California Regional Water Quality Control Board
San Francisco Bay Region

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TREASURE ISLAND
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Commanding Officer
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5190
Attention: Mr. Michael Bloom

Subject: Development of Remedial Decisions for Areas of Degraded Ground Water at Treasure Island Naval Station, San Francisco, California

Dear Mr. Bloom:

Introduction

On October 27, 1999 Regional Board staff (Board staff) met with representatives of the Navy, City of San Francisco, Department of Toxic Substances Control, and the United States Environmental Protection Agency. The purpose of the meeting was to discuss issues related to ground water quality at Treasure Island Naval Station (Treasure Island). One of the key items of discussion was the Regional Board's regulatory process for developing remedial decisions. The purpose of this letter is to document and clarify the Regional Board's remedial decision process.

There were many other issues discussed at the meeting regarding water quality at Treasure Island. Issues included ground water beneficial uses, screening levels for petroleum hydrocarbons in soil and ground water, ambient levels of metals in ground water, and the point of compliance for ground water cleanup goals. Board staff is preparing a separate letter regarding these other issues that will document our understanding of the meeting discussions.

State Water Resources Control Board Resolution No. 68-16

State Water Resources Control Board Resolution No. 68-16 (Res. 68-16) is a part of the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) and describes a policy of non-degradation for surface and ground waters of the State of California (State). The policy requires any changes in water quality to (1) be consistent with the maximum benefit to the people of the State; (2) not unreasonably affect present and anticipated beneficial uses of water; and, (3) not result in water quality less than prescribed in plans and polices of the Regional Board.

Res. 68-16 provides the Regional Board with discretion in establishing cleanup goals where discharges of waste have degraded waters of the State. The area of discretion lies between background water quality (lower limit) and some promulgated numerical value that is protective

of all assigned beneficial uses (upper limit). In establishing the appropriate cleanup goal, the Regional Board is required by Res. 68-16 to take into consideration various technical, economic, and social factors. In no case is the cleanup goal automatically assumed to be the upper limit of the Regional Board's discretion. On the other hand, rarely would the Regional Board put forth the position that background water quality is technically or economically feasible or reasonable.

Ground Water Beneficial Uses

Board staff's forthcoming letter will provide more detail regarding the status of the Regional Board's efforts to de-designate the currently assigned municipal and domestic water supply (MUN) beneficial use for ground water at Treasure Island. The following brief discussion is intended to assist the Navy in understanding the process for developing numerical cleanup goals for areas of degraded ground water.

Numerical standards are developed for protection of a variety of beneficial uses for ground and surface waters. The most common numerical standards are for MUN uses. An example would be California's primary drinking water standard for benzene, which is 1.0 µg/L. Because ground water at Treasure Island discharges into San Francisco Bay, the saltwater aquatic habitat surface water beneficial use must also be taken into consideration.

In determining the upper limit for cleanup goals pursuant to Res. 68-16, it is important to identify all the assigned beneficial uses and then determine the numerical standards that have been established for protection of the beneficial uses. Under the current Basin Plan, the MUN use will in most cases dictate the most restrictive numerical standards. The most restrictive numerical standard must be chosen as the upper limit for the cleanup goal because the standard will be protective of all assigned beneficial uses.

The following paragraphs provide a discussion of State Water Resources Control Board Resolution No. 92-49 (Res. 92-49). Note that Res. 92-49 provides the Regional Board with discretion to "temporarily suspend" beneficial uses for the purposes of cleanup projects (i.e., containment zone). As such, although the MUN beneficial use designation is critical in determining appropriate cleanup goals, the designation in itself does not restrict the Regional Board's ability to approve of technically and economically reasonable strategies for management of risks to human health and the environment. In consideration of technical and economic issues, the containment zone strategy has already been implemented for the debris disposal areas at Site 12. Board staff has informally agreed to a remedial strategy that is focussed on long-term management of risks for (1) human health through deed restrictions for ground water use on Treasure Island; and, (2) protection of the aquatic habitat of San Francisco Bay through monitored natural attenuation.

State Water Resources Control Board Resolution No. 92-49

Res. 92-49 is a policy of the State of California with respect to actions of cleanup and abatement, and was developed pursuant to the authority of Section 13304 of the California Water Code. Res. 92-49 has been incorporated into the Basin Plan, and thus is also considered to be policy of the Regional Board. Res. 92-49 sets forth procedures for responsible parties to develop corrective action strategies for restoration of water quality within a ***reasonable*** time frame. The cleanup strategy used (i.e., active or passive) and the time frame to restore water quality (i.e., achieve cleanup goals) are subject to numerous technical, economic, and social factors.

Numerical cleanup goals are typically developed during and after the Feasibility Study process. Res. 92-49 contains criteria for justifying cleanup goals that are higher than background water quality and are protective of all assigned beneficial uses. All numerical cleanup goals must be (1) protective of all assigned beneficial uses; (2) technically and economically achievable; and, (3) attainable within a reasonable time frame. Data collected during field pilot tests are useful for developing and justifying the technical and economic feasibility of cleanup goals.

Ultimately, the time frame for cleanup is subject to the discretion of the Regional Board. If the Regional Board determines that beneficial uses can not be restored within a reasonable time frame, Res. 92-49 provides a process for the development and implementation of a strategy for long-term protection of human health and the environment (i.e., containment zone). The only fundamental difference between an active or passive cleanup strategy and a containment zone is the time frame for cleanup. If a containment zone is established, the responsible parties are not required to restore beneficial uses within any measured time frame. However, the responsible parties would still be required to (1) implement technically and economically feasible cleanup; (2) prevent migration of the plume; and, (3) prevent adverse impacts to human health and the environment.

The justification for a containment zone must be made on the basis of technical and economic feasibility. Board staff believes that the aquifer characteristics at Treasure Island are one item to be considered in assessing technical and economic feasibility. Risk factors such as incomplete exposure pathways are not adequate justification for a containment zone. However, these factors should be considered in developing a plan for long-term management of the risks associated with remaining pollutants if a containment zone strategy is approved.

No further action (NFA), as defined in the CERCLA process, is not a cleanup strategy because management tools are not a component of the action. NFA is only appropriate when cleanup goals have been achieved and further monitoring is not required. Monitored natural attenuation and containment zones are not NFA decisions because long-term monitoring and risk management are required as long as the beneficial uses of the ground and/or surface water remain impacted or are threatened to be impacted.

Summary

Regardless of the assigned beneficial uses, the Navy must complete the Remedial Investigation at each site by fully characterizing the nature and extent of soil and ground water that has been adversely impacted by waste discharges. Once the site characterization is complete, the Navy must consider the technical and economic feasibility of reducing contaminant concentrations and restoring water quality. Cleanup goals for soil and ground water should be developed after the Remedial Investigation is complete and in accordance with the provisions of Resolutions 68-16 and 92-49. NFA will not be an appropriate remedial decision for any site where cleanup is considered technically and economically feasible, and/or where assigned beneficial uses are impacted or threatened.

If you have questions regarding this matter, please feel free to call me at (510) 622-2377.

Sincerely,

Chris Maxwell
Associate Engineering Geologist
Ground Water Protection and Waste
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