred by Public Water Systems required to meet drinking water quality standards. Source water assessments, required of states by the 1996 Amendments to the Safe Drinking Water Act, provide a comprehensive plan to achieve public health protection. Additional information regarding source water assessments can be found at:
http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=Assessments

EPA previously advised[1] against DoD's proposal to install a septic tank and leach field at the Anderson AFB Northgate and access road (Vol. 2, p. 2-93), and note that this proposal is included in the erDEIS. We continue to advise that DoD avoid any type of onsite wastewater treatment and disposal system including septic systems.

The erDEIS states that injection wells and ponding basins are used at Anderson AFB and elsewhere to direct stormwater flows into the aquifer. In addition to utilizing BMPs for stormwater in new project areas, DoD should consider retrofitting existing structures to ensure pollutant removal is being maximized.

Fena Reservoir Impacts

The erDEIS indicates that there is an existing sedimentation problem in the Fena Reservoir watershed. The entire Fena Reservoir watershed consists of moderately to steeply sloped lands, with a soil type that contributes to rapid runoff rates and significant erosion, particularly in areas where the native vegetation has been removed. With 115 inches of rainfall a year, eroded soil is ultimately transported to the reservoir itself by the runoff, and contributes to ongoing reduction of reservoir capacity due to sedimentation. Sediment influx into the Fena Reservoir has reached levels whereby the Navy has contracted with the Division of Forestry, Guam Dept of Agriculture to reforest portions of the watershed that drain into the reservoir (vol 2, p. 4-49).

[1] EPA comments on the Draft Description of Proposed Action and Alternatives (DOPAA), sent May 15, 2008

We are concerned with the additional erosion that would occur with increased training activities on steep slopes in the Naval Munitions Site, including live fire training with use of tracers (Vol 2, p. 3-51), which can cause fires and increase erosion. Source water protection for the Fena Reservoir watershed is also important. Impacts and mitigation from activities at the Munitions Storage Facility are briefly discussed, but because these could degrade water quality in the reservoir, they should be more fully detailed and quantified. Of particular concern are statements that Fena Reservoir is suffering from low dissolved oxygen and is becoming eutrophic.

> *Recommendations:* Discuss more fully the potential impacts to source water in Fena Reservoir. Aeration or other mitigation for eutrophication should be considered. The erDEIS concludes that without implementation of a comprehensive watershed management plan, the rate of sedimentation would continue unabated, and may increase as climatic conditions and land development increase runoff, and therefore erosion (Vol. 6, p. 2-24). It is important, then, that a comprehensive watershed management plan be included as part of the project. DoD should also increase monitoring of water quality in Fena Reservoir as a result of additional training activities and munitions inputs.

Drinking Water

Impacts on Guam Drinking Water (Public Water System) Supply

According to the erDEIS, the project will result in a significant island-wide shortfall in water supply projected for 2013-2015, with the largest shortfall in 2014. DoD estimates the maximum population increase associated with the proposed action to occur in 2014 with a total of 79,184 persons, including 18,374 construction workers and induced growth of 39,481 (Vol.1, Table ES-2). Most of the construction workers and induced growth population will occur off-base. It is estimated that GWA will be at least 4.1 MGd short in production in 2014 if GWA is successful in increasing production by 11 MGd (16 new wells). Shortfall could be as high as 12.6 to 15.3 MGd if GWA expansions are not implemented (Vol 6, p. 3-31). A shortfall in any part of the island-wide water supply is a significant impact, as it could affect water quality in a fashion that can impact public health and safety. Low or no water pressure in the public water system can result in contaminants (including microbiological contaminants) entering into the distribution system with consequent health impacts. Low or no water supply /pressure can also impact fire fighting and basic sanitary needs of the population impacted. Despite the project resulting in this significant impact to GWA's water system (Vol 6, p. 3-34), no mitigation is proposed.

Regarding management of the groundwater resource, the erDEIS states that pumping would be controlled by GovGuam via the building permit process. We do not think this is a feasible approach nor do we think the resource can be definitively controlled in this way. We acknowledge that if GovGuam had an effective program in place, it could be used to help manage the resource, but additional capacity and technical resources for GovGuam would be needed for this to be effective and to used as an assumption for the impact assessment.

> *Recommendation:* Mitigation measures should be identified for this significant impact to the GWA water system. We recommend assistance to GWA be considered to ensure necessary water supply development occurs. DoD could provide additional wells for GWA, rather than relying on GWA to collect through contractor fees, and thus reduce

uncertainty regarding this impact. Support for other GWA improvements such as assisting in reducing losses, would be appropriate mitigation. Capacity assistance to GovGuam for support in managing the resource via building permit process or other technical assistance (including support in development of long term ground water management tools such as groundwater models proposed by USGS) should also be considered.

Expected water needs

The water use calculations in the erDEIS are based on a guidance document UFC 3-230-19N that specifies daily per capita needs. The amounts listed are high relative to what typical U.S. water utilities estimate. Per capita use for single family units is listed in the erDEIS at 180 gallons per day (gpd); for barracks dwellers, it is 155 gpd. These numbers appear out-of-date. More-current usage bench marks found in the professional drinking water utility community would be less than one-half these values. Under more-aggressive water conservation scenarios, bench marks would be substantially below these levels (20-30 gpd per person in a single family unit is a typical goal in California, for example).

The erDEIS states that the base would incorporate water efficiency technology to the degree feasible and economical (Vol. 6, p. 3-20). Because of the value of this resource, the DEIS should incorporate robust water conservation measures including those typically used in the U.S., such as low-flow toilets, water efficient washing machines, and drought-tolerant native plant landscaping.

Recommendation: We recommend DoD ensure the daily per capita projections are consistent with its goal to reduce water consumption. Different per capital usages should be considered against projected resource needs and approaches. It is reasonable to assume that a reduction in potable water needs would substantially affect alternatives and impacts.

Additional applicable drinking water regulations

The "Required permits and approvals" section is missing GEPA Safe Drinking Water Act related permits and approval processes. Please contact GEPA for any other regulations not included in this table. At a minimum, the table seems to be missing:

- Guam - Safe Drinking Water Act - Statute 10 GCA Chapter 53,
- GEPA - SDWA implementing regulations – 22 GAC – 6141, etc.
- Guam Primary Drinking Water Regulations, Secondary DWR's, other requirements
- GEPA - Review and approval requirements for GEPA to ensure that design or construction of new or substantially modified water system components will be capable of compliance with State primary drinking water regulations.
- GEPA's - Drinking water system operator certification requirements

Also add EPA's Underground Injection Control Program (40 CFR Parts 144-147) to the list.

Groundwater under the direct influence of surface water

The proposed potable water treatment presumes that all new and existing wells will be declared to be groundwaters under the direct impact of surface water (GWUDI). These could then be

required to install and operate full surface water treatment to control turbidity, *Cryptosporidium* and other pathogens. However, ongoing studies suggest that some wells may not be GWUDI and may only need to maintain current disinfection treatment. Alternatively, some wells may be judged GWUDI, but be granted filtration avoidance. These wells would require enhanced disinfection and monitoring, but not filtration. Wells sited away from sources of fecal contamination (i.e., away from sewage lift stations and stormwater recharge points) would be more likely to be exempted. Because this would result in substantial cost savings, reanalysis to consider well siting and sources of contamination should be considered.

> *Recommendation*: Consider sources of contamination when siting new wells. Include a discussion in the DEIS of all the requirements that will apply should groundwater be determined to be GWUDI. These requirements include: the Surface Water Treatment Rule (SWTR), Interim enhanced Surface Water Treatment Rule (IESWTR), Long term 1 enhanced Surface Water Treatment Rule (LT1ESWTR) and Long term 2 Enhance Surface water treatment rule (LT2ESWTR), and any other associated requirements. This should be included in this section under Federal Regulations/SDWA on 4-12, Vol. 2. We suggest adding a paragraph above "Groundwater Rule", titled "Surface Water Treatment Rule(s) may apply to Groundwater if GWUDI determinations are made" with discussion of the implications (additional treatment, monitoring, etc.).

Water and Wastewater Infrastructure (Volume 6)

A more accurate baseline description needed for water and wastewater utilities

The erDEIS does not adequately describe the baseline conditions with regard to the current state of Guam Waterworks Authority's (GWA) water and wastewater infrastructure. If the baseline conditions are not correctly characterized, the appropriate range of alternatives, and the potential impacts of the interim and long-term alternatives cannot be accurately assessed. The conditions of the water and wastewater infrastructure on Guam are well documented; GWA has a projected 20 year capital improvement need of over $800 million of water and wastewater infrastructure improvements. Most of the wastewater facilities are operating in noncompliance with their federal Clean Water Act discharge permit. Numerous spills and leaks have occurred during the past several years. Many of the drinking water facilities are in poor condition, and as recently as four years ago, boil water notices were routinely issued. In 2003, EPA issued a stipulated enforcement order to GWA for the deficiencies of the water and wastewater system. The stipulated order and its requirements are publicly available on GWA's website.

Because the baseline condition was not adequately characterized, direct and indirect impacts for the water and wastewater interim alternatives are not accurately assessed in the erDEIS. The use of inappropriate baseline assumptions may also have resulted in inadequate interim alternatives development for both water and wastewater. Because the NEPA analysis of the interim alternatives is intended to be project level, the DEIS must identify alternatives to ensure sufficient potable water is supplied to meet the increase in population as a result of the project. A range of alternatives and mitigation measures should be included in the DEIS.

Additionally, we believe that providing an accurate baseline description of existing conditions of water and wastewater infrastructure will assist in developing appropriate long term water and

wastewater infrastructure alternatives, which are being evaluated at a programmatic level in the DEIS.

> *Recommendation:* A more thorough and accurate description of the water and wastewater infrastructure baseline conditions should be provided in the DEIS. Baseline descriptions should include GWA's 20 year capital improvement plan, the progress made to date on such plan, and the financial and resource limitations that are in part, responsible for the current state of water and wastewater infrastructure. The baseline description of the Northern District Wastewater Treatment Plant (NDWWTP) should include its current operational treatment capacity, the current effluent quality and any recent monitoring results that have been conducted as required by the CWA discharge permit. This would supplement the baseline conditions at the NDWWTP and provide substantive information to be evaluated when analyzing the range alternatives that will accommodate the additional sewage generated during the interim timeframe. The description of the baseline conditions should also include a discussion of GWA's 301(h) waiver applications for the Northern District and Agana Wastewater Treatment plants, and EPA's issuance of the tentative decisions (issued in January 2009 and available on EPA Region 9's website).

Water and wastewater infrastructure analysis supporting the interim timeframe
The alternatives analyzed for both water and wastewater impacts during the interim timeframe are deficient due to inappropriate baseline assumptions, and defer responsibility of mitigating the impacts during the interim timeframe to a third party – contractor and/or GWA. Identification of direct and indirect impacts associated with the water and wastewater infrastructure during the interim timeframe, and an appropriate range of alternatives and mitigation measures, must be included in a project level EIS. Given the financial and resource constraints that exist for Guam, it is unrealistic to propose that GWA can mitigate for the direct and indirect impacts of the increased contractor population to support the military expansion.

The erDEIS identifies the interim timeframe as starting when the contractors arrive to begin construction of the military expansion and other necessary facilities to the time when a majority of the construction is completed. The erDEIS identifies a shortage of potable water available due to the increased contractor population, a significant impact. However, the document does not assess the impacts to the water infrastructure or identify the improvements necessary to distribute an increased flow of potable water.

The military suggests the responsibility to supply and distribute potable water for the increase in population is to be borne by the military's contractor(s) and/or GWA. This is unacceptable. If not for the military expansion, increasing the capacity of water and wastewater systems would not be implemented within this timeframe. The military cannot simply state, ".. it is imperative that the GWA commence with planned expansions in 2010.."(page 3-31, Volume 6), given the historical funding deficiencies that the Government of Guam has attempted to address over the past several years. In addition, the military's assumption of increased water and wastewater user fees supporting the infrastructure improvements is not reasonable as the current rate structure cannot support the upgrades and

repairs needed for the existing water and wastewater infrastructure. Also, additional monitoring of the northern area sole source aquifer is not a sufficient mitigation measure for the interim impacts to the water resource.

The analysis of alternatives for wastewater is equally deficient. At any given time, some, if not all, of the wastewater treatment plants operated by GWA are in noncompliance with their existing Clean Water Act discharge permit. EPA has issued a stipulated enforcement order to GWA based on the condition and operation of their wastewater facilities. Adding flows to any of GWA's existing wastewater treatment systems will increase the potential human health and environmental risk associated with those facilities operating in noncompliance. It is unacceptable to defer the responsibility for collection, treatment, and disposal of sewage to a contractor and/or GWA without an accurate assessment of baseline conditions, the possible range of alternatives, and the basis for the selection of an alterative, especially given the current constraints that exist on Guam.

Lack of Site-Specific Impact Assessment for Water Resources

Reasonable methodology identified but not applied

The erDEIS identifies a reasonable impact assessment methodology for assessing impacts to water resources from the Marine relocation (Vol 2, p. 4-53). For example, the erDEIS states that the methodology would assess the magnitude of potential impacts by comparing baseline conditions and significance criteria. For groundwater, the erDEIS states that the assessment would examine the potential risk of a hazardous or regulated waste to enter groundwater and approximate the amount of additional stormwater that enters groundwater (Vol 2, p. 4-55). Significance criteria are identified for use in the assessments to surface waters, groundwater, nearshore waters and wetlands, and general statements of the kind of impacts that can occur to these resources are included.

This reasonable methodology was not applied, however, and as a result, impacts to water resources were not assessed. For example, for the main cantonment parcels, the impacts to groundwater were not identified. Instead, there is simply a statement that Best Management Practices (BMPs) would be followed. We agree that the identification of BMPs and other mitigation measures is important, however without an impact assessment, it is not clear what the magnitude of impacts will be, and this information is needed in order to determine whether BMPs would be effective. Without knowledge of the magnitude and site-specific vulnerability to impacts, it is insufficient to simply state that because BMPs would be implemented, that impacts to the resource would not be significant.

Impacts to surface waters is only slightly improved, consisting of a general statement that construction of the project would result in the temporary increase in stormwater runoff, erosion and sedimentation, and again that BMPs would reduce impacts to less than significant. The erDEIS acknowledges that soil erosion from land clearing and grading is a significant source of water pollution in Guam (Vol. 2, page 4-14), a statement that appears to undermine the conclusions in the erDEIS. The erDEIS should discuss the success of BMPs in controlling stormwater runoff pollution at construction sites in Guam and the implications for a large scale project such as this. Such a discussion would help to clarify the potential effects of the project.

Submarine groundwater discharges have the potential to carry harmful levels of pollutants to sensitive coral reefs which surround Guam as fringing reefs. Stormwater inputs, on-site wastewater disposal systems, injection wells, and chemical/fertilizer spills all have the potential to contaminate groundwater and contribute pollutants to coastal waters. The DEIS should assess pollutant loads, including nitrogen, to the ocean from submarine groundwater discharges and evaluate the potential for harmful impacts to coastal water quality and coral reefs.

Operational impacts to surface waters are assessed with percentage increases in impervious surfaces, which is useful quantitative information. But again, no discussion is included of how much impervious surface in a watershed would affect impacts. Discussion on how the new impervious surfaces impact recharge of the aquifer and alter current recharge patterns should be included. Additionally, the level of deforestation that will occur on site and the relationship of this impact to the hydrology and aquifer recharge should be considered. The preferred alternative 2 for the main cantonment area will result in the removal of over 1,200 acres of limestone forest and over 270 acres of shrub/grassland. Over 86 acres of limestone forest will be removed on Anderson AFB, and Anderson South development will remove over 120 acres of limestone forest and 78 acres of shrub/grassland.

BMP effectiveness not examined

BMP effectiveness varies, and the erDEIS confirms this when it states that proper implementation of the Anderson AFB Stormwater Pollution Prevention Plan has prevented "extensive groundwater contamination" (Vol 2, p. 4-19), implying some level of groundwater contamination is occurring. It is not scientifically sound to assume BMPs will all operate at 100% effectiveness. The factors that influence BMP performance must be known and included in the evaluation as to whether they will reduce the impacts to less than significant levels. Consideration of how these BMPs will operate in a karst environment should also occur.

For example, for stormwater BMP's, three factors must be considered to evaluate performance: pollutant concentration, volume and total load. EPA has created a web-based tool, the Urban BMP Performance Tool (available at www.epa.gov/npdes/urbanbmptool), to provide easy access to research studies on the performance of stormwater BMPs. This tool can be used to search BMPs to identify pollutant removal and stormwater volume reduction information. Similar evaluations of BMP effectiveness for other water resources should also be conducted.

> *Recommendation:* Apply the impact assessment methodology identified in the erDEIS for water resources to the specific project site conditions to determine the degree of impacts to the different water resources, including groundwater, stormwater and non-point source runoff, and coastal waters. Evaluate the ability of proposed BMPs to mitigate the site-specific level of impact identified from this improved site-specific impact assessment.

Stormwater NPDES Permitting Endangered Species Act Requirements

The DEIS identified significant impacts from construction activities to several listed species on Guam in several of the areas where construction would occur such as Andersen AFB and NCTS Finagayan. Stormwater discharges from construction projects on Guam require NPDES permit

coverage under EPA's general permit for construction site runoff[2] (73 FR 40338, July 14, 2008). Coverage under the general permit requires a demonstration of compliance with the ESA prior to discharge authorization being granted. At present, the erDEIS lacks adequate information to support such a demonstration.

The general permit provides several options for dischargers to demonstrate compliance with the ESA. One option is to develop and implement appropriate mitigation measures which would avoid adverse effects to listed species. Although the erDEIS identifies mitigation to address some potential adverse effects, for others appropriate mitigation is not identified.

The erDEIS notes that the Navy has initiated formal section 7 consultation with the U.S. Fish and Wildlife Service concerning the project. Such a consultation is another avenue that could lead to stormwater discharge authorization being granted under the general permit. The general permit also requires that the permittee comply with any special conditions developed through the consultation for the protection of listed species.

> *Recommendation:* We recommend the DEIS include a discussion of the ESA-related requirements of the general permit, and the additional steps necessary to comply with the ESA and obtain discharge authorization.

Clean Water Act Section 404 Compliance

Wetlands and Waters of the U.S.

Report organization regarding waters of the United States, including wetlands

The erDEIS discusses various aspects of wetlands and other waters of the U.S.[3] (WUS) across multiple volumes and chapters, making it very difficult to clearly understand the direct and indirect project impacts resulting from multiple activities under the various alternatives. Wetlands and surface water impacts are discussed under multiple subject sections, including water resources, terrestrial biological resources, marine biological resources, and utilities. It is unclear why road impacts to freshwater wetlands are discussed, in part, in a marine resources chapter. Placing wetlands and other WUS (*e.g.* streams, rivers, lakes, marine environments) into multiple separate chapters for discussion purposes contributes to the difficulty of understanding project impacts. Data availability and quality for wetlands and WUS varies between geographic location, the type of project activity, and project alternative.

> *Recommendation:* Analysis, discussion, and findings concerning all wetlands and other WUS should be coalesced into a single summary chapter or appendix. The summary should provide a crosswalk through various activities and alternatives. A summary section would greatly facilitate review and understanding of project impacts, and avoidance, minimization, and mitigation measures for wetlands and WUS. It could also

[2] NPDES stormwater discharge authorization could also be granted under an individual permit, but such a permit would include similar requirements regarding compliance with the ESA prior to going into effect.

[3] Waters of the United States are defined in EPA and Corps regulations (40 CFR § 230.3(s) and 33 CFR § 328.3(a)), respectively.

facilitate an understanding of cumulative impacts to WUS from the interaction of separate project components.

Geographic extent of jurisdictional waters of the United States

The erDEIS does not adequately characterize the type or geographic extent of WUS, including wetlands within the project area under the various alternatives. This is a significant deficiency because it is not possible to determine Clean Water Act compliance (*i.e.* , compliance with EPA's 404(b)(1) Guidelines) without relevant information on the type and extent of WUS.

The erDEIS identifies the general inventory of surface waters (*i.e.* , Guam has 97 rivers and streams, ranging in length from 0.6 mile (mi) to more than 28 3.1 mi, and some wetlands (*i.e.* , Guam has 4,056 acres of wetlands) and other water features. EPA has also been provided additional draft figures not included in the erDEIS depicting "wetland/potential wetland area[s]", project alternative and location, type of wetland, and area of impact. Wetland/potential wetland areas are apparently based in large part on the USFWS National Wetlands Inventory (NWI)[4]; however, the methodology used to determine the type and extent of wetlands is not always clear because there are other references given to support the presence/absence of jurisdictional wetlands in specific areas (*i.e.* , Andersen AFB 2008, COMNAV Marianas 2001, and COMNAV Marianas 2008).

While the draft figures depicting wetlands are useful for understanding the general locations of, and impacts to, potential wetlands and streams, the wetland mapping may be at a scale that is not useful for conducting a detailed assessment under 404 of the CWA. In addition, USFWS NWI maps are not adequate to access the geographic extent of jurisdiction under the CWA in the absence of additional field data collection and verification. Wetlands under the CWA are delineated using the Corps of Engineers 1987 Wetlands Delineation Manual (Environmental Laboratory 1987) and any applicable supplements. The manual utilizes a three-parameter test, which examines field indicators of wetland conditions. Wetland conditions include the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. In addition, non-wetland waters/streams that fall between the Ordinary High Water Marks (OHWM), as described at 33 CFR §328.3 and §329, are jurisdictional under the CWA. Determination of the geographic extent of these "other waters" requires field verification utilizing appropriate Corps and EPA guidance. The erDEIS often separates wetlands and other WUS (*e.g.*, streams, rivers, lakes, marine environments) into separate chapters for discussion purposes even though all of these features may be considered WUS for regulatory purposes.

Recommendation: Using applicable Corps/EPA guidance and field protocols, delineate the geographic extent of WUS, including wetlands within the project footprint, and any adjacent areas that will be indirectly affected under the various project alternatives. Determine the type, location and area of wetlands and the linear extent, width, and area of all drainage features exhibiting an OHWM. Collect wetland and non-wetland water/stream boundary data in the field utilizing GPS or other field documentation. Incorporate the GPS data into a Geographic Information System (GIS). This information should be layered onto an appropriate geo-referenced topographic map and aerial

[4] (USFWS. 2009. U.S. Fish and Wildlife Service National Wetlands Inventory: Pacific Trust Islands (Guam and Saipan, http://wetlandsfws.er.usgs.gov/imf/imf.jsp?site=NWI_PacTrust).

photograph. This spatial data can then be used to better determine project impacts and assist in reducing potential impacts as part of the 404(b)(1) alternatives analysis (see below).

Clean Water Act Compliance and EPA's 404(b)(1) Guidelines

Volumes 2-6 of the erDEIS contain a very general discussion and analysis of the effects of major project alternatives on wetlands and other WUS. The erDEIS provides only a cursory discussion and no analysis of compliance of the various project alternatives with the EPA's 404(b)(1) Guidelines (Guidelines). The assessment of alternatives under NEPA is not sufficient for the assessment of alternatives for purposes of demonstrating 404(b)(1) compliance under the CWA. Because the erDEIS does not include an alternatives analysis we cannot demonstrate compliance with the Guidelines. The following comments identify deficiencies in the impact evaluation for purposes of determining compliance with the Guidelines and makes recommendations for supplementing the information provided so that compliance can be determined (40 CFR 230.10 (a)(4). To streamline permitting, we recommend that DoD provide a 404(b)(1) alternatives analysis in the DEIS, or as a separate "stand alone" document that is referenced in the DEIS.

