



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

April 18, 1996

Mr. Stephen Chao
Naval Facilities Engineering Command
Engineering Field Activity, West
900 Commodore Way, Bldg. 101
San Bruno, CA. 94066-2402

Re: *Draft Operable Unit 1 Record of Decision*, dated March 7, 1996

Dear Mr. Chao,

The U.S. Environmental Protection Agency (EPA) has received the subject document and provides the following comments. If you have any questions, please call me at 415-744-2385.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Gill".

Michael D. Gill
Remedial Project Manager
Federal Facilities Cleanup Office

Attachments: (1) ARARs Section of Muscoy ROD, pages 22-30
(2) Action-Specific ARARs Section of Mather Air Force Base ROD,
pages 2-128 - 2-133

cc (w/o attachments) : Michael Bessette (RWQCB)
C. Joseph Chou (DTSC)
Ken Eichstaedt (URS)
Sandy Olliges (NASA)
Peter Strauss (MHB)
Mike Young (PRC) (w/attachments) (Fax)

COMMENTS

Draft Operable Unit 1 Record of Decision, dated March 7, 1996

GENERAL COMMENTS

1. The continued operation of the Building 191 pump station is necessary for the successful implementation of the capping alternative selected at OU1's Sites 1 and 2. Without its operation, the northern portion of the base, including the landfills, will flood during rainy seasons. Building 191's pumping operation helps to prevent leachate migration into local groundwater from the unlined landfills by controlling the water table.
2. The Navy needs to provide justification for using municipal solid waste landfill regulations instead of using hazardous waste landfill regulations in this document (i.e., the amount of hazardous waste in the landfills is small). Although no records exist, Navy interviews with former workers suggested that significant amounts of hazardous waste was disposed of in the landfills (PCBs, solvents, jet fuels etc.). We acknowledge that characterization and monitoring studies have shown only minimal amounts of hazardous waste in Sites 1 and 2 and that municipal solid waste requirements apply. However, because this characterization is in disagreement with the interviews, language in the ROD needs to reflect the characterization and investigation results which support that the amount of hazardous substances in the landfill is de minimis in relation to the non-hazardous solid waste in the landfill. This then justifies the use of municipal solid waste landfill regulations.
3. Assuming the amount of hazardous waste in the landfill is small, in order for State municipal solid waste regulations to be ARARs, the state regulations must be more stringent than the federal regulation (RCRA Subtitle D). Thus, further analysis is necessary to determine which provisions of 14 CCR are more stringent than Subtitle D.

SPECIFIC COMMENTS

4. Section 1.0, page 2, Bullet 7. Please briefly specify the institutional controls to be implemented (i.e. Building 191 operation and maintenance, fencing, etc.).
5. Section 1.0, page 2, para 1, sentence 5. Please describe in brief detail the contingency corrective actions.
6. Section 1.0, page 2, para 2, 4th and 5th sentence. You indicate that if the groundwater becomes contaminated, there are provisions in the groundwater monitoring program that allow for future corrective actions. This corrective action approach is not consistent with the CERCLA remedy selection process. If the groundwater is or becomes contaminated,

a remedy would have to be selected within the framework of CERCLA; in an existing groundwater ROD or a future groundwater ROD. If you intend this ROD to address groundwater contamination, you may consider drafting it as a groundwater contingency ROD, i.e., if contaminant levels exceed a certain level, then the remedy will be to pump and treat. Or you can state that this ROD is a containment ROD and the groundwater will be addressed in a later ROD.

7. Section 2.4, page 12. The ROD schedule table needs some update. It should reflect that the OU2-East ROD was signed on December 22, 1994. The Station-Wide ROD is now scheduled to be completed in September, 1997.
8. Section 2.4, page 12, para 2. The discussion in the second sentence regarding quick identification of parcels for transfer is really not applicable here, since this federal facility has already been transferred to NASA. We suggest that this sentence be edited to delete the last half of the sentence. It should more accurately read: "This strategy, which utilizes the use of no-action RODs, allows resources to be concentrated on the OUs requiring action."
9. Section 2.5, page 12. You state that the NCP identifies landfills as areas where treatment may be impracticable. Please provide a citation. You also state that the landfill has not been fully characterized because it is not necessary for containment; however, there are different closure requirements for landfills depending upon whether it is a solid waste landfill or a landfill that has accepted hazardous waste (Subtitle D and Subtitle C, respectively). Please clarify that limited characterization and monitoring have shown only minimal amounts of hazardous waste in Sites 1 and 2 and that is why municipal solid waste requirements apply. Language in the ROD needs to reflect those characterization and investigation results.
10. Section 2.5.1, page 13, para 2. You state that the landfill received domestic refuse as well as waste from military operations such as solvents, jet fuels, waste oil, transformer filters, and PCB-contaminated sawdust; yet, you are citing California solid waste landfill regulations which apply to landfills receiving solid waste (Chapter 15, Division 3, Title 23 of the CCR and Chapter 3, Division 7, Title 14 of the CCR). If hazardous wastes are disposed of in landfills, