

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 00-064

SITE CLEANUP REQUIREMENTS FOR:  
UNITED STATES NAVY  
for the property located at the  
DEPARTMENT OF DEFENSE HOUSING FACILITY  
*former* HAMILTON AIR FORCE BASE  
NOVATO,  
MARIN COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location:** The Site is located within the Department of Defense (DoD) Housing Facility (DODHF-Novato), at Hamilton Air Force Base on the eastern edge of the City of Novato, Marin County, California. It includes an approximate 65-acre rectangular area where petroleum was released from leaking underground, fuel storage tanks associated with two former gasoline service stations. As depicted on Attachment A, the rectangular area which defines the Site is bound on the north by the former Hamilton Army Airfield (HAAF) property line, on the south by Main Entrance Road, on the west by the DODHF-Novato property line to State Access Road and projected northward to the former HAAF property line, and on the east by a north-south trending line located approximately 400 feet east of, and parallel to C Street.
2. **Site History:** Originally, the DODHF-Novato property was part of HAAF. HAAF was constructed between 1932 and 1935 and encompassed approximately 927 acres. In 1947, HAAF was transferred to the U.S. Air Force and was renamed Hamilton Air Force Base (HAFB). By 1964, additional housing to the west of the airfield increased the size of HAFB to 2,184-acres. In 1974, the U.S. Air Force deactivated the facility and initiated transfer of excess property; residential housing units were transferred to the Navy in 1975 as DODHF-Novato, and the remaining property was transferred to various federal agencies.

From the mid-1970s through the early 1990s, the Navy operated two service stations at the DODHF-Novato. The first service station, Building 957, contained a 12,000-gallon underground storage tank (UST) designated UST-957 (see Attachment A). In March 1992, Building 957 UST and associated piping were removed. Analytical results for soil and groundwater samples collected from the excavation detected significant concentrations of

total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene, and xylene compounds.

The second service station, called the Naval Exchange Service Station (NEX), operated from the mid-1970s through the mid-1990s. The NEX was located in Building 970, at the northwest corner of "Main Entrance" Road and "C" Street (see Attachment A). In the early 1990s, when the NEX was closed, three single-walled, steel 10,000-gallon USTs, which formerly contained unleaded gasoline, and one 1,000-gallon waste oil UST were removed. The three gasoline USTs were located approximately 70 feet south of Building 970 and were designated UST-970-1, UST-970-2, and UST-970-3.

During 1995 and 1996, UST-970-1, UST-970-2, UST-970-3, and 80 feet of piping leading from the tanks to the pump islands were removed. Although UST-970-1 and UST-970-2 were observed to be in good condition at the time of their removal, UST-970-3 contained a hole at the fill end of the tank, groundwater was encountered at two feet below ground surface (bgs), and hydrocarbon contamination was observed on the excavation sidewalls and tank pit groundwater. Analytical results for soil and groundwater samples collected from the excavation detected significant concentrations of total petroleum hydrocarbons (TPH) as gasoline, diesel, motor oil, jet fuel, benzene, toluene, ethylbenzene, xylenes and methyl tertiary butyl ether (MTBE).

MTBE-impacted groundwater originating in the vicinity of the former USTs flows northward, onto the adjacent HAAF parcel, portions of which are currently owned by the City of Novato and Shea Homes. MTBE-impacted groundwater seasonally discharges to Pacheco Creek (See Attachment A).

3. **Named Dischargers:** The United States Navy is named as the discharger because it owns the property and owned the property during the time of the activity that resulted in the discharge. The Navy had knowledge of the discharge or the activities that caused the discharge, and had the legal ability to prevent the discharge. The Army-drafted Statement of Condition for Ammo Hill and 800-B Parcels, Phase II GSA Sale Property, Hamilton Army Airfield, Novato, California, states "Since the United States Navy is responsible for the source of the contamination, they are also responsible for any necessary investigative, monitoring, assessment and/or remediation action required to reduce the MTBE concentration levels and the spread of the plume."

