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ALAMEDA POINT
SSIC NO. 5090.3

Department of Toxic Substances Control

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

8800 Cal Center Drive
Sacramento, California 95826-3200

Arnold Schwarzenegger
Governor

November 15, 2005

Mr. Lou A. Ocampo, PE
Remedial Project Manager
Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108-4310

TECHNICAL COMPLETENESS OF THE FINAL CLOSURE REPORT FOR THE INDUSTRIAL WASTE TREATMENT PLANT (IWTP) 25, NAVAL AIR STATION, ALAMEDA, CALIFORNIA, EPA ID # CA 2 170 023 236

Dear Mr. Ocampo:

The Department of Toxic Substances Control's (DTSC) Human and Ecological Risk Division (HERD) and Geological Support Unit (GSU) have reviewed the Final Closure Report for IWTP 25 at the former Alameda Naval Air Station dated September 26, 2005. Comments from both HERD and GSU are provided in the attached memorandums dated November 2, 2005 and October 27, 2005 respectively. The comments do not require a response from the Navy and the final closure report is considered technically complete.

In addition, DTSC has reviewed the October 2005 Draft Closure Certification Report for IWTP 25 and has no comments on this document. Please finalize the Closure Certification Report and submit to DTSC by December 15, 2005 so that we can proceed with approval of this closure certification. If you have any questions or comments concerning this letter please contact me at (916) 255-6528.

Sincerely,

Dean Wright
Standardized Permitting and Corrective Action Branch

Attachments: HERD Memorandum dated November 2, 2005
GSU Memorandum dated October 27, 2005

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cc: with attachments

Ms. Glynis Foulk
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Department of Toxic Substances Control

Alan C. Lloyd, Ph.D.
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Arnold Schwarzenegger
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MEMORANDUM

TO: Dean Wright, DTSC Project Manager
Facilities Permitting Branch
8800 Cal Center Drive
Sacramento, CA 95826

FROM: James M. Polisini, Ph.D.
Staff Toxicologist, HERD
1011 North Grandview Avenue
Glendale, CA 91201

DATE: November 2, 2005

SUBJECT: NAVAL AIR STATION ALAMEDA (ALAMEDA POINT), INDUSTRIAL WASTE TREATMENT 25 FINAL CLOSURE REPORT, ECOLOGIAL RISK ASSESSMENT [SITE 200004-33 PCA 25045 MPC 06 H:20]

BACKGROUND

HERD reviewed the document titled *Final Closure Report, Industrial Waste Treatment Plant 25, Hazardous Waste Facility Permit CA 2170023236, Naval Air Station, Alameda, California,* dated September 26, 2005. The submitted document was prepared by Shaw Environmental, Inc. of Concord, California. In addition to a review of the main document, a detailed review was made of Appendix K supplied on CD-ROM, titled *Screening-Level Ecological Risk Assessment Industrial Waste Treatment Plant 25 Hazardous Waste Facility Permit CA 2170023236,* dated September, 2005 and prepared by Sultech, of San Diego, California.

Industrial Waste Treatment Plant (IWTP) 25 is located in Parcel 27 in the southern central section of Alameda Point. The Environmental Baseline Survey (EBS) enumerated seven buildings currently in Parcel 27 (Building 25, 25A, 451, 494, 595, 622, and 623). Building 25, a 54,500 square foot steel warehouse structure, was used as a facility for corrosion prevention processes generating halogenated and non-halogenated organic solvents, metals, petroleum products and corrosives. Rinsate waste from Building 25 was conveyed to Building 25A south of Building 25 for treatment in IWTP 25. Chemicals used or generated in IWTP 25 during wastewater treatment

included paint sludge, wastewater containing paint stripper and anticorrosive, treatment sludge, sulfuric acid, phosphoric acid, and small quantities of phenol, ammonia, phosphate, mercury waste, chromium and spent methylene chloride waste. Precipitated sludge form IWTP 25 was dewatered and disposed of off site. IWTP 25 wastewater was discharged via the former NAS industrial sewer system to the East Bay Municipal Utility District (EBMUD) wastewater treatment plant. Building 25 processes were terminated in 1997. Operations of the IWTP 25 continued until 1999, treating fluid waste from base closure and cleanup activities.

NAS Alameda was an active naval facility from 1940 to 1997. Operations included aircraft, engine, gun and avionics maintenance; fueling activities; and metal plating, stripping and painting. Linked storm water and industrial wastewater lines discharged to the Seaplane Lagoon in the Northwest and Northeast corners, as well as the Oakland Inner Harbor Channel side of NAS Alameda.

