

California Regional Water Quality Control Board
Santa Ana Region

Cleanup and Abatement Order No. R8-2003-108
for
Northrop Grumman Corporation, Y-12 Facility
310 East Orangethorpe Avenue
Anaheim, Orange County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. The Northrop Grumman Corporation (Northrop) formerly operated a facility (referred to as the Y-12 Facility) at 301 East Orangethorpe Avenue in the City of Anaheim. The site is bounded to the east by a residential trailer park, to the west by numerous small businesses, to the south by Orangethorpe Avenue, and to the north by the Fullerton Creek Channel. This rectangular-shaped, 9.6-acre parcel included an approximately 100,000 square foot building located along its southern boundary with Orangethorpe Avenue. The facility manufactured aircraft parts from 1962 to 1994. The site was sold in 1996 and is now utilized as an automotive aftermarket products packing and storage facility.
2. Northrop's activities at this facility included vapor degreasing, metal quenching, painting and chemical treatment of manufactured aircraft parts. Wet process chemicals were primarily used in paint booths and stored at the facility. These paints contained cadmium and chromium in significant concentrations and quantities. Caustics (acids and bases), organic solvents, paints and soaps were also used and stored at the facility.
3. In 1995, Northrop submitted a report that described soil investigation and remediation activities conducted at the site between October 1994 and February 1995. Soil containing petroleum compounds, metals and volatile organic compounds (VOCs) was remediated by excavation in 1994 and 1995. In 1995, Regional Board staff issued a "no further action" letter for the soil remediation performed in specific areas of the Y-12 Facility.
4. Since 1995, Regional Board staff has provided regulatory oversight of several phases of groundwater investigations conducted by Northrop. Between 1996 and 2001, Northrop installed 15 groundwater monitoring wells at and downgradient of the facility. As a result of Northrop's reluctance to install some of the downgradient monitoring wells, the Executive Officer issued Investigation Orders pursuant to Section 13267 of the California Water Code on two occasions, August 16, 2000 and April 21, 2001, requiring that the monitoring wells be installed.
5. Groundwater at and downgradient of the site generally occurs at a depth of about 100 to 110 feet below ground surface (bgs), and flows to the west-southwest. Nine of the wells monitor groundwater at this depth. Most of the other wells monitor the

shallower groundwater at depths of about 80 to 90 feet bgs, and are occasionally dry.

6. The primary VOC found in the groundwater is trichloroethylene (TCE), although perchloroethylene (PCE), 1,1-dichloroethylene (DCE) and 1,1,1-trichloroethane (TCA) are also present. The following table lists the maximum concentrations of VOCs found in groundwater at the site since 1996:

COMPOUNDS	ppb *	MAXIMUM** CONTAMINANT LEVEL (MCL) – ppb
PCE	400	5
TCE	1700	5
1,1-DCE	537	6
1,1,1-TCA	192	200

* parts per billion

** Primary MCLs for drinking water are established by the Department of Health Services (DHS) and can be found in Title 22 California Code of Regulations, Section 64444 (organic compounds).

7. Northrop has installed monitoring wells extending approximately 700 feet downgradient of the site. Concentrations of VOCs in these wells are significantly lower than the concentrations of VOCs that have been present in monitoring wells at the site. However, these monitoring wells are not located directly downgradient of the suspected source area at the site, and they are not directly downgradient of the monitoring wells at the site that have exhibited the highest concentrations of VOCs. Therefore, additional downgradient monitoring wells are necessary to sufficiently characterize the extent of VOC migration from the site.
8. Three of the on-site monitoring wells were installed along the upgradient boundary of the site to determine if VOCs were migrating onto the site from an off-site source. TCE has consistently been detected in these on-site, upgradient wells. Therefore, it is likely that TCE is migrating onto the site from an off-site source. However, the concentrations of TCE in these on-site, upgradient wells are significantly less than the concentrations of TCE that have been detected in the on-site wells located directly downgradient of the suspected source area, and significantly less than the concentrations of TCE that have been detected in groundwater samples obtained from soil borings at the site that were drilled at and downgradient of the suspected source area. Also, although PCE and 1,1-DCE are intermittently detected in the on-site monitoring wells along the upgradient boundary at concentrations generally less than 5 ppb, PCE and 1,1-DCE are consistently detected in the other on-site wells and downgradient off-site wells at significantly higher concentrations. Therefore, although it is likely that VOCs at relatively low concentrations are migrating onto the site, the significantly higher

concentrations of VOCs at and downgradient of the site indicate that Northrop has discharged waste containing VOCs that has impacted groundwater.