Current plans are for the Navy to retain ownership of a portion of the Site that contains the former NEX. The remainder of the property is expected to be transferred to the Novato Public Finance Authority (NPFA), the Novato Unified School District (NUSD), and/or a privately owned development company or some other grantee, at some unspecified future date. If the property is transferred to the NPFA, or to any other party or parties, anyone acquiring the property may be added to this Order.

4. **Regulatory Status:** This site is currently not subject to Board order.

5. **Site Hydrogeology:** Groundwater at the Site occurs within unconfined, unconsolidated alluvial materials and generally flows northward. In the area of the Site, the unconfined alluvial aquifer rests on top of eroded and fractured basement rock. In the past two years, depth to groundwater in the immediate vicinity of former UST-970-3 has ranged between 7 feet and 11 feet below ground surface. As reported in the April 21, 1999 GSA Phase II Sale Area Monitoring Report for the Hamilton Army Airfield, the depth to groundwater northward and downgradient of the Site, shallows and seasonally discharges to Pacheco Creek and to the ground surface along the southern end of Ammo Hill (see Attachment A).

Pacheco Creek is the primary surface water drainage feature downgradient of the Site and empties into Ignacio Reservoir, ultimately flowing to San Pablo Bay via Novato Creek.

Hydraulic conductivity was measured using slug and aquifer pumping tests on several wells in the NEX area. Hydraulic conductivities measured from slug tests ranged between 1.3 and 22.0 feet per day, and those measured using pumping tests ranged between 3.1 feet to 11.7 feet per day, respectively.

Site groundwater contains an average of 624 mg/L total dissolved solids (TDS).

6. **Remedial Investigation:** Remedial Investigation (RI) at the Site, performed to assess the nature and extent of soil and groundwater contamination, can be broadly subdivided into four general phases of RI activity. These include:
- a. The NEX USTs and piping removal and characterization.
  - b. The Building 957 UST and piping removal and characterization
  - c. The NEX hydraulic lift investigation.
  - d. MTBE plume delineation.

Each phase of RI activity is summarized below.

- a. NEX USTs and Piping Removal and Characterization:  
UST 970-3 and product piping were removed by the Navy in January 1995. Visible hydrocarbon contamination of soil and water were observed during the excavation and a hole at the fill-end of UST970-3 was noted in the field. Groundwater was removed from the excavation and the excavation was allowed to recharge. Analytic results of this second tank pit water sample reported TPH-G at 21,000  $\mu\text{g/L}$ , benzene at 640  $\mu\text{g/L}$ , toluene at 1,200  $\mu\text{g/L}$ , and xylenes at 2,600  $\mu\text{g/L}$ . On February 22 and 23, 1995, the gasoline tank pit was over-excavated by three feet on each of the north, west, and east sidewalls. On March 27, 1995, a third set of soil samples were collected from the excavation. Constituents reported in the tank pit excavation included TPH-G up to 520 milligrams per kilogram (mg/kg), and minor detections of benzene, toluene, ethylbenzene, and xylenes. Approximately 0.5 foot of separate phase hydrocarbons (free product) were reported in monitoring well 970-MW-5 in 1996.

UST 970-1, UST 970-2, and the product piping leading from tanks to pump islands were removed in July 1996. Five soil samples were collected from the sidewalls of the tank pit excavation and three soil samples were collected beneath the piping (12 to 16 inches below ground surface) at each pump island. Soil samples contained TPH-G at 1,200 to 6,800 mg/kg, benzene at 8.8 to 61 mg/kg, toluene at 340 mg/kg, ethylbenzene at 13 to 67 mg/kg, xylenes up to 310 mg/kg, and MTBE up to 22 mg/kg. Ground water from within the tank pit excavation reportedly contained 170,000  $\mu\text{g/L}$  MTBE.

b. Building 957 UST and Piping Removal and Characterization:

In March 1992, the Building 957 12,000 gallon UST and underground piping for UST 957 were removed. Confirmation soil samples collected from the tank pit reported an unidentified hydrocarbon as TPH between 150 to 220 mg/kg, 0.36 mg/kg benzene, 0.56 mg/kg toluene, 1 mg/kg ethylbenzene, and 3.8 mg/kg xylenes. Soil samples collected from the piping trenches contained unidentified TPH up to 1,200 mg/kg. Analysis of tank pit groundwater showed TPH-G at 60,000  $\mu\text{g/L}$  and concentrations up to 4,400  $\mu\text{g/L}$  for the combined benzene, toluene, xylene, and ethylbenzene constituents. In 1994 and early 1995, an RI using a Geoprobe sampler indicated the existence of free product in areas adjacent to and downgradient of the UST-957.

c. NEX Hydraulic Lift Investigation:

In 1995, a limited soil investigation was conducted in the vicinity of the NEX hydraulic lifts to evaluate the extent of a hydraulic fluid release from the northernmost of the two hydraulic lifts. Two soil samples were collected from depths of 4.0-5.0 and from 9.0-10.0 feet bgs and analyzed for TPH. Groundwater in the vicinity of the lifts was not analyzed at this time. The soil samples collected from 4.0-5.0 feet bgs reportedly contained 15,000 mg/kg TPH as motor oil (TPH-MO). The soil sample collected from 9.0-10.0 feet bgs at the northernmost hydraulic lift reportedly contained 12 mg/kg TPH-MO.

In 1998, a second GeoProbe investigation was conducted 1 foot and 5 feet downgradient (north) of the northernmost hydraulic lift. Groundwater samples were collected from these two pushes as well as from two pushes located approximate 25 feet and 50 feet downgradient of the hydraulic lift. TPH-MO was reported at 18,000 mg/kg in a soil sample collected at 4.5 to 5.5 feet bgs in the push hole located closest to the northernmost hydraulic lift. Naphthalene, phenanthrene, and pyrene were also detected in this sample at 10 mg/kg, 1.3 mg/kg, and 1.9 mg/kg, respectively. Naphthalene was reported at a concentration of 4.2 mg/kg at 4.5 to 5.5 feet bgs in the second push, located further downgradient of the lift. The groundwater samples collected from the Geoprobe pushes located approximately 25 feet and 50 feet downgradient of the northernmost hydraulic lift reportedly contained TPH-MO at 5.6 mg/L and 5.4 mg/L, respectively. The sampling results indicate that some volume of TPH-impacted soil remains adjacent to the hydraulic lifts.

In March 2000, the DoN prepared a work plan for removal of the hydraulic lifts and oil water separators from Building 970. DoN reports that removal activities began on April 17, 2000. During excavation of the hydraulic lifts and oil water separator, unexpected subsurface piping and features (i.e., an additional oil/water separator) were encountered resulting in the expansion of the field excavation activities. Preliminary findings indicate that TPH-impacted soils left in place after completion of the excavation are limited both in horizontal and vertical extent and are primarily associated with a gravelly layer along the footer of the building. DoN reports that they are currently assessing strategies for dealing with the TPH-impacted footing area. DoN plans to prepare a report documenting the activities and observations noted during the removal of the hydraulic lifts and oil water separators and associated lines.

d. MTBE Plume Delineation:

Three investigations were performed in 1998 to delineate the northern extent of the MTBE plume. Current Site characterization data suggest that the MTBE plume extends approximately 2,800 feet north, downgradient of the NEX site, and the plume is approximately 600 feet wide (see Attachment A). November 1999 groundwater data for the Site shows that MTBE concentrations in groundwater in the vicinity of the UST-970 source area vary from about 10,000  $\mu\text{g/L}$  to 82,000  $\mu\text{g/L}$  in a plume that extends a distance of approximately 1,200 feet downgradient of the UST-970 source area and onto the former HAAF, portions of which are currently owned by the City of Novato and Shea Homes. The Shea Homes-owned portion of the former HAAF is currently undergoing a phased redevelopment into single-family residences.

Predictive numerical modeling was performed by the Navy to simulate the fate and transport of the MTBE groundwater plume at the Site. The model and input parameters were presented to the Regional Board in the Navy's January 2000 "Draft Final Corrective Action Plan for the Former Underground Storage Tank Site 957/970, Department of Defense Housing Facility, Novato, California." Predictive numerical modeling of the MTBE plume indicates that with a decay rate of zero, the MTBE plume will move through the aquifer as a slug with no reduction in MTBE concentrations using representative aquifer parameters. The maximum MTBE concentration is modeled to occur at about 2,230 feet downgradient after 20 years and at about 3,937 feet downgradient after 40 years from the UST-970 source.

7. **Interim Remedial Measures:** Between June 1998 and early October 1999, air-sparging and soil vapor extraction (SVE) were implemented in areas where the highest hydrocarbon concentrations were detected in groundwater. Significant mass removal was achieved through the operation of the air-sparging/SVE system. An estimated 23,000 pounds of gasoline were removed by the system over approximately one (1) year of operation. During the course of system operation, it was determined that additional extraction wells would be required to achieve significant additional hydrocarbon removal. Therefore, the Navy discontinued interim remedial measures at the Site in early October 1999. DoN reports that the cumulative cost incurred for the removal of the 23,000 pounds of hydrocarbons is estimated at \$400,000.

8. **Adjacent Sites:** MTBE-impacted ground water extends approximately 2,800 feet downgradient of the former UST970 tank complex and impinges on the western boundary of the Hamilton Army Landfill 26 (LF-26). While there are no current plans to do so, the potential exists for LF-26 to pump groundwater in the future and thereby capture the MTBE plume, which originates upgradient of LF-26.
9. **Basin Plan:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The potential beneficial uses of groundwater underlying and adjacent to the site include:

- a. Municipal and domestic water supply.
- b. Industrial process water supply.
- c. Industrial service water supply.
- d. Agricultural water supply.
- e. Freshwater replenishment to surface waters.

At present, there is no known use of groundwater underlying the Site for the above purposes.

Pacheco Creek is an intermittent creek that feeds into Novato Creek. The existing and potential beneficial uses of Pacheco Creek and Novato Creek include:

- a. Cold freshwater habitat.
- b. Fish migration.
- c. Municipal and domestic supply.
- d. Preservation of rare and endangered species.
- e. Water contact recreation.
- f. Water non-contact recreation.
- g. Fish spawning.
- h. Warm freshwater habitat.
- i. Wildlife habitat.

10. **Other Regional Board Policies:** Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally occurring high contaminant levels.

11. **State Water Board Policies:** State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

12. **Preliminary Cleanup Goals:** The discharger will need to make assumptions about future cleanup standards for soil and groundwater, in order to determine the necessary extent of remedial investigation, interim remedial actions, and the draft cleanup plan. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals should be used for these purposes:
  - a. **Groundwater:** Applicable water quality objectives (e.g. maximum contaminant levels, or MCLs) or, in the absence of a chemical-specific objective, risk-based levels (e.g. drinking water equivalent levels).
  - b. **Soil:** 1 mg/kg total volatile organic compounds (VOCs), 10 mg/kg total semi-volatile organic compounds (SVOCs), and background concentrations of metals.
13. **Basis for 13304 Order:** The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.
14. **Federal Waiver of Sovereign Immunity:** The Federal government has waived its sovereign immunity for this Order under Title 42, Section 6991f, of the United States Code.
15. **Cost Recovery:** Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

16. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
17. **Notification:** The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.
18. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

**IT IS HEREBY ORDERED**, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

**A. PROHIBITIONS**

1. **DISCHARGE OF WASTE:** The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. **POLLUTION MIGRATION:** Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. **POLLUTION MIGRATION CAUSED BY INVESTIGATION AND REMEDIATION:** Activities associated with the subsurface investigation and cleanup, which will cause significant adverse migration of wastes or hazardous substances, are prohibited.

**B. TASKS**

1. **WORKPLAN FOR REMEDIAL INVESTIGATION**

COMPLIANCE DATE: September 1, 2000

Submit a workplan acceptable to the Executive Officer to define the vertical and horizontal extent of soil and groundwater contamination at the Site, specifically in the vicinity of the NEX UST970-complex and NEX hydraulic lifts. The workplan at a minimum shall include:

- a. Plans for investigating soil and groundwater in the vicinity of the former UST970 complex.
- b. An evaluation of the impacts and potential impacts to groundwater in the fractured bedrock directly beneath the areas of highest hydrocarbon detections.
- c. A determination of the volumes of unsaturated and saturated soil containing significant residual TPH, benzene, toluene, ethylbenzene, xylenes, and MTBE in the vicinity of Site "hot-spots" including the former UST970 complex and ancillary piping and pump islands, the former UST957 area, the former NEX waste oil tank, NEX hydraulic lifts, etc. Volume estimates will be based on isoconcentration maps constructed from all soil chemical data collected throughout the investigative history of the Site. Isoconcentration maps will be constructed at 2 foot intervals, beginning at the ground surface through 12 feet below ground surface.
- d. A determination of the horizontal and vertical extent of the separate phase hydrocarbons detected in the vicinity of monitoring well 970-MW-5.
- e. An evaluation of the horizontal extent of the separate phase hydrocarbons detected in the vicinity of UST957 during the 1994-1995 Geoprobe sampling event.
- f. A determination of the adequacy of the screen intervals for Site monitoring wells given documented seasonal variation in ground water elevation and nature of Site pollutants.
- g. A plan to install a series of monitoring wells, properly located along the southern margin of the Site, parallel to the State Access Road and cross-gradient to the documented groundwater flow direction, designed to monitor the concentration of groundwater pollutants leaving the Site, so that any migration of the Site plume can be documented.
- h. A plan to install a series of monitoring wells located downgradient of the former Site UST locations, cross-gradient to the documented groundwater flow direction, designed to monitor the movement of the existing groundwater plume and gauge plume stability.
- i. A monitoring program for the above specified monitoring wells, which shall specify frequency of sampling, the proposed chemical analyses for ground water samples collected, and reporting schedule.

## 2. COMPLETION OF REMEDIAL INVESTIGATION

COMPLIANCE DATE:

November 17, 2000

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 1 workplan. The technical report shall define the horizontal and vertical extent of pollution in soil and groundwater at the Site.

**3. INTERIM REMEDIAL ACTION WORKPLAN FOR SOIL**

**COMPLIANCE DATE:** January 5, 2001

Submit a workplan acceptable to the Executive Officer evaluating interim remedial action alternatives for hydrocarbon-impacted soil of significant concentration, identified in Task No. 1 and in the vicinity of the former Site USTs, ancillary piping, and hydraulic lifts, as appropriate. The work plan should:

- a. Recommend one or more alternatives for implementation.
- b. Provide a time schedule for completing each task in the workplan that includes notifying the Regional Board 3-business days prior to the start date of any interim remedial actions.
- c. Include a report on how the Navy will require and assure that onsite workers (i.e., construction workers and maintenance personnel) work under a Health and Safety Plan and are adequately protected from exposure to contaminated soil and groundwater during Site remedial actions.

**4. COMPLETION OF INTERIM REMEDIAL ACTION FOR SOIL**

**COMPLIANCE DATE:** Within 21-days of the date for completion of each task in the accepted time schedule (B.4.c.) above.

Complete the work and submit a technical report acceptable to the Executive Officer documenting completion of each of the tasks identified in the Task B.4. workplan.

**5. MONITORING WELL PROTECTION PLAN**

**COMPLIANCE DATE:** September 15, 2000

Submit a workplan acceptable to the Executive Officer that presents a monitoring well protection and management strategy/plan given the nature and magnitude of proposed site redevelopment/construction activities. The workplan should include plans for GIS-location of wells and include a provision for notifying the RWQCB 60-days prior to any well modification.

The workplan shall also include a plan that is acceptable to the Executive Officer, for replacing monitoring wells destroyed in 1999 due to HAAF site redevelopment activities. The workplan shall specify investigation methods for

finding the locations of the destroyed wells and present a time schedule for the investigation and monitoring well installations.

6. **PROPOSED FINAL CORRECTIVE ACTION PLAN FOR GROUNDWATER**

COMPLIANCE DATE: February 28, 2001

Submit a workplan acceptable to the Executive Officer that includes:

- a. A feasibility study (FS) to:
  1. Stabilize and contain the higher concentration MTBE groundwater plume on the currently Navy-owned portion of the Site.
  2. Remediate the highest concentrations of soil pollution detected in Task B.1.
  3. Reduce and remediate the concentrations of MTBE in Site groundwater.
  4. Reduce and remediate the concentrations of benzene in Site groundwater which exceed applicable risk based screening levels (RBSLs).
  
- b. The FS shall contain:
  1. The results of all Site remedial investigations.
  2. An evaluation of interim remedial actions.
  3. An analysis and comparison of alternative final remedial actions.
  4. Recommendation of final remedial actions and cleanup standards.
  5. If any of the recommended final cleanup standards are less than background levels, the proposed standards must achieve the best water quality reasonably possible, be consistent with the maximum benefit to the people of the state, not unreasonably affect beneficial uses, and may not be set below those set by the Basin Plan and applicable Policies. Further, if the recommended final cleanup standards are less than background levels, provide evidence and analysis showing that it is a) technologically or economically infeasible to achieve background levels, and b) that the constituent will not pose a substantial present or potential hazard to human health or the environment for the duration of the exceedence of background levels.
  6. Time schedule for implementation of the recommended alternative.

Item B.6.b.3 should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action. Items B.6.b.1 through B.6.b.3 should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution

Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"), and all other applicable State Board Policies.

**7. INTERIM SITE CONTROLS ON EXCAVATION OF POLLUTED SITE SOILS AND DISCHARGE OF POLLUTED SITE GROUNDWATER**

COMPLIANCE DATE: September 29, 2000

After consulting with interested parties, prepare and submit a report, acceptable to the Executive Officer, of interim controls to be placed on the excavation of polluted Site soils and extraction and discharge of polluted Site groundwater in order to protect human health and the environment prior to the completion of a final remedial action at the Site pursuant to Task 6. The report shall include:

1. Requirements to ensure that any excavated, polluted Site soil will be handled and disposed of properly (e.g., bioremediate polluted soil before backfilling Site excavations, or backfill with clean backfill, and polluted excavated Site soils will be tested and disposed of at a permitted disposal facility);
2. Requirements to ensure that the discharge of polluted Site groundwater will be handled and disposed of properly (e.g., tested and hauled to a permitted disposal facility, or treated and discharged under an NPDES permit);
3. Requirements to ensure that on-Site workers who are involved in activities that can expose them to polluted Site soils and/or groundwater be notified of the location and depth to polluted Site soils and groundwater, and be informed that a Health and Safety Plan is required before the activity begins;
4. Requirements to ensure that the portion of the Site which is currently surrounded by chain-link fence and locked gates be kept secure, and the remainder of the polluted soil and groundwater impacted Site, which is currently not secured by fence and gate, be surveyed (policed) periodically to verify that the controls identified in the report required by the Task are complied with;
5. Requirements to ensure that a person will be designated, who will serve as the point of contact for any entity wanting to excavate polluted Site soil and who will distribute copies of the controls identified in the report required by this Task and maps of the Site pollution to any inquiring entity and all agencies, such as water, electric and gas

agencies, that the Navy has reason to believe may be excavating polluted soil at the Site; and,

6. Requirements to ensure that any parties negotiating for the transfer of any Site parcel containing polluted soil and groundwater be made aware of these interim Site controls and informed that these controls will be continued by Deed Restriction or equivalent alternative type of institutional control, acceptable to the Executive Officer, if any Site parcel containing polluted soil and groundwater is transferred prior to completion of the a final remedial action at the Site pursuant to Task 6.