Off-site alternatives

The erDEIS does not discuss alternative off-site locations for various project components.

On-site alternatives

The erDEIS evaluates Alternative 2 (Preferred) and several other alternatives. Alternatives that would meet the project purpose have not been presented in the context of reducing impacts to waters by reconfiguring or reducing the footprint of the preferred alternative through modifications to acreage of residential, commercial, transportation or recreation components. Therefore, based on our review of the erDEIS, we cannot determine whether the preferred alternative complies with the Guidelines.

Housing, infrastructure, and related project components on the scale proposed for Guam and CNMI are difficult to reconcile under the Guidelines because they typically encompass varied land uses which, when considered separately, comprise projects with some independent utility (*e.g.*, housing and training). To ensure that impacts to waters are truly minimized, only elements essential to a project's purpose should be considered when analyzing alternatives under the Guidelines.

Project Phases

An avoidance template for the project site can be developed. This template can identify avoidance of waters, sufficient buffers to prevent further direct or indirect degradation of waters, and incorporation of low impact development practices. As each phase is prepared for development, a comprehensive alternatives analysis can be prepared to ensure compliance with the Guidelines. The phasing of development may provide opportunities for conservation of vulnerable waters and sensitive wildlife habitat. As part of the avoidance template, additional alternatives to be considered, include, but are not limited to:

- **Low Impact Development (LID)** – LID is a sustainable landscape approach used to replicate or restore natural watershed functions. Information about LID is available on EPA's website. While EPA recognizes DoD's efforts to reduce impacts through the

adoption of green building standards, DoD can further implement LID planning and building practices to further avoid impacts to water and associated habitat by reconfiguring/reducing development to avoid critical habitat areas.

- **Increasing the buffer widths along avoided waters** - To minimize the adverse effect of the proposed project on waters/wetlands, buffers should be provided in order maintain ecosystem processes. We recommend a minimum 100-foot buffer on the avoided waters/wetlands.

Secondary and Cumulative Impacts

The erDEIS does not adequately address secondary and cumulative impacts of the proposed alternatives to WUS, including wetlands. Cumulative impacts include past, present and reasonably foreseeable direct and secondary impacts to the aquatic environment. EPA has found that the scale and complexity of this type of development results in a number of adverse secondary effects such as the (1) degradation of natural conveyance functions of waters of the United States, (2) alteration of sediment mobilization, transport, and deposition processes, and (3) habitat fragmentation and degradation of ecosystem processes.

Functional Analysis

The erDEIS does not provide information regarding the function of WUS on the project site. A comprehensive functional analysis should be conducted in order to assess the current condition of WUS on the project site, and any change in condition likely to result from the proposed project. Based on the information provided in the erDEIS, the conditions of individual WUS were not assessed. Information from the functional analysis can be used to identify the LEDPA.

Significant Degradation - 40 CFR 230.10(c)

The Guidelines prohibit a project that causes or contributes to significant degradation of aquatic resources. Effects contributing to significant degradation include: (1) loss of fish and wildlife habitat (40 CFR 230.10(c)(3)); 2) reduction of biological productivity caused by smothering wetland habitat (40 CFR 230.41); and 3) impairment or destruction of endangered species habitat (40 CFR 230.30(2)). The proposed project may cause or contribute to significant degradation of on-site aquatic resources, both individually and cumulatively, through the direct discharge of dredged or fill material into waters or through indirect impacts from adjacent project activities.

Mitigation – 40 CFR 230.10(d)

Compensatory mitigation is intended only for unavoidable impacts to WUS after the Least Environmentally Damaging Practicable Alternative (LEDPA) has been determined. In several cases, the erDEIS does not include specific mitigation measures for unavoidable impacts to WUS.

Additional wetlands and WUS comments

- Vol. 2, pp. 3-32 to 3-72, Tables 3.2-3 to 3.2-7. As discussed above, EPA has also been provided supplemental draft figures and a table not included in the erDEIS depicting "wetland/potential wetland area[s]", project alternative and location, type of wetland, and area of impact. The supplemental table depicts that under Alts. 1, 2, 3, and 8 there will be impacts to wetlands at the Naval Munitions Site and on Non-DoD Lands (Roads). These impacts are not noted in Tables 3.2-3 to 3.2-7, nor in the related discussion. The

temporary impacts to estuarine and marine wetlands in Apra Harbor/Navy Main Base from dredging are not quantified or further discussed. The supplemental wetlands information notes that there may be 3.71 acres of wetlands at Air Force Barrigada. We recommend further field reconnaissance to verify whether there are wetlands using the Corps of Engineers 1987 wetland delineation protocols.

- Vol. 2, p. 4-3, Figure 4.1-2. Include supplemental figure of "Known Jurisdictional Waters" in addition to "Surface Waters of Guam".
- Vol. 2, p. 4-4, No mention of Section 404 of the Clean Water Act and the attendant regulatory requirements.
- Vol. 2, p. 4-18, lines 3-24. The erDEIS generically defines wetlands. The USFWS and Corps/EPA have different wetland definitions relating to each agency's specific program and regulatory responsibilities. For CWA purposes, wetlands are determined using the Corps of Engineers 1987 Wetlands Delineation Manual (Environmental Laboratory 1987). USFWS NWI maps are not adequate to access the geographic extent of jurisdiction under the CWA. Please note that the CWA also requires compliance with EPA's 404(b)(1) Guidelines.
- Vol. 2, p. 4-20, lines 25-27. The text states that a non-jurisdictional wetlands survey of Andersen AFB was conducted in August 1995. A "jurisdictional" wetlands delineation is needed. Please describe which wetlands survey method was used.
- Vol. 2, p.4-28, lines 27-33. Formal wetlands surveys using the Corps of Engineers 1987 protocols should be conducted to determine the presence of wetlands for CWA purposes.
- Vol. 2, Section 4.2, Determination of Significance for Surface Waters and Wetlands. There is no discussion of the potential secondary or indirect affects of project-related construction impacts to surface water quality on wetlands or other WUS. For example, while it may be true that there are no direct impacts to wetlands under various alternatives, there is the potential for indirect impacts to wetlands from surface water transport of pollutants from construction activities *(e.g.* , downstream transport in streams and culverts of stormwater pollutants to wetlands and other WUS). The potential for indirect impacts to wetlands from construction is not adequately discussed in the erDEIS.
- Vol. 2, p. 4-54 to 4-56. Determination of Significance for Surface Waters and Wetlands. Note that the discharge of fill material is considered a pollutant under the CWA. Impacts from fill material should be included in this discussion.
- Vol. 2, p.4-75 to 4-76, Naval Base Guam. What is the methodology used to assess the impacts of construction-related sedimentation and siltation on wetlands? This section concludes that wetland functions will be only temporary impaired, but provides no scientific basis to support this conclusion.
- Vol. 2, Section 4.2.2.6, Potential Mitigation Measures, Wetlands. Note that all proposed mitigation measures must be in compliance with the Corps Mitigation Policy.
- Vol. 6, p. 6-7 to 6-9, Long-Term Alternative 1, Power Plant Construction. We consider the potential loss of 8.2 acres of freshwater emergent wetland projected under Long-term Alt. 2 as significant. There is the need to address avoidance of these impacts under a

404(b)(1) alternatives analysis. There is also a need to provide accurate information on the acreage of direct and indirect impacts to wetlands and other WUS. The Corps 1987 Wetland Delineation Manual should be used to determine the extent of jurisdictional wetlands.

- Vol. 6, p. 6-11 to 6-18, Potable Water, Alts. 1 (Preferred) and 2. We consider the potential loss of 6 acres of estuarine and marine wetland along the alignment for the water main projected under Alt. 1 as significant. There is the need to address avoidance of these impacts under a 404(b)(1) alternatives analysis. Impacts to palustrine and riverine wetlands and other aquatic environments for the Lost River Diversion are unknown. The potential impacts from dredging, haul road construction and the discharge of dredged and fill material from the Lost River Diversion (Naval Munitions Site) should be fully assessed. This includes potential diversion-related reductions in surface flows in the Maagas and Talofofo rivers and associated impacts to riverine and wetlands functions. Table 6.2-2. Summary of Potential Potable Water Impacts does not identify diversion-related flow reductions as to rivers as an impact to wetlands or other WUS.
- Vol. 6, p. 6-28 to 6-31, Solid Waste, Long-term Alts. 1 (South Guam) and 2 (Naval Munitions Site) and Table 6.2-4. Summary of Potential Solid Waste Impacts. Potential construction and operational impacts to the acreage and function of wetlands and other WUS are unknown. Potential direct impacts from fill associated with landfill construction and indirect impacts from increased pollutant loading should be fully assessed.
- Vol. 7, Table 3.4-2. Summary of Impacts to Water Resources from the Proposed Action and Supporting Narrative. The erDEIS contains no rigorous cumulative impact assessment for wetlands and other WUS. Rather, the erDEIS relies on a general enumeration of ongoing and potential future projects to support a conclusion that with the implementation of BMPs, SWPPPs, SWMPs, OPC Plans, SPCC Plans, LID measures, LID-comparable technologies, sustainable measures, mitigation measures, monitoring, and compliance with federal and GovGuam guidelines on a project and site-specific basis, cumulative impacts to surface waters on Guam that may impact marine biological resources, including wetlands, would be less than significant. The erDEIS further concludes that with mitigation there will be no reduction in wetland area or functionality in Guam and CNMI . We are concerned that these conclusions are not fully supported by existing information contained in the erDEIS. For example, the erDEIS contains no estimate of the acreage of direct and indirect cumulative impacts to wetlands and other WUS. In addition, the erDEIS contains no assessment of the functions performed by wetlands and other WUS on the project site. In the absence of a wetlands functional assessment, it is not possible to conclude that mitigation and other measures will fully offset individual or cumulative project impacts.

Comments specific to Volume 4 - Carrier Vessel Nuclear Berth

Impacts to Coral Reef Ecosystems/CWA Section 404 permitting requirements

We have substantial concerns regarding the Carrier Vessel Nuclear (CVN) berth project's compliance with Clean Water Act (CWA) Section 404 requirements, and regarding direct and permanent impacts to 39 acres of coral reefs (a special aquatic site per 40 CFR 230.44), a magnitude unprecedented in recent permit history for the U.S. Pacific Islands. We have

previously communicated our concerns to DoD in a letter to Mr. David Bice from EPA, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service dated December 18, 2008, and more recently in a letter to Karen Sumida dated July 23, 2009. As we noted in the latter, EPA considers the CVN berth project a potential candidate for elevation and veto under CWA 404(c) and 404(q).

Clean Water Act Compliance and EPA's 404(b)(1) Guidelines

The analysis regarding the Carrier Vessel Nuclear (CVN) berth presented in Vol. 4 and appendices is not adequate to meet requirements for authorization by the U.S. Army Corps of Engineers under Clean Water Act (CWA) Section 404. Volume 4 the erDEIS contains a discussion of the effects of major project alternatives on marine resources and coral reefs. The erDEIS provides only a cursory discussion and no analysis of compliance of the various project alternatives with the EPA's 404(b)(1) Guidelines (Guidelines). The assessment of alternatives under NEPA is not sufficient for the assessment of alternatives pursuant to the Guidelines. We communicated early to DoD that integrating NEPA and 404(b)(1) alternatives in the EIS would streamline permitting, and this was discussed and agreed to by DoD during preparation of the Cooperating Agency Memorandum of Understanding.[5]

The following comments identify deficiencies in the impact evaluation for purposes of determining compliance with the Guidelines and makes recommendations for supplementing the information provided so that compliance can be determined (40 CFR 230.10 (a)(4). We recommend that DoD provide a 404(b)(1) alternatives analysis in the DEIS, or as a separate "stand alone" document that is referenced in the DEIS.

Preferred Alternative is not the Least Environmentally Damaging Practicable Alternative (LEDPA)

In order to comply with the Guidelines, a project must include a comprehensive evaluation of a range of alternatives to ensure that the "preferred" alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA). Volume 4 Ch.2 Section 2.3 identifies both the Polaris Point and Ship Repair Facility (SRF) alternatives as practicable. The dredge and fill footprints of both alternatives are approximately 58 acres. The SRF alternative appears to be the LEDPA with a direct impact to coral reef ecosystems of 32 acres (Table 11.2-5) vs. 39 acres (Table 11.2-1) at Polaris Point. The percent of the footprint in which coral occurs is also lower at SRF (55%) when compared with PP (67%). Polaris Point is identified as the preferred alternative; however, (Vol 7, Sect. 1.1.2) and the level of analysis in the erDEIS for the SRF alternative is less detailed than for Polaris Point.

Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters resulting from a set of on- and off-site project alternatives. The Corps cannot permit the discharge of dredged or fill material if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem.

[5] The Cooperating Agency MOU was never signed and was abandoned.

Secondary and Cumulative Impacts not identified
The erDEIS Vol. 4 and Vol. 7 Section 3.4.9 do not adequately address secondary and cumulative impacts of the proposed alternatives to marine waters, including coral reefs. The cumulative impacts discussion in Vol. 7 does not assess cumulative impacts to coral reefs from recent and future planned projects in Apra Harbor. The DEIS should include an analysis of direct and indirect impacts (acreages and cover) to coral from Inner Apra Harbor dredging, Kilo wharf extension, projected commercial port improvements, and other projects.

The cumulative impact assessment for coral reefs should take into account the status of coral reefs in Guam's waters as described in NOAA's State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States, 2005 and 2008, and other sources.

Compliance with Water Quality Standards not demonstrated (40 CFR230.10(b))
The erDEIS fails to provide a determination of compliance with water quality standards during and after construction of the CVN berth, turning basin, and channel. Results of sediment testing to determine contamination levels of sediments to be dredged for CVN are not provided nor discussed.

Appendix E Section B contains a baseline assessment of water quality for the impact area within Apra harbor, based on data from only two sampling dates. Water quality at all but 3 stations complies with water quality standards for turbidity and TSS. Guam classifies water quality in the CVN area of Apra Harbor as "M-2" - Good. The erDEIS Vol. 4 acknowledges that there will be discharges that will cause degradation of water quality in Apra Harbor from pier construction, dewatering of dredged materials, and sediment plumes from dredging activity. A discussion of how these discharges will affect compliance with water quality standards is lacking. Elevation of only 1 Nephelometric Turbidity Units (NTU) or 10% total suspended solids (TSS) over ambient conditions represents an exceedence of water quality standards. CVN dredging and construction will occur in waters of good quality containing coral reefs that are sensitive to increases in fresh water, turbidity, sedimentation, and pollutants. The CVN work is adjacent to very high quality reefs at Big Blue Reef, Jade, and Western Shoals. All reasonable measures should be taken to prevent discharge and water quality degradation in Apra Harbor from construction, dewatering, and dredging. The erDEIS describes only standard BMPs to control pollutant discharges. The scale of this construction/dredging and its proximity to sensitive marine life in the good quality receiving waters warrant a higher level of precautionary measures to control discharges.

> *Recommendations:* Provide an analysis of water quality impacts and compliance with water quality standards and toxic effluent standards for the CVN project. The DEIS should describe the best practical BMPs to prevent discharge of water and pollutants from land construction activities for moderate size rain events, exceeding the 2 year event. Dredge material dewatering sites should be sized to contain all water and runoff for moderate size rain events. Dredging activity should employ redundant layers of silt curtains, prohibit overflow from barges, and all other measures to avoid sediment plumes outside of the confined dredge area.
>
> Consult with EPA's dredging team on sediment testing for the CVN dredging. The DEIS should describe any sediment contamination within the footprint, recommend use of

environmental dredging bucket for this material, and describe plans for disposal of contaminated material.

Significant degradation of aquatic resources (40 CFR 230.10(c))

Volume 4, Section 11.2.2 correctly concludes that there would be significant and permanent direct impacts to the coral reef ecosystem. Coral reefs provide many important functions and services in Apra Harbor including essential fish habitat, invertebrate habitat, endangered sea turtle feeding and resting habitat, shoreline protection, biodiversity, commercial and recreational fisheries, commercial and recreational diving, cultural value, aesthetics, buffering of ocean waters, biogeochemical cycling, larval sources, etc. The health and extent of coral reefs are declining worldwide, including in Guam. The reefs in the CVN area have relatively high coral cover with over half of the acreage of coral in the footprint having >30% live coral cover. Further, the areas adjacent to the direct project footprint include very high quality reefs at Big Blue Reef, Jade Shoals, and Western Shoals and Sasa Bay Marine Preserve. These high quality areas may experience increased turbidity from dredging impacts. Endangered hawksbill and threatened green sea turtles have been seen in the area and nest within Apra Harbor. We disagree that the significant impacts to coral reefs will be mitigated to "less than significant" by the installation of artificial reefs as described for mitigation. The erDEIS does not demonstrate compliance with the Guidelines 40 CFR 230.10 (c).

Recommendation: Add a section to the text and tables (11.2-4, 11.2-6, and 11.2-7) that summarizes impacts to Special Aquatic Sites (40 CFR 230 Subpart E), e.g., coral reefs and Sasa Bay preserve. Add a discussion on how the proposed project will comply with Guidelines 40 CFR 230.10 (c), given the unprecedented scale of impacts to coral reefs.

Mitigation (40 CFR 230.10(d))

Compensatory mitigation is intended only for unavoidable impacts after the LEDPA has been determined. Failure to adequately offset project impacts is grounds for denial of the permit application. Based on our review of the mitigation discussion in the erDEIS Chapter 4 and Appendices, it is not clear that DoD will be able to compensate for proposed project impacts.

The erDEIS underestimates the amount of compensatory mitigation required to compensate for impacts to coral reefs.

- The "proxy" approach for estimating cost of mitigation is invalid and should be omitted from the DEIS. The amount of mitigation must be sufficient to replace lost aquatic resource functions, or a minimum one-to-one acreage compensation ratio must be used (33 CFR 332.3(f)). Higher mitigation ratios may be necessary in this case to account for uncertainties in the success of selected mitigation approaches and lag time before aquatic resource functions are restored.
- The only mitigation proposal being considered by Navy that can successfully replace the lost functions of 32 acres of coral reef and other aquatic resources appears to be an approved In-lieu Fee program, which does not exist at this time and will require substantial effort to implement within the desired permitting timeframe. Artificial reefs remain unacceptable to EPA, USFWS, and NMFS for reasons described in our 3 agency letter to Mr. David Bice, dated December 18, 2008

- Several aspects of the Habitat Equivalency Analysis (HEA) analysis bias the scaling of mitigation to underestimate the mitigation required to replace lost aquatic system functions and services. These include: inadequate analysis of coral reef ecosystem structure and function, failure to consider impacts to non-coral habitats in the mitigation calculations, inappropriate use of "100% coral equivalent", and lack of consideration of indirect impacts from elevated turbidity.
- Scaling the size of artificial reefs as mitigation based on a 1993 Hawaii project is legally and scientifically unsound and biases the analysis toward insufficient mitigation. The Haseko "precedent" predated both the Mitigation REGL 02-2 and the 2008 Mitigation Rule and therefore is not in compliance with new requirements.

  Recommendation: The Navy should facilitate development of an approvable In-lieu Fee prospectus for Guam. An approvable coral reef mitigation project should be developed in conjunction with federal and Guam resource agencies. Habitat Equivalency Analysis can be used to scale mitigation, but several of the approaches used in Appendix D HEA need revision to be acceptable.

Additional comments

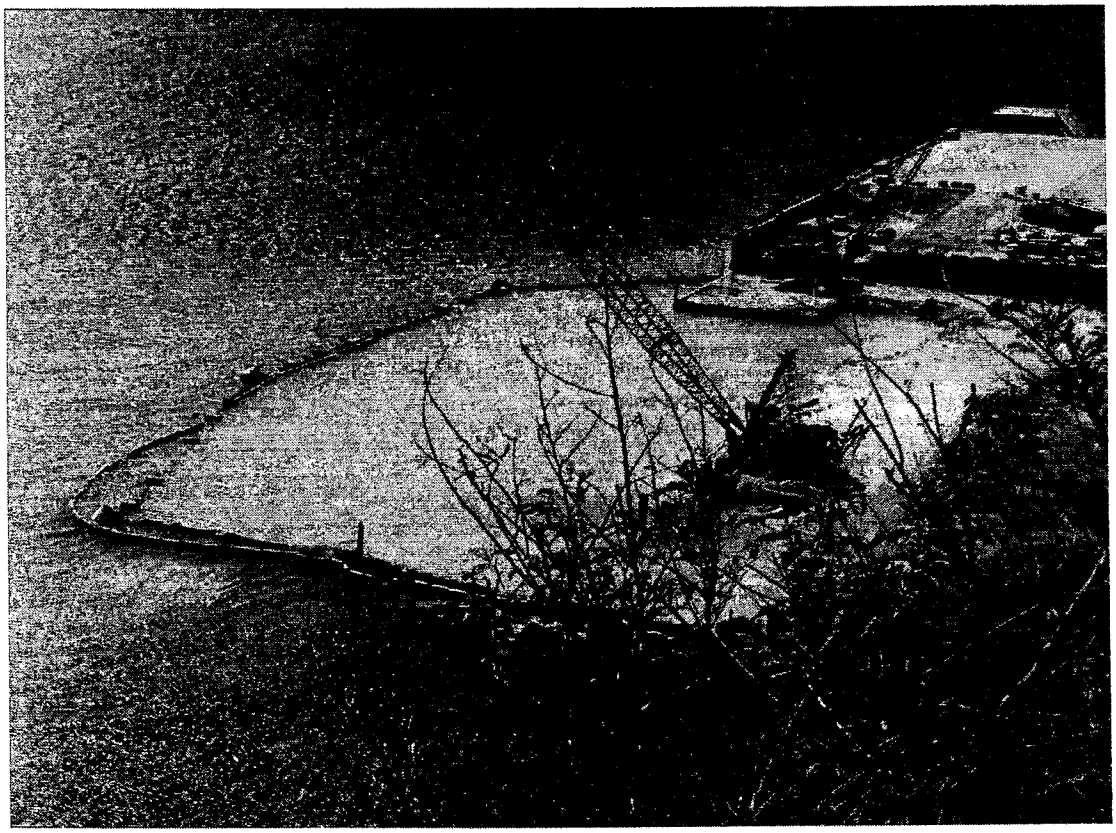
- The description of the affected environment for marine biological resources (Vol 4:11) does not adequately characterize the aquatic ecosystems (40 CFR 230.11(e)) and aquatic organisms (40 CFR 230.31). The Supplemental Marine Surveys in Appendix J use coral cover and mean colony size based on photoquads to describe the coral reef ecosystem. These metrics underestimate the amount of coral, the size/age of corals, and biodiversity of the coral reefs that will be impacted (Appendix J - Draft Comparison of a Photographic and an In Situ Method to Assess the Coral Reef Benthic Community in Apra Harbor, Guam, 2009). The supplemental surveys rely on outdated survey methods and cannot generate indicators of coral condition, functions and services as recommended for CWA applications by EPA (see EPA 2007 Stony Coral Rapid Bioassessment Protocol). Additionally, the use of "100% live coral equivalent" (Vol 9: Appendix E) is an inappropriate description of ecosystem impacts and will underestimate the amount of needed compensatory mitigation.
- The significance of indirect impacts to coral reef resources is underestimated. Secondary impacts to coral reefs from increased turbidity and decreased water quality are underestimated. Turbidity is well known to cause reproductive, sublethal and lethal impacts to corals (Fabricius 2005[6]), but this is not acknowledged in Volume 4 Chapter 11. We disagree with the statement that water quality impacts from construction will be negligible because even very small increases in turbidity (1 NTU) will result in water quality standard exceedences. Additional precautionary measures are recommended to contain turbidity at dredge sites, prevent overflow from barges, prevent stormwater discharge from construction on land, prevent discharge from dredged material dewatering sites, and from dredging. We note that construction at Kilo resulted in sediment discharges and the Kilo silt curtains failed on many occasions and that this is likely to reoccur during CVN construction and dredging. Elevated turbidity was evident both in

[6] Fabricius, KE. 2005. Effects of terrestrial runoff on the ecology of corals and coral reefs: review and synthesis. Marine Pollution Bulletin, 50:125-146

and outside of silt curtains at Kilo Wharf in the attached Photo 1 from June 2009 when dredging was not in operation. This observation contradicts the erDEIS assertion that elevated turbidity will dissipate rapidly with the cessation of dredging.