9. The Orange County Water District (OCWD) conducted a groundwater study to investigate the magnitude and extent of VOCs in the Anaheim-Fullerton area of the Santa Ana Forebay Groundwater Subbasin. As a result of their study, the OCWD identified an area of groundwater containing VOCs that encompasses several square miles. The VOCs are present primarily in the shallowest water-bearing zone (less than 250 feet bgs). These VOCs originated both from various known and some unidentified industrial sources in the area. The VOCs are also present to a lesser extent in the deeper aquifer, and have already impacted several municipal water supply wells. The VOCs in the shallow water-bearing zone are continuing to migrate toward the deeper aquifer and the municipal water supply wells that extract groundwater from the deeper aquifer.
10. The OCWD has evaluated the installation of four or more extraction wells to control the migration of VOCs and to remove VOCs from this large impacted area of the Santa Ana Forebay Groundwater Subbasin. One of the extraction wells associated with OCWD's proposed Forebay VOC Groundwater Cleanup Project is proposed to be located immediately downgradient of the Y-12 Facility. If installed, this well is expected to clean up the VOCs in the groundwater that were discharged by Northrop. Since 2001, Northrop and the OCWD have attempted to negotiate a proposed settlement of the cost to remediate Northrop's impact to groundwater. However, the OCWD and Northrop have not been able to agree on an appropriate settlement.
11. In a letter dated August 21, 2003, the OCWD notified Regional Board staff that the OCWD is in the feasibility study stage of the project and that OCWD's Board of Directors has not made a final determination to construct any of the extraction wells, or whether to construct the project, as a whole. The letter also stated that the Regional Board should not consider OCWD's feasibility study as an indicator that OCWD will clean up VOCs discharged by another party.
12. Northrop has discharged waste into waters of the State, specifically the Santa Ana Forebay Groundwater Subbasin, and is causing or permitting a condition of pollution or nuisance. Therefore, it is appropriate to order Northrop to cleanup and abate the effects of the waste discharge.
13. The beneficial uses of the Santa Ana Forebay Groundwater Subbasin include:
 - a. Municipal and domestic supply,
 - b. Agricultural supply,
 - c. Industrial service supply, and
 - d. Industrial process supply.

14. California Water Code Section 13304 allows the Regional Board to recover reasonable expenses from responsible parties for overseeing cleanup and abatement activities. It is the Regional Board's intent to recover such costs for regulatory oversight work conducted in accordance with this order.
15. This enforcement action is being taken for the protection of the environment and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et.seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.
16. The issuance of this Cleanup and Abatement Order in no way limits the authority of this Regional Board to institute additional enforcement actions or to require additional investigation and cleanup at the facility consistent with the California Water Code. This Order may be revised by the Executive Officer as additional information becomes available.

IT IS HEREBY ORDERED that, pursuant to Section 13304, Division 7, of the California Water Code, Northrop shall:


1. By January 5, 2004, submit a work plan and time schedule for the expeditious installation of a sufficient number of groundwater monitoring wells to adequately characterize the extent of VOCs in groundwater that have resulted from discharges at Northrop's Y-12 Facility. These monitoring wells shall be installed at locations that intercept groundwater that is passing, or has passed, between downgradient monitoring wells NMW-9A and NMW-8, such that it can reasonably be expected that groundwater that has passed beneath the suspected on-site source area, and is directly downgradient of on-site monitoring well NMW-2A, can be sampled. The work plan and time schedule shall be subject to the approval of the Executive Officer. The time schedule shall provide for the installation of the monitoring wells within 60 days of the Executive Officer's approval of the work plan.
2. Implement the work plan noted in 1., above, as approved by the Executive Officer.
3. Submit and implement any additional work plans that the Executive Officer deems necessary to sufficiently characterize the nature and extent of VOCs in groundwater that have resulted from discharges at Northrop's Y-12 Facility.
4. By February 9, 2004, submit a conceptual feasibility study of alternative groundwater remediation scenarios that potentially could be implemented after sufficient characterization of VOCs in groundwater that have resulted from discharges at Northrop's Y-12 Facility is completed.
5. Within 90 days of being notified by the Executive Officer that sufficient characterization of VOCs in groundwater has been accomplished in order to initiate

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groundwater remediation, submit a groundwater remediation plan and a time schedule to cleanup VOCs in groundwater that have resulted from discharges at Northrop's Y-12 Facility. The remediation plan and time schedule will be subject to the approval of the Executive Officer.

6. Implement the groundwater remediation plan noted in 5., above, as approved by the Executive Officer.
7. Submit and implement any additional remedial action plans that the Executive Officer deems necessary to cleanup or abate the effects of the wastes discharged at the Y-12 Facility.

Failure to comply with the terms and conditions of this order may result in imposition of civil liabilities, either administratively by the Regional Board or judicially by the Superior Court in accordance with Section 13350 of the California Water Code, and/or referral to the Attorney General for such action as may be deemed appropriate.


Gerard J. Thibeault
Executive Officer

November 14, 2003



California Regional Water Quality Control Board

Santa Ana Region



Winston H. Hickox
Secretary for
Environmental
Protection

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Gray Davis
Governor

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov/rwqcb8.

November 14, 2003

Mr. Timothy Haltmeyer, Manager
Environment, Health, Safety and Medical
Northrop Grumman Corporation
One Hornet Way, PA12/W9
El Segundo, CA 90245

CLEANUP AND ABATEMENT ORDER No. R8-2003-108, FORMER NORTHROP GRUMMAN CORPORATION Y-12 FACILITY, 301 ORANGETHORPE AVENUE, ANAHEIM, CA

Dear Mr. Haltmeyer:

Enclosed is Cleanup and Abatement Order No. R8-2003-108 for the above-referenced site. This order requires Northrop to submit a work plan and time schedule to further characterize the extent of VOCs in groundwater, submit a conceptual feasibility study of groundwater remediation alternatives, and submit and implement a groundwater remediation plan.

If you have any questions, please contact Ann Sturdivant, Chief of our SLIC/DoD Section, at (909) 782-4904, or Mr. Robert L. Holub, Supervising Engineer at (909) 782-3298.

Sincerely,

Gerard J. Thibeault
Executive Officer

Enclosure: Cleanup and Abatement Order No. R8-2003-108

cc: Malissa H. McKeith, Loeb & Loeb
Virginia Grebbien, OCWD
Jorge Leon, SWRCB-OCC

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California Environmental Protection Agency