The above report and controls are intended to serve as interim measures to ensure protection of human health and the environment pending completion of a final remedial action and are not intended to be construed as a substitute for the Navy's compliance with any requirements in Task 6.

## 8. GROUNDWATER MONITORING PLAN

COMPLIANCE DATE: September 15, 2000

Submit a Groundwater Monitoring Plan, acceptable to the Executive Officer, that describes the procedures for conducting quarterly groundwater elevation measurements and quarterly sampling of existing and proposed wells located on Site 957/970 and the adjoining Army property (HAAF) to the north. The Groundwater Monitoring Plan shall include provisions for measuring surface water elevations and collecting and analyzing surface water samples from Pacheco Creek. The Groundwater Monitoring Plan shall describe methods, procedures, and materials to be used in the performance of the groundwater sample collection and analysis. The collection methods, preservation methods, and holding times for all samples will be in accordance with U.S. Environmental Protection Agency approved procedures. A California State certified analytical laboratory will conduct all analyses.

## 9. SITE STATUS REPORTS

COMPLIANCE DATE: Quarterly reports beginning  
November 1, 2000

Submit Quarterly Site Status Reports, acceptable to the Executive Officer that present the results of each quarterly groundwater/surface water monitoring event. The reports shall include all data gathered and observations made during each sampling event, a summary of findings, potentiometric maps, and tabulated groundwater level measurements and groundwater analytical reports for all pollutants analyzed. The reports shall be signed under penalty of perjury.

Additionally, the Quarterly Site Status Report shall include a discussion of the work completed in that quarter towards compliance with this Order, and the work planned for the next quarter.

10. **DELAYED COMPLIANCE:** If the discharger may be delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer. If, for any reason, the discharger is unable to perform any activity or submit any document within the time required under this Order, the discharger shall make a written request for a specified extension of time. The extension request shall include a justification for the delay, and shall be submitted in advance of the date on which the activity is to be performed or the document is due.
11. **COSTS:** The discharger will pay the full costs incurred by the Regional Board in monitoring and enforcing cleanup at this site and for oversight of this order.

### C. PROVISIONS

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall be conducted in a manner such that would not create a nuisance as defined in California Water Code Section 13050(m).
2. **Good Operation and Maintenance (O&M):** The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:
  - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
  - b. Access to copy any records required to be kept under the requirements of this Order.
  - c. Inspection of any monitoring or remediation facilities installed in response to this Order.
  - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

4. **Lab Qualifications:** State-certified laboratories, or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed, shall analyze all samples. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).
5. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:
  - a. City of Novato, Department of Community Development, 900 Sherman Avenue, Novato, California 94945
  - b. Cal/EPA-Department of Toxic Substances Control, 19151 Croydon Way, Suite 3, Office of Military Facilities, Sacramento, California 95827.
  - c. U.S. Environmental Protection Agency, Region 9.
  - d. California Regional Water Quality Control Board, Region 2.

The Executive Officer may modify this distribution list as needed.

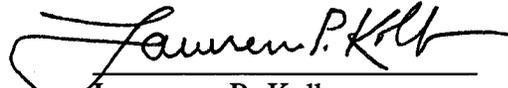
6. **Reporting of Changed Owner or Operator:** The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.
7. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 AM to 5:00 PM).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