GENERAL COMMENTS

The proposed soil and groundwater background data sets for Naval Air Station Alameda (NASA) have not yet been finalized. HERD, therefore, performed all evaluations of ecological hazard using the total ecological hazard estimates supplied rather than incremental ecological hazard estimates.

In the current condition, closure activities at IWTP 25, coupled with the indoor location of IWTP 25 and the limited size of the IWTP 25 facility, appear to have produced conditions where the IWTP soils pose insignificant ecological hazard for terrestrial receptors. Groundwater concentrations, once considered in the light of reasonable dilution factors, do not appear to pose an ecological hazard for aquatic receptors in the Seaplane Lagoon.

This memorandum addresses only ecological hazard. Review of the Human Health Risk Assessment (HHRA) issues were previously presented in a separate memorandum from Dr. Loveriza Sarmiento, HERD Staff Toxicologist.

SPECIFIC COMMENTS

1. HERD checked the generic risk assessment factors and toxicity values and found the following to be numerically accurate and to conform with standard Ecological Risk Assessment (ERA) practices:
    a. The four (4) foot depth of soil samples used to develop the Exposure Point Concentration (EPC) for terrestrial receptors (Appendix K, Section K.2.1.2.1, page K-4);
    b. Use of the maximum soil detected concentration as the preliminary EPC for terrestrial receptors (Appendix K, Section K.2.1.2.1, page K-4);

c. The sources of water comparison criteria for groundwater receptors (Appendix K, Section K.2.1.2.2, page K-4);
d. The sources of Toxicity Reference Values (TRVs) for vertebrate receptors (Appendix K, Section K.2.3.1, page K-10);
e. The range, biological significance and measurement ability for Assessment and Measurement Endpoints (Appendix K, Section K.2.4, page K-13); and,
f. The Site Use Factor (SUF), Bioavailability, Bioconcentration Factor and Bioaccumulation Factor methods (Appendix K, Section K.3.1, page K-17).

This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

2. HERD does not agree that an 80 percent reduction is a 'standard convention' for converting an acute water toxicity criterion to a more conservative criterion when a chronic water toxicity criterion is unavailable or that a 90 percent reduction for an instantaneous criterion is appropriate (Appendix K, Section K.2.1.2.2, page K-5). Some of these recommendations, as cited in the text, are based on a twenty-year old document (EPA, 1986). HERD recommendations for uncertainty factors (UFs) are contained in HERD overall guidance for Ecological Risk Assessments (ERAs) at http://10.39.0.144/AssessingRisk/eco.cfm. However, given the magnitude of the resulting aquatic Hazard Quotients (HQs) and the range of probable dilution factors for the groundwater to Seaplane Lagoon transport pathway, revision of the 'adjusted' acute and instantaneous water criteria is not necessary.

3. A subset of the groundwater ecological screening criteria from all sources (Appendix K, Table K-4) were checked and found to be arithmetically correct. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

4. The plant and soil invertebrate soil screening criteria (Appendix K, Table K-8) were checked and found to be arithmetically correct. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

5. The proposed soil and groundwater background data sets for NASA have not yet been finalized. The most recent background data set discussions occurred on October 18, 2005 between the U.S. Navy, DTSC, the San Francisco Regional Water Quality Control Board (SFRWQCB) and the U.S. EPA. Statistical tests comparing soil concentrations (Appendix K, Section K.2.1.2.1, page K-4 and Table K-2) and groundwater (Appendix K, Section K.2.1.2.2, page K-6 and Table K-5) concentrations to these proposed background data sets are not useful. HERD, therefore, performed all evaluations of ecological hazard using total ecological hazard estimates supplied rather than the incremental ecological hazard estimates.

6. A subset of the vertebrate receptor TRVs were checked for the allometric conversion process based on body weights (Appendix K, Section K.2.3.1, page K-11 and Tables K-9 through K-16) and found to be arithmetically correct. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

7. A subset of the species-specific terrestrial vertebrate exposure parameters (Appendix K, Tables K-20 through K-24) were checked and found to be acceptable for California vertebrate receptors. The regression method used to calculate the Ingestion Rate (IR) utilizes the more recent regression equations (Nagy, 2001) currently recommended by HERD. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

8. A subset of the food item concentration calculations (Appendix K, Section K.3.1, pages K-18 through K-21) and dietary intake calculations were checked by comparison to the derived Hazard Quotients (Appendix K, Table K-24) and found to be arithmetically correct. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.