- The erDEIS does not fully consider disposal and reuse of dredged materials. The erDEIS considered two extreme cases of dredged material disposal: 100% ocean disposal and 100% upland disposal. These extremes are unrealistic and the DEIS should describe an alternative that takes into account capacity for upland disposal of contaminated materials. This alternative should also recognize that a good percentage of dredged materials from hard substrate will be unsuitable for ocean disposal. Debris and coral that is retained by a 12" screen is not suitable for ocean disposal.

Photo 1. Photograph of construction of Kilo Wharf, Apra Harbor Guam in June 2009. Elevated turbidity is visible inside and immediately outside the silt curtains on a day when no construction was underway.



Cumulative Impacts to Water Resources

The cumulative impacts assessment for water resources needs substantial improvement[7]. Again, a reasonable impact assessment methodology is identified but not applied (Vol 7, Sect 3.1.2). The 4-step process identified includes assessing the potential for cumulative impacts,

[7] For comments on the need for an improved cumulative impact assessment for coral ecosystems, see comments under Clean Water Act Section 404 – Impacts to Coral Reef Ecosystems

determining an appropriate geographic scope for the analysis, identifying past, present or future actions with the potential for additive or interactive effects, and assessing these effects in combination with project impacts, considering synergistic and countervailing impacts, and identifying significance of the impacts. The list of reasonably foreseeable future actions is extensive, and the maps identifying some locations are useful. The Mariana Islands Range Complex (MIRC) actions are not included; however, which are significant and will occur in some of the same geographic locations as the proposed action. Table 3.4-2 does not identify cumulative impacts but again only states BMPs and other mitigation would be applied.

Recommendation: We strongly recommend strengthening the cumulative impacts assessment for water resources. We recommend that assessments be included for each water resource evaluated - surface water, groundwater (quality and quantity), nearshore waters, and wetlands; that the existing condition for each resource briefly summarized; and the 4-step methodology identified in Vol 7, Sect 3.1.2 applied. Revise the cumulative impacts discussions to include evaluations of impacts from the standpoint of the resource, understanding that "the magnitude and extent of the effect on a resource depends on whether the cumulative effects exceed the capacity of the resource to sustain itself and remain productive"[8].

Summaries of existing resource condition should include such information as water quality criteria exceedances (e.g. Tanguisson Point (Finegayan) where a TMDL is needed, Vol 2, p. 4-21), existing swimming advisories (Vol 2, p. 4-15), percentage of wetland loss, etc. Consideration must be given to the ability of the resource to withstand additional stressors.

Air Quality

Unable to confirm general conformity determinations

The air quality analysis was not included the erDEIS Appendix we received. We were informed during our JGPO meetings in late July that the detailed methodology will be in the completed air quality study, which will be available in September 2009. Because the detailed methodology was not available, we cannot review the assumptions and methodology for assessing air quality impacts, including confirming determinations that general conformity is not triggered. The erDEIS shows that the correct threshold is being applied; however, we cannot confirm accuracy of method for estimating emissions. For example, it is not clear what kind of fuel is being used with respect to sulfur content, to estimate vehicular and stationary source emissions. In EPA's consultative role to DoD, we stress that if the emissions levels in the erDEIS are found to be in error, a general conformity determination, showing mitigation and offsets, could be required. We also note that this consequence would rely in part on the definition of the project for general conformity purposes, that is, on the extent to which the military expansion is one action, or several. We will provide comments to JGPO when the full air quality analysis is shared with EPA.

[8] Considering Cumulative Effects Under the National Environmental Policy Act, Council on Environmental Quality, January 1997, p. 7

Nonattainment of sulfur dioxide (SO2) national ambient air quality standard (NAAQS)
As the erDEIS correctly notes, Guam has two areas that are designated as nonattainment under the current SO_2 standards. EPA is reviewing the current SO_2 standards regarding their ability to protect health and welfare with an adequate margin of safety. We expect to soon propose final actions on our review that could lead to new, more protective standards. EPA is under a court-ordered deadline to take final action on our review in 2010, which would be followed by designations as to which areas meet or do not meet any revised standards.

Guam does not currently have an operating network of air quality monitors for either of its two nonattainment areas. Although EPA reviewed monitoring data from the 1999-2000 timeframe and found that it showed clean air quality, EPA remains concerned that with the lack of ongoing air quality monitoring, increased population and tourism, and the high sulfur content of fuel used on the island, both to produce power and to provide transportation, that Guam could experience episodes of severely degraded air quality.

> *Recommendation:* DoD should consider establishing an independent set of air quality monitors, both to verify baseline conditions on Guam, and to bolster assumptions made about construction and operational emissions and their air quality impacts in the two nonattainment areas (Piti and Tanguisson).

Lack of commitment to renewable energy and efficiency policies
This project offers unique opportunities for DoD to achieve the goals pursuant to the government's renewable energy policies, including the Energy Policy Act and Executive Order (EO) 13423[9]. However, the long-term energy alternatives proposed in the erDEIS indicate that these opportunities are not being pursued. The erDEIS dismisses a number of renewable energy options largely because they cannot provide 100% base load power. Energy efficiency opportunities were not explored at all. Instead, the long-term power alternatives propose constructing a new power plant in an existing SO_2 nonattainment area at Cabras/Piti or at a new location at Potts Junction that would likely utilize No. 6 Oil. Since Guam has two areas that are in nonattainment for the sulfur dioxide National Ambient Air Quality Standard (NAAQS), these increases in fuel use could contribute to or expand the areas in Guam where these health-based air-quality standards are not met. EPA is currently reviewing the existing sulfur dioxide standard and expects to soon propose final actions that could lead to a lower, more protective, standard. If more protective SO_2 standards are imposed, both long-term options present permitting issues which need to be evaluated.

Instead, we encourage DoD to create a power source alternative that integrates a variety of energy options, including energy efficiency opportunities and renewable energy in a diversified manner. With an integrated energy strategy, we believe construction of a new power plant may not be necessary. With this approach, DoD can minimize permitting obstacles while better protecting public health.

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[9] The EO 13423 Implementation Instructions identify strategies and tools each agency shall use to meet the goals of the order. Funding is one such tool, and the Implementation Instructions state that appropriated funds may be combined with Utility Energy Service Contracts (UESCs) to leverage government funding and optimize project scope and reductions in energy use and cost of facility operations. (See http://www.fedcenter.gov/_kd/Items/actions.cfm?action=Show&item_id=6825&destination=ShowItem)

First and foremost, island-wide energy efficiency opportunities should be explored. Substantial energy savings can occur while simultaneously improving the quality of life and health of the people of Guam. Energy efficiency programs can generate significant reductions in energy demand[10].

A more thorough review of solar energy potential is warranted. The erDEIS acknowledges that solar energy could be used to supplement baseload power (vol 6, p. 2-11). However, the erDEIS dismisses large scale photovoltaics, stating that large land or large rooftop areas are required for panel installation. With an integrated energy strategy, it is not necessary to have 100% energy generated from solar sources; thus the potential for solar energy can be explored. The erDEIS does not assess the land and rooftop area on proposed and existing military structures to assess their solar energy potential. Island-wide potential for solar energy utilizing a roof leasing arrangement can also be evaluated. This is proving successful in California[11]. We note that solar energy is not actively being pursued as part of the sustainability elements of the main cantonment design either, since we were informed that the focus during the design phase would be primarily to identify costs, and solar installation is not being advanced as a requirement for new structures.

> *Recommendations:* We recommend that DoD identify a diversified energy strategy and evaluate this as a long-term energy alternative in the DEIS. An island-wide energy audit should occur to identify the most accessible and cost-effective opportunities to reduce island-wide energy demand. We recommend DoD partner with Guam Power Authority to implement these opportunities. An assessment of solar potential on DoD land and island-wide should also occur. We note that analysis to evaluate the life-cycle costs of renewable energy is consistent with the overarching policy and directives of EO 13423[12].

Air quality and health impacts from construction mobile sources

The construction phase of the project will result in a significant increase in population and construction-related vehicles, and the evaluation of traffic impacts shows substantial traffic congestion during the construction phase, as well as the build-out phase (Vol. 6, Table 4.2-35). This will result in an increase in emissions of mobile source air toxics (MSAT), compounds that

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[10] Examples of energy efficiency improvements that could be implemented on the island include a Cool Roofs program and Refrigerator switch-out programs. Cool roofs consist of materials that reflect the sun's energy from the roof surface, thereby reducing the need for air conditioning. Energy savings using cool roofs are significant; a 3,000 sq ft roof could save around 6,600 kWh per year on average. Refrigerator switch-out programs for aging and inefficient refrigerators could also significantly reduce energy usage.

[11] The California utility, Pacific Gas and Electric, has successfully implemented a leasing program for solar installation consisting of up to 250 MW of utility-owned PV generation and an additional 250 MW to be built and owned by independent developers under a streamlined regulatory process. Projects developed by independent parties would be offered a standard contract and pricing derived from the utility's own costs to streamline review of their applications. For more information, see:
http://www.pge.com/about/news/mediarelations/newsreleases/q1_2009/090224.shtml

[12] p. 4, EO Implementation Instructions. This overarching policy directive states that agencies shall consider life-cycle costs and savings in planning and making determinations about investments in all capital assets, services, and procurements, which will... reduce energy consumption, acknowledging that in some cases, evaluation of life-cycle costs may result in a higher up-front cost with significantly lower maintenance costs, or longer life.

are emitted from vehicles and heavy equipment which are known or suspected to cause cancer or other serious health and environmental effects. These impacts are especially of concern on Guam due to the island's exemption from current low-sulfur fuel requirements. Because high-sulfur fuels are used on Guam, the emissions and public health benefits of low-sulfur fuels (reduced particulate matter and other air toxics emissions) are not realized.

The erDEIS provides a general qualitative discussion of MSAT and states that due to uncertainties and incomplete information, health effects of these emissions cannot be estimated (Vol 6, p. 7-17). We disagree that there currently are no available technical tools to predict project-specific health impacts of the emission increases associated with the project (Vol 6, p. 7-16) (See more under "off base roadway projects" below). EPA has extensive experience quantifying the air toxics impacts associated with transportation sources[13]. Given the potential adverse health effects from mobile source pollutants and the project's potential for emissions in close proximity to residential communities and sensitive receptors, EPA recommends performing an analysis of potential MSAT impacts to inform mitigation measures for the protection of public health[14]. EPA would be happy to work with DoD to determine the appropriate level of analysis and modeling tools for describing the potential health impacts associated with changes in vehicle activity.