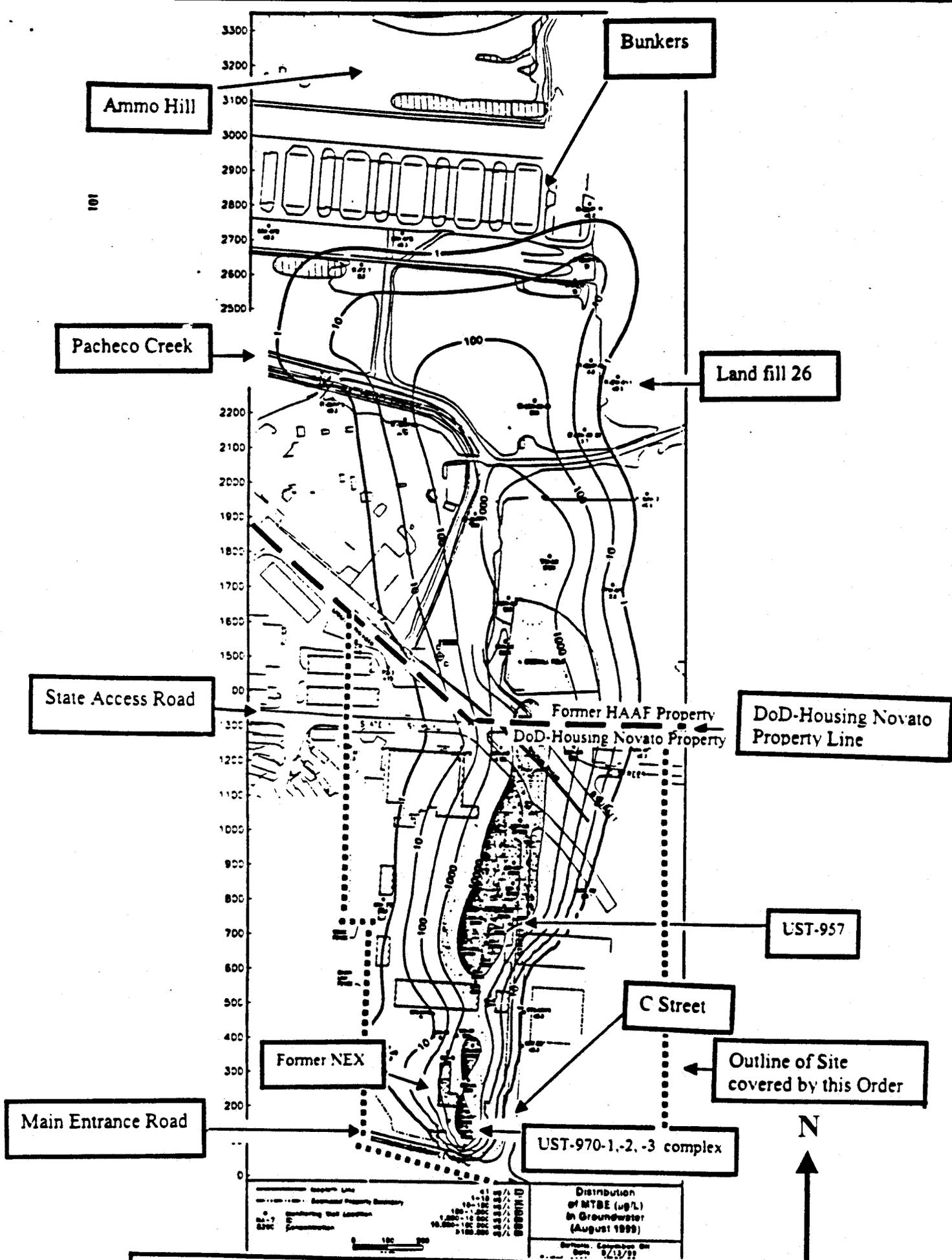
8. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review, the Executive Officer may recommend that the Board revise these requirements.

I, Lawrence P. Kolb, Acting Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 19, 2000.

  
Lawrence P. Kolb  
Acting Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT  
YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO:  
IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE  
SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR  
INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY  
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Attachment A: DoD-Housing Facility and Vicinity Site Map, Marin County, Novato,  
California



Attachment A: DoD-Housing Facility and Vicinity Site Location Map, Marin County, Novato California