9. The Hazard Quotient (HQ) calculated with the alternate lead low Toxicity Reference Value for avian receptors adds some range to the avian lead HQs for consideration by the risk manager (Appendix K, Table K-25). Some of the other maximum terrestrial vertebrate Hazard Quotients based on a Lowest Observable Adverse Effect Level (LOAEL) (HQ_{high}) for soil exceed one with the Alameda Song Sparrow HQ_{high}=16.9 for chromium the maximum (Appendix K, Table K-25). An HQ_{high} in excess of one would normally be indicative of potential ecological hazard requiring further evaluation. However, as commonly performed, this SLERA is based on a Site Use Factor (SUF) of 1, which greatly exceeds the probable exposure based just on the size of the IWTP 25 sample area compared to the usual home range of the terrestrial receptors evaluated. In addition, the IWTP was located inside a secondary containment pad (Appendix K, Section K.1, page K-1) mitigating potential releases, and the surrounding industrial area is mostly paved (Appendix K, Section K.2.1.3, page K-7) with habitat limited to landscape plants. All these factors indicate that current terrestrial ecological hazard is less, and probably much less, than indicated by the risk calculations based on total soil concentrations. HERD did not consider the incremental ecological hazard calculations in reaching this conclusion.

10. Groundwater concentrations, for inorganic elements usually of ecological concern, exceed the saltwater screening criteria for copper, mercury, nickel (Appendix K, Section K.4.1.6, pageK-32 and Table K-26). The maximum groundwater concentrations for all three inorganic elements are less than ten times the ecological screening criteria. Groundwater to surface water dilution factors have been modeled at ratios in excess of 5,000 to 1 at several other Navy sites under HERD review. A default dilution factor of 10 to 1 for groundwater to surface water is frequently

applied to screen ecological hazard. HERD agrees that, based on total ecological hazard and likely dilution factors, the groundwater concentrations presented for IWTP 25 do not appear to pose an ecological hazard to receptors in the Seaplane Lagoon (Appendix K, Section K.4.2, page K-34).

CONCLUSIONS

HERD agrees with the conclusion that the Screening Ecological Risk Assessment (SLERA) indicates that Industrial Waste Treatment Plant (IWTP) 25 soils and groundwater pose minimal, if any, significant ecological hazard. This conclusion is based on:

1. The magnitude of any reasonable dilution factor would reduce any total ecological hazard associated with groundwater below an adverse concentration as groundwater dilutes into surface water in the Seaplane Lagoon; and,
2. With the exception of lead using the BTAG TRV, the maximum terrestrial vertebrate Hazard Quotient based on the TRV_{high} (HQ_{high}) for soil (Alameda Song Sparrow HQ_{high} =16.9 for chromium) is based on a Site Use Factor (SUF) of 1. In addition, the IWTP was located inside a secondary containment pad (Appendix K, Section K.1, page K-1) mitigating potential releases, and the surrounding industrial area is mostly paved (Appendix K, Section K.2.1.3, page K-7) with habitat limited to landscape plants. All these factors indicate that current terrestrial ecological hazard is less, and probably much less, than indicated by the risk calculations based on total risk.

REFERENCE

Nagy KA (2001) Food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds. *Nutrition Abstracts and Reviews, Series B* 71, 21R-31R.

HERD Internal Review: Michael Anderson, Ph.D.
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Arnold Schwarzenegger
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MEMORANDUM

TO: Dean Wright, PG
Engineering Geologist
Standardized Permitting and Corrective Action Branch
Hazardous Waste Management Program

FROM: John Steude
Engineering Geologist
Northern California Geological Services Unit
Geology, Permitting, and Corrective Action Branch

CONCUR: Brian Lewis, CHG, CEG Dan Gallagher for Brian Lewis
Senior Engineering Geologist
Northern California Geological Services Unit
Geology, Permitting, and Corrective Action Branch

DATE: October 27, 2005

SUBJECT: Final Closure Report
Industrial Waste Treatment Plant 25
Former Naval Air Station Alameda (Alameda Point)
Alameda, Alameda County, California
PCA 25040/20004-33/6HWMP

DOCUMENTS REVIEWED

"Final Closure Report, Industrial Waste Treatment Plant 25, Hazardous Waste Facility Permit, CA 2170023236, Naval Air Station, Alameda, California," dated September 25, 2005, prepared by Shaw Environmental, Inc. (hereafter referred to as the Final Closure Report).

INTRODUCTION

The Northern California Geological Services Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the document referenced above and has the following comments and recommendations. If you have any questions, please call me at (916) 255-3700 or Brian Lewis at (916) 255-6332.

