UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

NOV 18 2009

Mr. Jesse Martinez
Naval Facilities Engineering Command, Southwest
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: Draft Environmental Impact Statement for Basewide Utilities at Marine Corps Base Camp Pendleton, CA (CEQ # 20090330)

Dear Mr. Martinez:

We appreciate the opportunity to review the subject document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. This letter conveys our comments, which were also prepared under the authority of, and in accordance with, the provisions of the Federal Guidelines (Guidelines) promulgated at 40 CFR 230 under Section 404(b)(1) of the Clean Water Act (CWA). Thank you for extending the comment period, in your call with Tom Kelly of my office on November 9, 2009.

EPA acknowledges the need for improved wastewater treatment and a reliable source of power for Marine Corps Base Camp Pendleton. We understand the Base recently received Notices of Violations (issued by the Regional Water Quality Control Board, San Diego Region, on September 22, 2009 and November 17, 2009) related to Sewage Treatment Plant 12 exceedances of antimony, cadmium, and beryllium concentrations, and multiple power failures that caused the effluent flow meters to stop recording. We are pleased that the Marine Corps has chosen a tertiary treatment design that will allow for the reuse of reclaimed water from the treatment system, and conserve potable water use. We also acknowledge the benefit of the low-impact site design and encourage the Marine Corps to include more specific commitments in the Final Environmental Impact Statement (FEIS). Our detailed comments (enclosed) provide suggestions to mitigate air toxics emissions from construction equipment, improve the energy efficiency of the wastewater treatment facility, and generate renewable energy.

While we acknowledge the need for improved utilities infrastructure, we have rated the Draft Environmental Impact Statement (DEIS) as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "*Summary of Rating Definitions*"). We are concerned about the project's impacts to water resources, specifically that the DEIS does not demonstrate compliance with EPA's Guidelines for the discharge of dredged or fill material waters of the U.S.

We appreciate the opportunity to review this DEIS. When the FEIS is released for public review, please send one (1) hard copy to the address above (mail code: CED-2). If you have any

questions, please contact me at (415) 972-3521, or contact Tom Kelly, the lead reviewer for this project. Tom can be reached at (415) 972-3852 or kelly.thomasp@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Enclosed: EPA Detailed Comments
EPA Ratings Summary

cc: Colonel James Seaton III, Marine Corps Base Camp Pendleton
Mark Durham, U.S. Army Corps of Engineers
Peter Beck, U.S. Fish and Wildlife Service

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR BASEWIDE UTILITIES INFRASTRUCTURE, MARINE CORPS BASE CAMP PENDLETON, SAN DIEGO COUNTY, CA, NOVEMBER 9, 2009

Water Resources

Direct and Indirect Impacts

The purpose of the Clean Water Act is to restore and maintain the chemical, physical and biological integrity of waters of the United States (waters). These goals are achieved, in part, by controlling discharges of dredged or fill material pursuant to EPA's *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves the Applicant's project purpose. In addition, no discharge can be permitted if it will cause or contribute to significant degradation of waters.

The DEIS describes a delineation of jurisdictional wetlands and waters (page 3.3-2), but does not clarify if that delineation has been verified by the U.S. Army Corps of Engineers (USACE). In addition, based on information provided in the DEIS, it is difficult to discern the extent of impacts to waters. According to Table 4.1.3.1-3 in the DEIS, under Alternative 1, there are 49.94 acres of potential direct impacts to wetland/riparian plant communities. Table 4.1.3.1-4 states there are 1.76 acres of permanent impacts to waters and 87.38 acres of temporary impacts to waters. Based on the evaluation of six different tables in Chapter 4.1 representing Option 1, there are 679.92 acres of potential indirect impacts to wetland/riparian plant communities within Alternative 1.

In order to adequately assess the impacts to waters, the DEIS should provide direct (differentiating between permanent and temporary impacts) and indirect acreage impacts to waters for each Alternative. The DEIS should clarify the differences between direct impacts to wetland/riparian plant communities and direct impacts to waters. In addition, the DEIS should provide additional information to assess the indirect impacts to the function and acreage of waters.

Recommendations:

- Once the delineation of the extent of waters, including wetlands, on the Project site has been verified by USACE, information should be updated regarding estimated impacts to waters. Provide this information in the FEIS. A jurisdictional determination by USACE is needed prior to publication of the FEIS in order to provide a determination of potential significant impacts and identify mitigation and avoidance measures in the design of the Project.

- The FEIS should include estimates of acreages of direct and indirect impacts to waters for each alternative.
- Differentiate between direct impacts to wetland/riparian plan communities and direct impacts to waters.
- Provide additional information on the assessment of indirect impacts to the function and acres of waters for each alternative. Provide tables representing the total indirect impact to waters for each alternative.

