



Winston H. Hickox  
Agency Secretary  
California Environmental  
Protection Agency

## Department of Toxic Substances Control

Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630

M60050.000281  
MCAS EL TORO  
SSIC #5090.3



Gray Davis  
Governor

January 11, 2000

Mr. Dean Gould  
BRAC Environmental Coordinator  
Marine Corps Air Station El Toro  
BRAC Operations Office  
1220 Pacific Highway  
San Diego, California 92132-5190

TECHNICAL MEMORANDUM FOR GROUNDWATER MODELING OF  
ALTERNATIVE 8A (PROPOSED PREFERRED SCENARIO) FOR REMEDIATION  
OF THE VOLATILE ORGANIC COMPOUND (VOC) PLUME IN THE IRVINE  
SUBBASIN PRINCIPAL AQUIFER FOR OPERABLE UNIT (OU) 1,  
INSTALLATION RESTORATION PROGRAM (IRP) SITE 18, MARINE CORPS  
AIR STATION (MCAS) EL TORO

Dear Mr. Gould:

The Department of Toxic Substances Control (DTSC) reviewed the above memorandum dated October 21, 1999 and received by this office on December 1, 1999. The report presents the results of groundwater modeling performed by CH2M Hill for the Irvine Ranch Water District (IRWD) for a new proposed preferred scenario to remediate the VOC plume in the Irvine Subbasin Principal Aquifer. This scenario consists of extraction of groundwater from areas with TCE concentrations less than the MCL for the potable system and above the MCL for the recycled system.

Based on review of the summary report, DTSC comments are attached. DTSC understands that Alternative 8A will be incorporated into the draft Proposed Plan (PP) to be issued on January 28, 2000. Please submit a response to the enclosed comments and a revised technical memorandum prior to issuing the draft final PP so that DTSC will have adequate time to review and comment prior to release of the final PP to the public.

Mr. Dean Gould  
January 11, 2000  
Page 2

If you have any questions, please contact me at (714) 484-5395.

Sincerely,



Triss M. Chesney, P.E.  
Remedial Project Manager  
Southern California Branch  
Office of Military Facilities

Attachment

cc: Mr. Glenn Kistner  
Remedial Project Manager  
U. S. Environmental Protection Agency Region IX  
Superfund Division (SFD-8-2)  
75 Hawthorne Street  
San Francisco, California 94105-3901

Ms. Patricia Hannon  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
Riverside, California 92501-3339

Mr. Gregory F. Hurley  
Restoration Advisory Board Co-chair  
620 Newport Center Drive, Suite 450  
Newport Beach, California 92660-8019

Ms. Polin Modanlou  
MCAS El Toro Local Redevelopment Authority  
10 Civic Center Plaza, 2<sup>nd</sup> Floor  
Santa Ana, California 92703

Mr. Andy Piszkin  
Naval Facilities Engineering Command  
Southwest Division - Code 5BME.AP  
1220 Pacific Highway  
San Diego, California 92132-5187



## Department of Toxic Substances Control



Winston H. Hickox  
Agency Secretary  
California Environmental  
Protection Agency

Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630

Gray Davis  
Governor

January 19, 2000

Mr. Dean Gould  
BRAC Environmental Coordinator  
Marine Corps Air Station El Toro  
BRAC Operations Office  
1220 Pacific Highway  
San Diego, California 92132-5190

TECHNICAL MEMORANDUM FOR GROUNDWATER MODELING OF ALTERNATIVE 8A (PROPOSED PREFERRED SCENARIO) FOR REMEDIATION OF THE VOLATILE ORGANIC COMPOUND (VOC) PLUME IN THE IRVINE SUBBASIN PRINCIPAL AQUIFER FOR OPERABLE UNIT (OU) 1, INSTALLATION RESTORATION PROGRAM (IRP) SITE 18, MARINE CORPS AIR STATION (MCAS) EL TORO

Dear Mr. Gould:

Due to a clerical oversight the attachment referred to in the January 11, 2000 letter you received was not mailed to you, and I am sending it to you at this time. Please accept my apology for any inconvenience this may have caused you. Do not hesitate to call me at (714) 484- 5395 if you have any questions regarding this matter.

Sincerely,

Triss M. Chesney, P.E.  
Remedial Project Manager  
Southern California Branch  
Office of Military Facilities

Attachment

cc: Mr. Glenn Kistner  
Remedial Project Manager  
U. S. Environmental Protection Agency Region IX  
Superfund Division (SFD-8-2)  
75 Hawthorne Street  
San Francisco, California 94105-3901

Mr. Dean Gould  
January 19, 2000  
page 2

cc: Ms. Patricia Hannon  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
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Naval Facilities Engineering Command  
Southwest Division - Code 5BME.AP  
1220 Pacific Highway  
San Diego, California 92132-5187

Mr. Dean Gould  
January 19, 2000  
page 3

bcc: Ms. Sharon Fair, Unit Chief  
Base Closure/Reuse Unit  
Southern California Branch  
Office of Military Facilities