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FINDINGS

The Final Closure Report of Industrial Waste Treatment Plant 25 (IWTP 25) provides documentation of Resource Conservation and Recovery Act (RCRA) removal action activities at IWTP 25, including the dismantling and disposing of RCRA Part B permitted and non-permitted waste tanks and associated waste conveyance piping. According to the facility hazardous waste permit, the components of IWTP 25 included a paint screen and hopper, two equalization tanks, chrome treatment units, two clarifiers, neutralization units, two bioreactor units, a sludge thickener, two carbon units, total toxic organic reduction units, a sampling well, and a filter press. The specific units are listed in Table 1 of the Final Closure Report. IWTP 25 also included a system of shallow concrete trenches equipped with pumps, in which process overflow liquid was collected and circulated back into the main tank.

As part of the removal action, the following activities were completed pursuant to the "Final Work Plan, RCRA Corrective Actions at IWTPs 25 and 32, Alameda Point, Alameda, California" dated December 8, 2003:

- Removal of all RCRA permitted and non-permitted waste tanks and associated waste conveyance piping at IWTP 25 for recycling or disposal, as appropriate.
- Soil and groundwater confirmation sampling beneath IWTP 25 to assess any potential release of contamination.
- Soil and groundwater confirmation sampling along the buried waste pipeline from Building 25 to the IWTP 25 to assess any potential release of contaminants.
- Concrete chip sampling from the floor trenches of the IWTP 25.
- Restoration of the site and affected areas.

According to the Final Closure Report, all RCRA Part B permitted and non-permitted tanks and units were demolished and transported to appropriate disposal facilities pursuant to achieving a risk-based clean closure for the IWTP 25.

Soil, groundwater, and concrete chip confirmation samples were collected to determine any potential impacts of the IWTP 25 operations on the subsurface media. Soil and groundwater samples were collected from seven (7) floor trench locations of the IWTP, and from five (5) locations adjacent to the buried industrial wastewater pipeline from Building 25 to IWTP 25. Nine (9) locations previously sampled in 1999 were resampled for volatile organic compounds (VOCs) in soil using current methods for soil VOC analyses (i.e., EPA Method 5035).

In summary, two VOC compounds, 2-butanone and carbon disulfide, were detected at trace levels in one soil sample from location, IWTP25-070, at 5 to 6 feet below ground surface (bgs). Various metals, including hexavalent chromium, were detected in all samples.

Hexavalent chromium was not detected in any of the 13 groundwater samples collected at IWTP 25. VOCs were detected in 6 of the 13 groundwater samples. The six groundwater samples had detections of one or more of the following VOCs: tetrachlorethene, 1,2-dichloroethane, chloroethane, chloroform, carbon disulfide, acetone, and 2-butanone ranging in concentrations from 0.3 micrograms per liter (µg/L) to 27.4 µg/L.

Various metals, including mercury, were detected in all soil samples. However, the metals in soil that exceed background are chromium, cobalt, nickel, and vanadium. The metals in groundwater that exceed background are barium, magnesium, manganese, potassium, and sodium. The metals in concrete that exceed background are trivalent chromium and nickel. The ranges of detected levels of metals are summarized below in Table 1.

Table 1
Range of detected levels of metals above background.

Media (units)	Constituent	Minimum	Maximum
Soil (mg/kg)	Chromium	24.0	43.8
	Cobalt	3.7	10.0
	Nickel	19.0	55.9
	Vanadium	17.0	31.3
Concrete (mg/kg)	Chromium	42.6	62.4
	Nickel	51.1	68.0
Groundwater (µg/L)	Barium	118.0	267.0
	Magnesium	15,600.0	181,000.0
	Manganese	146.0	1,110.0
	Potassium	20,300.0	95,600.0
	Sodium	411,000.0	1,800,000.0

All elevated levels of metals in soils, groundwater, and concrete were evaluated in the Human Health Risk Assessment (HHRA). According to the information provided by the facility, the risk assessment results show that these metals do not pose a cancer or non-cancer risk to potential receptors with one exception. The exception is that manganese shows potential to pose a non-cancer risk based on ingestion of groundwater. The groundwater beneath IWTP 25 is not considered to be a drinking water source.

The results of background comparisons, HHRA and a screening-level ecological risk assessment (SLERA) will be used to determine whether or not IWTP 25 can achieve a risk-based clean closure. Final approval of the acceptability of the HHRA, SLERA and the background comparisons of measured levels of contaminants is the responsibility of Human and Ecological Risk Division (HERD) of DTSC.

RECOMMENDATIONS

Providing that HERD approves HHRA and SLERA, the GSU recommends that no further action be taken for closure of IWTP 25.