Notwithstanding the above, the qualitative analysis of MSAT in the erDEIS could be improved. The erDEIS states that roadway widening may have the effect of moving some traffic closer to homes, schools, businesses and sensitive receptors (Vol 6, p. 7-15), but the locations of these sensitive receptors in relation to the roadway projects and congested roadways is not discussed. Assumptions can be made regarding potential health impacts based on the severity of congestion and levels of construction intensity. The erDEIS states in Volume 2 that sensitive populations on non-DoD land in north Guam are mostly located along major traffic routes such as Route 1 and 3 (p. 5-9) in central Guam mostly around the airport and along Tumon Bay and Agana Bay, with some sensitive populations along Route 1 in the Piti/Nimitz Hill area (p. 5-10). Because of the proximity of these populations, the DEIS should discuss the potential for these populations to be exposed to MSAT and what health impacts could result from such exposures. Considering Guam is a medically underserved community (Vol 2, p. 16-16), low-income populations are present (Vol 2, Sect. 19), and over one-third of the population in the north and central areas are children (Vol 6, p. 20-18), a conservative approach would be appropriate.

> *Recommendations:* For the purpose of identifying public health impacts, EPA recommends performing a quantitative analysis of construction and operational emissions

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[13] For examples in NEPA documents, see: October 2006 China Basin Shipping, http://www.portoflosangeles.org/environment_pn_deir_cs.htm , or the May 2009 Schuyler Heim Bridge Replacement and SR-47 Expressway, http://www.dot.ca.gov/dist07/resources/envdocs/ project EISs.

[14] For most transportation projects, EPA generally recommends the analyses described in the March 2007 report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" conducted for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment and funded by the Transportation Research Board (http://www.trb.org/NotesDocs/25-25(18)_FR.pdf). Procedures for toxicity-weighting, which EPA has found to be especially useful for the targeting of mitigation, are described in EPA's Air Toxics Risk Assessment Reference Library (Volume 3, Appendix B, beginning on page B-4, http://epa.gov/ttn/fera/data/risk/vol_3/Appendix_B_April_2006.pdf).

for the six most significant MSATs: diesel particulate matter, acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene for the base year, peak construction year, and the final build year for those roadway projects and impacted areas neighboring sensitive receptors and residential communities. If results indicate that certain geographic locations will be significantly impacted, dispersion modeling should be considered. EPA is available to help determine which potential problem areas may warrant dispersion modeling. See also comment below under environmental justice.

The qualitative analysis of MSAT exposure impacts from construction of the project should also be improved, as indicated above. Include summaries of the analyses in the public health sections of the DEIS. If no quantitative analysis is performed to estimate the public health impact, EPA considers impacts from MSATs and other vehicle emissions to sensitive populations to be potentially significant due to Guam's use of high-sulfur fuels and the projected substantial increase in congested roadways as a result of the project. Robust mitigation measures would be needed to mitigate these impacts (see below).

No alternative fuels strategy identified

The erDEIS references pollutant reductions that would be achieved as a result of the Energy Independence and Security Act of 2007 (Vol 2, p. 5-5), because this act includes sections to reducing petroleum use and increase alternative fuel use, including:

- Only acquiring any light-duty motor vehicle or medium-duty passenger vehicle that are "low greenhouse gas emitting vehicles" or demonstrating that cost-effective policies have been adopted to reduce petroleum consumption sufficiently to achieve a comparable reduction in greenhouse gas emissions.
- At least a 20% reduction in annual petroleum consumption and a 10% increase in annual alternative fuel consumption by 2015 from a 2005 baseline. Interim milestones will be established.
- Installation of at least one renewable fuel pump at each Federal fleet fueling center by 2010.

It is unclear why this reference is included when there does not appear to be any proposed actions that would advance these goals. Indeed, it is not clear if DoD even plans to utilize low-sulfur fuel during project construction or operation or if it will use higher sulfur fuels allowed by the exemption. Any U.S.-manufactured 2007 model year or newer diesel vehicles that are brought to the island will be inoperable without low sulfur diesel. In addition, the erDEIS does not include any mitigation measures for air impacts, stating that they are not warranted (Vol 2, p. 5-39).

Recommendation: EPA strongly recommends the project construction and operation utilize ultra low sulfur diesel (15 ppm sulfur or lower), which we understand is available from Japan. This would create significant reductions in sulfur dioxide and particulate matter emissions and ensure the operability of newer vehicles being brought to the island. We disagree that mitigation measures are not warranted and recommend, at a minimum, that idle-reduction practices for all construction-related activities be established and that fuel-efficient vehicles be procured. Retrofit of older construction equipment and vehicles

with diesel particulate filters (if low sulfur fuel is acquired) or diesel oxidation catalysts (if it is not), should occur. Diesel particulate filters can reduce particulate matter emissions by approximately 85 percent, while diesel oxidation catalysts can reduce particulate matter by approximately 20 percent.

Consistent with the alternative fuel vehicle goals set forth in the Energy Policy Act of 2005 and with the Navy's existing B-20 standard, we continue to recommend further analysis of biodiesel as an alternative fuel. Used cooking oil is a source of biodiesel that has been overlooked, with approximately 1 million tourists visiting the island annually, and some 140 restaurants operating in Guam, with this number likely to increase. As we previously commented[15], Hawaii has been very successful in implementing a biodiesel program. Based on conversations with Kelly King of Pacific Biodiesel who runs the biodiesel refinery in Maui, Hawaii, a small 250,000 gal/year biodiesel facility is feasible for Guam. According to Ms. King, a facility of this size could be constructed on less than 1 acre of land for approximately $1 million.

Permitting considerations for interim power alternative

The erDEIS states that Interim Alternative 1 is DoD's preferred alternative because it would not require revisions to Guam EPA's existing Part 69 permits for four Guam Power Authority sources (Yigo, Dededo, Marbo, and Macheche). The document states that up to four existing combustion turbines would be refurbished to increase system capacity by 60 MW and allow those emission units to operate up to their permitted hours of operation (page 2-13). EPA believes DoD may be underestimating the likelihood that permit revisions or new permits would be required for Alternative 1. All four GPA facilities mentioned are currently major stationary sources under the Prevention of Significant Deterioration ("PSD") preconstruction review permitting program. Any physical change or change in the method of operation that increases emissions would have to be evaluated for PSD program applicability. If the emissions increase of any attainment pollutant that resulted from the refurbishment of any turbine was significant, e.g., 40 tons per year ("tpy") or more of NO_x or SO_2, the refurbishment project would be a major modification that triggers PSD permitting by EPA Region 9, even if the limitation on the hours of operation in the GPA permits remains unchanged. In addition, the current GPA permits for these facilities contain lb/hr emission limits (in addition to concentration limits). Even if PSD permitting is not triggered, revision of the GPA permits for these facilities may be necessary if the facilities would not be able to comply with their current mass emission limits following turbine refurbishment.

On page 7-5 of Volume 6, the erDEIS refers to Guam EPA's (GEPA) regulations as the source of non-attainment area new source review ("NSR") requirements that could apply to projects within the island's two SO_2 nonattainment areas. While GEPA's regulations would apply to any new or modified source in these areas, these regulations are not the federal nonattainment NSR requirements, since GEPA does not have EPA-approved nonattainment NSR regulations in its State Implementation Plan. Federal nonattainment NSR requirements in this case would come from Appendix S of 40 CFR Part 51. DoD should revise this section to state that any source that triggers nonattainment NSR permitting would have to comply with both GEPA and EPA regulations.

[15] EPA comments on the Draft Description of Proposed Action and Alternatives (DOPAA), sent May 15, 2008

Table 7.2-1 on page 7-5 does not list PM 2.5, which is a "regulated NSR pollutant" under the PSD program and must be considered in PSD applicability determinations. DoD should add this pollutant to the table, and note that the major modification threshold is 10 tpy of direct PM2.5 emissions, 40 tpy of SO_2 emissions, or 40 tpy of NO_x emissions (unless it is demonstrated that NO_x is not a PM2.5 precursor for a particular location).

Additional comments on Air Quality, Energy, and Mobile Source Air Toxics

- The estimated power demand due to the project is unclear. Both Table 2.1-2 and the text following the table are confusing. In addition, sections pertaining to the intermediate alternatives discuss the need for approximately 60 MW of additional power in the short-term; however, the total shortfall in Table 2.1-2 does not equal 60MW. We recommend revising Table 2.1-2 and the explanatory text to more clearly estimate projected demand on Guam due to the military build-up. We note that under the American Recovery and Rehabilitation Act (ARRA) grant programs, Guam has received approximately $30 million for projects that reduce total energy use and fossil fuel emissions and improve energy efficiency. Determination of long-term energy demands should include reductions in energy demand from Guam's ARRA grant programs.
- The erDEIS does not include an analysis of operation or construction-related air toxics impacts for the Marine Relocation actions (Vol 2), nor for the CVN Berth (Vol 4). At a minimum, a qualitative analysis of air toxics impacts should be included in these sections. For impacts that have the potential to be significant, such as emissions from aircraft and ground support equipment, a quantitative analysis of emissions should be the minimum level of analysis, potentially with dispersion modeling to predict ambient air toxics concentrations. EPA would be happy to work with DoD to determine the appropriate level of analysis in these sections.
- The erDEIS indicates that air quality modeling for the utilities alternatives is still in progress so was not included in the erDEIS. The interim power alternatives propose to refurbish and run the existing combustion turbines (CTs) or to increase the hours of operation of existing CTs. We recommend an analysis of air toxics impacts occur for this interim increased power-generation. At a minimum, a quantitative analysis should be included, and in cases where air toxics impacts in the vicinity of these facilities are likely to be significant, (i.e. such as greater than 10 in a million increased cancer risk, based on screening-level dispersion modeling), a full quantitative dispersion analysis of air toxics impacts from these facilities should be included in the DEIS.
- The erDEIS indicates that radon mitigation measures will be incorporated into new construction in high radon zones. We recommend using local Radon experts for radon mitigation during new construction at the base. This will support the emerging radon industry and help protect Guam residents, in general, from Radon exposure by building the capability to address the radon problem in the civilian population's homes throughout Guam.

Environmental Justice

Infrastructure and health impacts not identified

The erDEIS acknowledges significant impacts to EJ populations in north and central Guam, but the impacts identified are solely for access to cultural resources and traffic impacts. As previously stated, there will be significant impacts to the people of Guam as a result of stresses on the potable water systems and wastewater systems. Since all of Guam has environmental justice concerns (85 - 97% minority, over twice the U.S. poverty rate -Vol 2, p. Table 19.1-1), all of these impacts will be disproportionately burdened by these communities.

While the EJ section of Vol. 2 identifies "traffic" as an impact, it does not discuss the air quality and health impacts of this traffic. The erDEIS states that the racial minorities and low-income populations in the northern Dededo and northern Yigo that live near Routes 3 and 9 would be disproportionately impacts by increased traffic (Vol. 2, p. 19-18). It also acknowledges that those living near Route 3, Route 10 north of Route 32 to Route 8, Route 15 at its intersection with Route 10, Route 16, Route 25, Route 26, and Route 28 would experience significant traffic impacts. No mention of air quality /health impacts is included.

There is evidence that environmental justice communities are more vulnerable to pollution impacts than other communities. Disadvantaged, underserved, and overburdened communities are likely to have pre-existing deficits of both a physical and social nature that make the effects of environmental pollution more, and in some cases, unacceptably, burdensome[16]. Also, because Guam has a higher percentage of children (34 – 38%) than the U.S. average (21%), it is also important to describe the increased impacts these air pollutants can have on children. Children are believed to be especially vulnerable due to higher relative doses of air pollution, smaller diameter airways, and more active time spent outdoors and closer to ground-level sources of vehicle exhaust[17].

> *Recommendations:* Include discussions in the EJ/protection of children section regarding infrastructure impacts and possible health effects associated with significant impacts to the GWA water supply and wastewater systems.
>
> Include an analysis and discussion of health impacts to the populations identified as receiving significant traffic impacts. As we stated above in our air quality comments, we recommend identifying public health impacts by performing a quantitative analysis of construction and operational emissions for the six most significant Mobile Source Air Toxics. In cases where air toxics impacts in the vicinity of these facilities are likely to be significant, (i.e. such as greater than 10 in a million increased cancer risk, based on

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[16] EPA's *Framework for Cumulative Risk (www.epa.gov/OSA/raf/publications/pdfs/frmwrk_cum_risk_assmnt.pdf)* and the *National Environmental Justice Advisory Council's (NEJAC) Ensuring Risk Reduction in Communities with Multiple Stressors: Environmental Justice and Cumulative Risks/Impacts (www.epa.gov/compliance/resources/publications/ej/nejac/nejac-cum-risk-rpt-122104.pdf)*

[17] See: http://hydra.usc.edu/scehsc/coep/coep_atlaschap.asp. In addition, several researchers have identified impacts of traffic to children. See: (1) Delfino, RJ et al. 2009. "Repeated hospital encounters for asthma in children and exposure to traffic-related air pollution near the home Annals of Allergy, Asthma & Immunology, 102(2):138-44; (2) McConnell, R. et al. 2006. "Traffic, susceptability, and childhood asthma". Environ. Health Perspectives 114(5): 766-72

screening-level dispersion modeling), a full quantitative dispersion analysis of air toxics impacts from these facilities should be included in the DEIS. EPA would be happy to work with DoD to determine the appropriate level of analysis and modeling tools for describing the potential health impacts associated with changes in vehicle activity.

Relocation assistance needed
The erDEIS states that a relocation study is underway to determine proposed property acquisition and provide relocation (Vol. 6, p.20-18). If relocation is necessary, since Guam is an environmental justice population, EPA recommends relocation assistance be included as mitigation. If these impacts are significant to certain individuals, such relocation and compensation services such as including translation services, assistance in locating and obtaining a replacement property, transportation to visit potential replacement housing if needed, assistance in packing and moving, and/or relocation specialists to work with the population should be considered. We note that CEQ guidance states that mitigation measures discussed in the EIS must cover the range of impacts of the proposal and include such things as ...relocation assistance." (40 questions #19a).

Off Base Roadway Projects

Description of Transportation Projects and Alternatives
The erDEIS includes a conservative estimate of 55 transportation projects (43 off base and 12 intersection improvements at military access points) in its analysis. Although the 55 transportation are identified, only general descriptions of the projects are given. EPA believes the following additional information is necessary to adequately assess potentially significant environmental impacts of these proposed roadway projects:

- ***Scope of Transportation Projects:*** *Include information on the selection process, the anticipated timing for Defense Access Road (DAR) funding for critical transportation projects to support the project's purpose, and contingencies to address anticipated congestion and associated impacts related to the military build-up if key transportation projects are not DAR-funded or delayed for construction.*
  These transportation projects will be considered for DAR funding, but it is unclear how the project's purpose and need will be met or how increased congestion associated with the proposed Guam military build up and related community and air quality impacts will be addressed if a number of proposed transportation projects do not receive DAR funding or are delayed for construction.
- ***Preferred Truck Route:*** *Describe how the proposed truck route differs from current truck routes that support existing Guam military operations and how the current truck route will support the proposed military build up (e.g., for construction, operation, or both). Identify the proposed number of trucks and the anticipated frequency of travel. Assess operational impacts from increased truck traffic associated with the preferred truck route.*
  The document identifies a preferred truck route to move cargo across the island (from the Port to the northern part of the island and Route 15 and Chalan Lujuna from the quarry) and avoid normally congested corridors. The document does not elaborate on the operation of the preferred truck route or the implications of the route "designation".

- ***Construction Activities:*** *Describe specific construction activities (e.g., equipment and trucks needed, duration of the construction, dewatering, grading, fill, etc.) for proposed transportation projects. Identify construction and equipment staging areas for transportation projects and related impacts associated with these sites.*
  "Typical construction activities" for each type of proposed transportation action (i.e., pavement strengthening, road widening, bridge replacement, etc.) are only described in the document as accounts of what would be constructed. To adequately assess impacts to affected community or biological resources, the document should describe how construction will occur and identify specific construction and equipment staging areas when they are likely to occur outside of the footprint of the proposed transportation projects.
  New Access Roads: *Include an analysis of proposed access road impacts or clarify in Volume 6 if their impacts are assessed in other erDEIS Volumes.*
  New access roads are included in project description, but impacts associated with these proposed roads do not appear to be assessed in Volume 6.
- ***Transportation Alternatives:*** *Identify specific road projects that warrant project-level alternatives analysis to avoid and minimize impacts to a specific resource, such as neighboring high quality wetlands. Include additional alternatives or considerations for these specific road projects in the EIS.*
  The description of transportation alternatives describes four composite alternatives associated with the Guam military build up (described in further detail in other volumes) and only identifies a suite of road projects associated with each composite alternative.

Adequacy of Environmental Impacts Analyses for Off Base Roadway Projects

EPA believes the current document does not sufficiently evaluate the impacts of the proposed transportation projects. Volume 6 includes very broad, programmatic statements of possible resource impacts from the proposed transportation projects. Site or project specific analyses of impacts are not provided for most resources to adequately assess potentially significant environmental impacts of the transportation actions. The methodologies for impact assessments for water and biological resources appear to be sufficient strategies, but actual implementation of the proposed methodologies is not captured in the document, including an assessment of indirect impacts (e.g. impacts downstream of construction activities).

Recommendations:

- Include site and project specific resource information for proposed transportation projects, particularly projects that will occur in or adjacent to areas of sensitive biological resources, including wetlands and significant habitat areas, and sensitive receptors, such as hospitals or schools.
- Provide context for the impacted resource, such as the quality of the affected resource and its relationship to the overall resource environment (for example, one acre of wetland impact is part of a larger, high quality emergent wetland with endangered species).
- Expand the analysis to include assessment beyond simply identifying impact acreages by further describing the functions and values that would be lost or degraded for each affected resource. For example, describe impacts to terrestrial biological resources associated with operational use of the proposed transportation projects, such as right of

way maintenance. Include an analysis of impacts to habitat connectivity impacts and/or wildlife corridors.

We have highlighted below specific information or analyses which should be included in the DEIS to ensure an adequate assessment of environmental impacts for the proposed transportation projects:

- ***Non-widening Roadway Projects:*** *Clarify if proposed non-widening roadway projects will include construction staging areas outside of the roadway project footprint and if work within the roadway prism will result in indirect impacts, such as noise disturbance or construction emissions to neighboring communities.* The document assumes no impacts will occur from pavement strengthening projects since the work is limited to existing impervious footprints or would occur in developed areas with no "appreciable effect" to biological resources.
- ***Wetlands:*** *Identify locations of construction activities that will take place within or adjacent to wetland habitat and include wetlands maps that identify the proximity of (tidal and freshwater) wetlands as they relate to roadway projects. Include the acreage of direct or indirect impacts and provide a description of functions and values that would be affected by the impact. If wetlands are not directly or indirectly impacted or are not in proximity to proposed transportation projects, this should be specifically stated in the document.*
  The Marine Biological Resources section includes a general statement that wetlands impacts are only to be of potential significance in those areas where construction activities take place within or adjacent to wetland habitat. In addition, both the Terrestrial and Marine Biological Resources sections simply state in tables that bridge replacements may directly or indirectly impact wetlands in drainages and no mitigation is proposed in either section for wetlands.
- ***Environmental Justice:*** *Identify specific areas or transportation projects that may adversely impact public health or communities. Include mitigation measures to reduce these impacts.*
  The document takes the approach that any significant impact that cannot be mitigated is an environmental justice impact since the island of Guam has a significant number of minority and/or low income communities. The Environmental Justice section in Volume 6 does not include information related to specific transportation projects that appear to have significant community impacts.
- ***Greenhouse Gas Emissions and Climate Change:*** *Identify the transportation projects' direct effects on greenhouse gas emissions and discuss the potential impacts of climate change on the proposed transportation projects. Identify if there are specific mitigation measures needed to 1) protect the project from the effects of climate change, 2) reduce the project's adverse air quality effects, and/or 3) promote pollution prevention or environmental stewardship.*
  The document does not disclose project-related greenhouse gas emissions and does not analyze the potential impacts of climate change on the proposed transportation projects.

Corrections to Mobile Source Air Toxics Section of Roadway Projects

As mentioned above under Air Quality impacts, the erDEIS mischaracterizes the adequacy of existing air toxics methodology and tools for quantitatively characterizing the potential MSAT impacts from changes in onroad vehicle activity. EPA disagrees with the standard Federal Highway Administration approach used throughout Volume 6. The document refers to the February 2006 FHWA MSAT interim guidance which describes how to assess MSAT impacts for transportation projects during the NEPA process and incorrectly refers to the document as joint guidance from FHWA and EPA (Vol 6, p. 7-9). While there are positive elements to this guidance, especially the willingness to acknowledge potential MSAT concerns, EPA continues to disagree with major elements of this approach nationally.

Furthermore, the discussion of "Information that is Unavailable or Incomplete" (Vol 6, p. 7-16) has several inaccuracies requiring correction.

Limitations of Dispersion Models

The discussion of limitations in the dispersion models, CALINE3 and CAL3QHC, is outdated. While it is true that the CALINE and CAL3QHC were developed and validated a number of years ago, as stated in the Report, they continue to undergo validation. A number of recent studies have determined that CALINE, especially "CALINE4," accurately predicts ambient concentrations in near-roadway environments for both gaseous and particulate pollutants (see, for example, Gramatnev *et al.*, Atmospheric Environment, volume 37, pages 465-474, 2003; Zhang *et al.*, Atmospheric Environment, volume 39, pages 4155-4166, 2005). A joint UC Davis - Caltrans report, entitled "A Survey of Air Quality Dispersion Models for Project-Level Conformity Analysis" (June 19, 2006), concluded that available models are appropriate for modeling project-level dispersion of on-road and construction emissions, contradicting the language in the erDEIS. Based on these recent studies and report, CALINE4 would be an appropriate tool for dispersion analysis of MSATs for the EIS.

> *Recommendation:* The discussion of uncertainties in "Dispersion" should be removed and replaced with an updated discussion of the use of CALINE4 in situations similar to the proposed project.

Exposure Levels and Health Effects

The discussion of "Exposure Levels and Health Effects" is also inaccurate. EPA has a long standing experience and published, peer-reviewed guidance for evaluating long-term health effects, including cancer risk. The concerns raised about estimating exposure over a 70-year lifetime have been addressed extensively by EPA. Recently, EPA has published an Air Toxics Risk Assessment Reference Library (http://www.epa.gov/ttn/fera/risk_atra_main.html) that addresses the precise concerns raised in the erDEIS – namely how to develop appropriate exposure scenarios in a risk assessment. While EPA agrees that there are always uncertainties associated with such an analysis, in this case most of the uncertainties would be consistent across alternatives, and thus such an analysis would still be sufficient for distinguishing between the impacts among scenarios and informing mitigation.

> *Recommendation:* The discussion of uncertainties in "Exposure Levels and Health Effects" should be removed and replaced with a discussion of possible exposure

scenarios typically used by EPA in air toxics risk assessments. If a human health risk assessment is pursued in the EIS, we would be willing to assist FHWA in developing meaningful exposure scenarios.