Least Environmentally Damaging Practicable Alternative (LEDPA)

Pursuant to the Guidelines, the applicant for a permit to discharge dredged or fill material bears the burden of clearly demonstrating that the preferred alternative is the LEDPA that achieves the overall project purpose, while not causing or contributing to significant degradation of the aquatic ecosystem. Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters resulting from each alternative considered. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, so long as it does not have other significant adverse environmental consequences. Only when an analysis is correctly structured can the applicant or the permitting authority be assured that no discharge other than the practicable alternative with the least adverse impact on the aquatic ecosystem has been selected (40 CFR 230.10(a)). In addition, the applicant must clearly demonstrate that alternatives that do not result in the discharge of dredged or fill material in aquatic sites are either not practicable, or have other significant adverse environmental consequences.

At this time, EPA believes that the alternatives analysis in the DEIS does not demonstrate compliance with the 404 (b)(1) Guidelines. The DEIS lacks an analysis of alternatives to minimize environmental impact. The DEIS states the project design would avoid impacts to vernal pools, riparian habitats and jurisdictional waters to the extent feasible (p. 2-34), but this statement is insufficient to demonstrate compliance with the Guidelines. The DEIS must demonstrate avoidance and minimization for each Option discussed in the document. For example, horizontal directional drilling (HDD) is proposed for San Mateo Creek and the Santa Margarita River, but it is not clear whether it will be applied to other riverine waters or depressional wetlands on the project site. The DEIS discusses the need to follow existing alignments for various utility lines, but does not provide enough information on minimization of impacts to waters through HDD or a shift in the alignment of a new utility line. In addition, there is no discussion on the practicability of alternatives which minimize the construction corridor widths and staging areas.

EPA is concerned with the extent of impacts to waters of the U.S. The DEIS states Alternative 1 would result in direct impacts (permanent and temporary) to approximately 89.14 acres of waters and indirect impacts to 679.62 acres of waters. The Guidelines prohibit granting a 404 permit to 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)).

EPA offers the following recommendations to help facilitate compliance of the project with the Section 404 Guidelines:

Recommendation:

- The FEIS should include a detailed evaluation of the project alternatives in order to demonstrate the project's compliance with the 404(b)(1) Guidelines and support the identification of the LEDPA by USACE. The alternatives analysis should include additional information that demonstrates the proposed project is avoiding and minimizing damage to waters as required by the Guidelines. If, under the proposed project, dredged or fill material would be discharged into waters of the U.S., the FEIS should discuss alternatives to avoid those discharges.

Mitigating Impacts to Biological Resources

Pursuant to the Guidelines, the applicant must mitigate for unavoidable impacts to waters. Based on a review of the DEIS, Table 4.1.3.1-2 Mitigation Measure for Impacts to Biological Resources, it appears the applicant proposes to mitigate at a ratio of 2:1 for permanent loss of acreage and 1:1 for temporary loss of acreage. There is no discussion regarding compensation for potential indirect impacts to over 679.62 acres of waters. Details regarding compensatory mitigation are deferred to the 404 permit process.

Recommendation:

- If a discharge is permitted, the FEIS should discuss how potential impacts would be minimized and mitigated. This discussion should include: (a) acreage and habitat type of waters of the U.S. that would be created, restored, or preserved; (b) water sources to maintain the mitigation area; (c) a revegetation plan utilizing native plants; (d) maintenance and monitoring plans, including performance standards to determine mitigation success; (e) an Adaptive Management Plan; (f) the parties that would be ultimately responsible for the plan's success; and (g) contingency plans that would be enacted if the original plan fails. Mitigation should be implemented in advance of the impacts to avoid habitat losses due to the lag time between the occurrence of the impact and successful mitigation. In addition, the FEIS should include compensatory mitigation for indirect impacts to waters.

Air Toxics Emissions

Tables 4.1.9-1 and 4.1.9-2 estimate annual emissions of NO_x, PM-10 and other pollutants in the South Coast and San Diego Air Basins. EPA agrees that the emissions do not trigger a conformity determination, but the emissions are substantial – 60 tons NO_x in the South Coast Air Basin and 49 tons of NO_x and 50 tons of PM10 in the San Diego Air Basin in 2012 alone – and may be readily mitigated.

Recommendation:
In addition to the PM10 mitigation measures in Section 2.5.3, EPA recommends that all of the following mitigation measures be adopted in the FEIS to further reduce impacts associated with emissions of particulate matter and other toxics from construction-related activities:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. Engine certification data can be found at the EPA Engine Certification Data web page: http://www.epa.gov/OMS/certdata.htm.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards. In general, only Tier 2 or newer engines should be employed in the construction phase. EPA offers these model contract specifications (http://www.epa.gov/otaq/diesel/construction/documents/cl-nedc-model.pdf) as one method to accomplish this goal.

- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Energy Efficiency/Greenhouse Gas Emissions Mitigation

The DEIS clearly demonstrates the importance of energy efficiency to the Marine Corps. Under the Marine Corps Federal Energy and Water Management Program Campaign Plan (2009), all acquisitions of relevant products will meet Energy Star and Federal Energy Management Plan (FEMP) guidelines, and new construction and major renovation will meet the performance standards of the Green Building Council's Leadership in Energy and Environmental Design (LEED) rating of silver (page 5-9). Unfortunately, the DIES also states, "the new Basewide utilities infrastructure projects themselves are designed to be more efficient than the outdated systems that they are replacing . . . [t]herefore, no additional conservation measures related to direct energy consumption are identified" (p. 7-3).

Wastewater Treatment Plants do not have LEED ratings, but that should not prevent the design of a highly efficient facility. We offer suggestions (below) to improve the energy efficiency of the wastewater treatment system. These suggestions can not only mitigate greenhouse gas emissions, but significantly reduce the operating cost of the Northern Regional Tertiary Treatment Plant.

Recommendations:

Reduce energy use from aeration systems (approximately 50 to 65% of the net power demand for a typical activated sludge wastewater treatment plant[1]):

- increase residence time for additional treatment instead of adding more aeration, which requires additional pumping
- consider energy efficient aeration such as a high-density diffuser

Energy efficiency considerations in treatment plant design:

- ensure operating energy cost is considered in wastewater treatment plan design
- to the extent possible, lay out facilities so that gravity moves wastewater and reclaimed (or gray) water downhill
- locate wastewater treatment facilities near potable water users
- lay out the pipes within the treatment facility first, so water is moved the shortest and most direct distances with the least amount of turns and bends
- remove solids at the beginning of treatment to reduce the extra energy necessary to move solids through the treatment facility
- incorporate a drying process with the solids removal process to reduce extra

[1] Wastewater Technology Fact Sheet, Fine Bubble Aeration, September, 1999 http://www.epa.gov/owm/mtb/fine.pdf

energy needed to move the extra moisture content in the solids

- locate sites to received reclaimed wastewater near the treatment plant

Pumping and piping considerations to reduce energy use:

- to reduce the energy required to pump wastewater, increase piping sizes (larger diameter) and select low friction piping (plastic or epoxy coated steel), as noted by the Department of Energy at http://www1.eere.energy.gov/industry/bestpractices/pdfs/motor1.pdf
- use variable speed pumps and motors to match capacity with variable demand

Reduce peak energy use

- set up the treatment system to operate within flexible timeframes to avoid using energy during high cost periods
- set up payment plans to receive compensation from the power provider for agreeing not to use energy during certain times

Renewable Energy Opportunity

The DEIS states that Northern Regional Tertiary Treatment Plant will use an anaerobic digestion process. Anaerobic digesters generate methane or biogas emissions. As the DEIS notes, methane has 21 times the global warming potential of CO_2. Methane emissions are readily controllable, yet the DEIS does not discuss control of these emissions.

The DEIS mentions solar power as an alternative considered but eliminated from further analysis. It also mentions renewable energy projects within the operation area of the Naval Facilities Engineering Command (NAVFAC) Southwest, the goals of Executive Order 13423 and the Energy Policy Act of 2005, but does not consider renewable energy sources for this project. With the recent issuance of Executive Order 13514 on October 5, 2009, the Marine Corps and NAVFAC Southwest have even more incentives to seek renewable energy opportunities; however, it appears that NAVFAC Southwest did not consider a readily available source of renewable energy for this project: electricity and heat from methane emissions of the wastewater treatment plant's anaerobic digestion process.

A Federal Energy Management Program Fact Sheet (http://www1.eere.energy.gov/femp/pdfs/bamf_wastewater.pdf) lists the benefits of generating energy from the methane, or biogas produced by digestion process, including reduced energy costs, progress toward federal renewable energy goals, and reduced emissions from flaring. The fact sheet also states that most treatment plants could produce power from the gas and still heat their digesters with the waste heat from the generation process. While the fact sheet offers some of the latest technologies for this purpose, and the means to arrange financing, the DEIS itself mentions that Marine Corps Air Station Miramar purchases 3 megawatts of energy generated from captured methane from the Miramar Landfill (page 5-9).

If Camp Pendleton decides to generate energy from the biogas emissions, it could also consider increasing energy generation and reducing solid waste disposal through codigestion of biosolids (e.g. fats, oils, grease, food waste etc.). For more information on this subject, visit http://www.epa.gov/region09/waste/organics/ad/EBMUDFinalReport.pdf.

Recommendation:
The FEIS should discuss whether methane or biogas emissions from anaerobic digestion will be mitigated through the use of air pollution controls. The FEIS should also discuss the opportunity to generate electricity and heat from methane emissions.

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.