Ms. Alice Gimeno  
Southern California Branch  
Office of Military Facilities

Mr. Ron Okuda  
Geological Services Unit  
Geology and Corrective Action Branch



Winston H. Hickox  
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California Environmental  
Protection Agency

## Department of Toxic Substances Control

Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630



Gray Davis  
Governor

### MEMORANDUM

TO: Triss Chesney  
Hazardous Substances Engineer  
Office of Military Facilities

FROM: Ron Okuda *Ron Okuda*  
Hazardous Substances Engineering Geologist  
Geological Services Unit

DATE: December 23, 1999

SUBJECT: TECHNICAL MEMORANDUM: GROUNDWATER MODELING OF  
ALTERNATIVE 8A ( PROPOSED PREFERRED SCENARIO),  
REMEDIAATION THE VOC PLUME IN THE IRVINE SUBBASIN  
PRINCIPAL AQUIFER

PCA: 14740

Site Code: 400055-47

### INTRODUCTION

As requested, the Geological Services Unit (GSU) reviewed the "Technical Memorandum: Modeling of the Proposed Preferred Scenario to Remediate the TCE (Trichloroethene) Plume in the Irvine Subbasin (Tech Memo)," dated October 21, 1999. The Tech Memo was prepared by CH2M HILL for the Irvine Ranch Water District.

The Tech Memo discusses a new proposed preferred scenario, identified by the Department of the Navy (DON) as Alternative 8A, to remediate the Operable Unit 1 (OU-1) regional TCE plume and shallow groundwater unit. Alternative 8A was modeled using the Coupled Flow, Energy, and Solute Transport (CFEST) groundwater model. CFEST was also used to model and compare the alternatives in the "Draft Final OU-1 Interim Action Feasibility Study (IAFS)," dated August 9, 1996. This provides a comparison between Alternative 8A and the alternatives in the OU-1 IAFS.

The CFEST model in the Draft Final OU-1 IAFS was reviewed by Ms. Sherrill Beard, DTSC Hazardous Substances Engineering Geologist and Mr. Herb Levine, Hydrogeologist for the U.S. EPA. Mr. Tayseer Mahmoud, DTSC project manager at the time and Ms. Beard submitted comments in a letter dated October 11, 1996. The DON's response to hydrogeologic comments were reviewed by Ms. Beard and she found the responses acceptable.

#### **COMMENTS:**

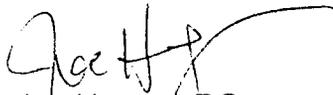
1. DTSC has encouraged the joint project between the DON, Orange County Water District and Irvine Ranch Water District. The Water Districts manage the use of the groundwater in the principal aquifer and a joint project is probably the most effective long term method to remediate the groundwater contamination.
2. The Tech Memo presents the technical approach used to model Alternative 8A but does not evaluate the results of the model simulations. The Tech Memo only presents the modeling results in a series of figures and tables. GSU recommends that the Tech Memo include an evaluation of the Alternative 8A groundwater simulation (including the supporting tables and figures) similar to the evaluations of alternatives in Section 6.0 of the Groundwater Modeling Report of the OU-1 IAFS (Volume VI, Appendix A). This will ensure that the data has been fully evaluated and comparisons between the alternatives are presented in an equivalent manner.
3. Reports containing interpretations of hydrogeologic and geochemical data must be signed by a Geologist or Civil Engineer, or a Certified Engineering Geologist or Hydrogeologist registered in the state of California who takes responsibility for the technical content of the Report.
4. The figure titled "Simulated TCE in the Principal Aquifer After 20 Years" appears to be showing the TCE in the principal aquifer AND shallow groundwater unit.

#### **CONCLUSION:**

Based on the limited information presented, the model simulation of Alternative 8A appears to be as effective as Alternative 6A in capturing the TCE plumes in the principal aquifer and shallow groundwater unit. The greatest difference is the simulated time to clean up the principal aquifer. GSU recommends that the Tech Memo be revised to include an evaluation (with supporting tables and figures) of the simulation for Alternative 8A. The Tech Memo must be signed by a Geologist or Civil Engineer, or a Certified Engineering Geologist or Hydrogeologist registered in the state of California.

Triss Chesney  
December 23, 1999  
Page 3

Reviewed by:

A handwritten signature in black ink, appearing to read "Joe Hwang". The signature is stylized with a large, sweeping flourish that extends to the right.

Joe Hwang, RG  
Hazardous Substances Engineering Geologist

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## TRANSMITTAL

Date: 7 February 2000

From: Lynn Marie Hornecker  
MCAS El Toro

LMA

To: Diane Silva  
Code 01LS.DS

**Subj: CERCLA Administrative Record Materials**  
Marine Corps Air Station, El Toro

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*UIC Number:* M60050

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*Recipient:* Dean Gould, SWDIV

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