Sustainability

- The erDEIS states that LEED Silver would be pursued for various development areas of the new base and/or for specific buildings (Vol 2, p. 2-15). EPA recommends the main cantonment area pursue LEED for Neighborhood Development (LEED-ND) certification. As a tool that integrates the principles of smart growth, urbanism and green building, LEED-ND can prevent future environmental impacts from transportation, reduce dependency on fossil fuels, minimize impacts to adjacent ecosystems, and promote community health by facilitating walking.
- Wherever roads, buildings, or other infrastructure is planned to be demolished (e.g., p. 3-29 through 3-40 and 8-23 and 8-39). Infrastructure should be deconstructed for material reuse or recycling rather than demolished.
- Construction and demolition materials (C&D) are resources. In dealing with C&D materials, the project should strive to reuse and recycle materials whenever possible to preserve resources and minimize impacts from disposal. To facilitate C&D reuse and recycling, EPA would like to work with the Guam and CNMI Military Relocation officials to plan for a C&D sorting and recycling facility that could integrate materials resale and reuse.
- We encourage adoption of the Anderson AFB Recycling Center model at the new base, with the addition of a household item re-use center.

Miscellaneous

- It is not clear if transient allies training impacts are covered or estimated in the erDEIS. The erDEIS states that transient U.S. DoD and Allies operational forces would likely avail themselves of Guam's increased operational and training capabilities. A visiting Marine Expeditionary Unit, an Expeditionary Strike Group (ESG) and other joint and combined task forces including allied nation forces would likely conduct combined training exercises in Guam and the CNMI. In addition, the Japanese Self-Defense Force in the near term would have ground and air forces utilizing the new facilities and ranges. (Vol. 1, p. 2-8)
- The erDEIS assumes the MIRC preferred alternative is the baseline conditions, however, this EIS has not yet been finalized (Vol 1, p. 1-3)
- The erDEIS states that the use of south Finegayan requires replacement of Navy housing, and that it may be relocated to Navy Main base (vol 2, p.2-22). Approximately 60 families now live on South Finegayan (vol. 2, p.2-25). This replacement housing would be a connected action under NEPA. It does not appear to be included in the impact assessment.
- The FEMA maps are not readable.
- The erDEIS references EPA's regulations on floodplain management. These are not applicable to the project. (vol. 2, p. 4-18)
- We recommend that Volume 6 be reorganized to compile all discussions of each subsection (e.g. wastewater, power, etc.) together instead of being spread across multiple chapters. This will add substantially to the readability of these sections.

EXHIBIT V

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, California 94105

IN THE MATTER OF:	Docket No. CWA 309(a)-09-030
Guam Waterworks Authority	**Findings of Violation and Order for Compliance**
Northern District Sewage Treatment Plant, NPDES Permit No. GU0020141	
and	Proceedings under sections 308(a) and 309(a) of the Clean Water Act, as amended, 33 U.S.C. §§ 1318(a) and 1319(a)
Agana Sewage Treatment Plant, NPDES Permit No. GU0020087.	

FINDINGS OF VIOLATION AND ORDER FOR COMPLIANCE

This Findings of Violation and Order For Compliance is issued pursuant to the authority vested in the Administrator of the U.S. Environmental Protection Agency ("EPA") under sections 308(a) and 309(a) of the Clean Water Act, as amended ("Act"), 33 U.S.C. §§ 1318(a) and 1319(a). This authority has been duly delegated to the Director, Water Division, EPA Region 9. Notice of this action has been given to the Government of Guam.

FINDINGS OF VIOLATION

1. Section 301(a) of the Act, 33 U.S.C. § 1311(a), provides that except as in compliance with certain specified sections of the Act, including section 402, "the discharge of any pollutant

by any person shall be unlawful." Section 402 of the Act, 33 U.S.C. § 1342, provides for the issuance of National Pollutant Discharge Elimination System ("NPDES") permits allowing for the discharge of various pollutants to waters of the United States. Section 309(a)(3) of the Act, 33 U.S.C. § 1319(a)(3), authorizes the issuance of an order requiring compliance in response to the violation of a condition of an NPDES permit.

2. Guam Waterworks Authority ("GWA") operates a facility known as Northern District Sewage Treatment Plant ("NDSTP") in the town of Dededo, Guam, and a facility known as Agana Sewage Treatment Plant ("Agana STP") in the town of Agana, Guam. NDSTP and Agana STP were formerly operated by the Public Utility Agency of Guam. NDSTP and Agana STP are publicly owned treatment works in the context of section 301 of the Act and as defined at 40 C.F.R. § 403.3, and are facilities from which pollutants are discharged through point sources subject to the NPDES permit program.

3. Discharges from NDSTP are governed by the terms and conditions of NPDES Permit No. GU0020141, issued by EPA in 1986. Discharges from Agana STP are governed by the terms and conditions of NPDES Permit No. GU0020087, issued by EPA in 1986.

4. NPDES Permit No. GU0020141 and NPDES Permit No. GU0020087 each became effective on June 30, 1986, and expired on June 30, 1991.

5. Prior to expiration of NPDES Permit No. GU0020141 and NPDES Permit No. GU0020087 in 1991, the Public Utility Agency of Guam submitted to EPA a "National Pollutant Discharge Elimination System Application for Permit to Discharge Wastewater, Standard Form A - Municipal" dated December 28, 1990, pertaining to NDTSP and a "National Pollutant Discharge Elimination System Application for Permit to Discharge Wastewater,

Standard Form A - Municipal" dated December 28, 1990, pertaining to Agana STP. Pursuant to 40 C.F.R. § 122.6, the terms and conditions of each of the permits have been administratively extended.

6. NPDES Permit No. GU0020141 and NPDES Permit No. GU0020087 establish, among other terms and conditions: effluent limitations on the discharges authorized; monitoring requirements (including provisions that address the locations at which receiving water monitoring is to be performed); and reporting requirements (including provisions that require that quarterly Discharge Monitoring Reports and other information regarding the facilities' discharges be provided to EPA). NPDES Permit No. GU0020141, Part I.A, D and E; NPDES Permit No. GU0020087, Part I.A, D and E.

7. Based upon EPA's review of the Discharge Monitoring Reports provided by GWA, and other information related to NDSTP and Agana STP, EPA has determined that the discharges from NDSTP and Agana STP have been and are in substantial noncompliance with numerous conditions of the NPDES permit governing each facility, including, for the last two quarters for which EPA has received Discharge Monitoring Reports:

(a) violations of the monthly average concentration for settleable solids at NDSTP in January and March, 2009;

(b) violations of the monthly average concentration for suspended solids at NDSTP in January, February, March, April, May and June, 2009;

(c) violations of the monthly average concentration for biochemical oxygen demand (5-day) at NDSTP in March, April, May and June, 2009;

(d) violations of the monthly average concentration for suspended solids at Agana

STP in January, 2009; and

(f) violations of the monthly average concentration for biochemical oxygen demand (5-day) at Agana STP in January, February, March, April, May and June, 2009.

8. By violating the terms and conditions of the NPDES permit governing NDSTP, and the terms and conditions of the NPDES permit governing Agana STP, GWA has violated section 301(a) of the Act, 33 U.S.C. § 1311(a).

9. In December 2008, GWA completed construction of a new outfall and diffuser at Agana STP. In January 2009, GWA completed construction of a new outfall at NDSTP. Neither of the new outfalls are authorized under the existing NPDES permits. EPA has determined that requirements should be established to assure that discharges from the new outfall and diffuser at Agana STP and the new outfall at NDSTP are appropriately regulated and monitored and that reports of that monitoring are provided to EPA.

ORDER FOR COMPLIANCE

Under section 308(a) of the Act, 33 U.S.C. § 1318(a), EPA may require reports and information from the owner or operator of a point source for purposes of determining compliance with the Act's requirements or carrying out the NPDES program. Under section 309(a) of the Act, 33 U.S.C. § 1319(a), EPA may, upon finding a person in violation of specific sections of the Act, issue an administrative order for compliance. Based on the foregoing Findings and pursuant to sections 308(a) and 309(a) of the Act, EPA hereby orders GWA to comply with sections 301(a) and 402 of the Act, 33 U.S.C. §§ 1311(a), 1342, and with the following requirements:

A. GWA shall comply with the terms and conditions of NPDES Permit No. GU0020141, and the terms and conditions of NPDES Permit No. GU0020087.

B. 1. With respect to Agana STP, GWA shall:

a. comply with the monitoring and reporting requirements applicable to Stations D, E and F (see, NPDES Permit No. GU0020087, page 4) at the following new locations: Station G at the new outfall and diffuser; Station H at 100 meters south of the new outfall and diffuser; and Station I at 1000 meters east of the new outfall and diffuser; and

b. if any discharges are made through the former outfall, also comply with the monitoring and reporting requirements applicable to Stations D, E and F.

2. With respect to NDSTP, GWA shall:

a. comply with the monitoring and reporting requirements applicable to Stations C, D and E (see, NPDES Permit No. GU0020141, page 4) at the following new locations: Station F at the new outfall; Station G at 100 meters south of the new outfall; and Station H at 1000 meters east of the new outfall; and

b. if any discharges are made through the former outfall, also comply with the monitoring and reporting requirements applicable to Stations C, D and E.

C. By December 31, 2009, GWA shall provide to EPA additional information in support of its applications to update those 1990 applications before EPA prepares the draft permit for Agana STP and the draft permit for NDSTP pursuant to 40 C.F.R. § 124.6.

D. All submittals made under this Order shall include the following certification signed by a principal executive officer of GWA or such an officer's duly authorized representative:

> I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to

assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

E. All submittals made pursuant to this Order shall be mailed to:

John Tinger
U.S. Environmental Protection Agency, Region 9
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

and, with respect to Guam Environmental Protection Agency,

Lorilee T. Crisostomo
Administrator
Guam Environmental Protection Agency
P.O. Box 22439 GMF
Barrigada, Guam 96921

or to such persons as Administrator Crisostomo shall designate.

F. This requirement of information is not subject to review by the Office of Management and Budget under the Paperwork Reduction Act because it is not a "collection of information" within the meaning of 44 U.S.C. § 3502(3). It is directed to fewer than ten persons and is an exempt investigation under 44 U.S.C. § 3518(c)(1) and 5 C.F.R. § 1320.4(a)(2).

G. EPA has promulgated regulations to protect the confidentiality of the business information it receives at 40 C.F.R. Part 2, Subpart B. A claim of business confidentiality may be asserted in the manner specified by 40 C.F.R. § 2.203(b) for all or part of the information requested. EPA will disclose business information covered by such a claim only as authorized under 40 C.F.R. Part 2, Subpart B. If no claim accompanies the business information at the time

EPA receives it, EPA may make at available to the public without further notice. Respondent may not withhold from EPA any information on the grounds that it is confidential business information.

H. Issuance of this Order shall not be deemed an election by EPA to forego any remedies available to it under the law, including without limitation any administrative, civil, or criminal action to seek penalties, fines, or other appropriate relief under the Act. EPA reserves all rights and remedies, legal and equitable, available to enforce any violation cited in this Order and to enforce this Order.

I. Section 309(a), (b), (d) and (g), of the Act, 33 U.S.C. § 1319(a), (b), (d) and (g), provides administrative and/or civil judicial relief for failure to comply with the Act. In addition, section 309(c) of the Act, 33 U.S.C. §1319(c), provides criminal sanctions for negligent or knowing violations of the Act, and for knowingly making false statements.

J. This Order is not a permit under the Act, and does not waive or modify GWA's obligations and responsibility to ascertain and comply with all applicable federal, territorial or local laws, regulations, ordinances, permits or licenses.

K. This Order shall become effective upon the date of receipt by GWA.

Date: 30 September 2009

Alexis Strauss
Director, Water Division
U.S. Environmental Protection Agency, Region 9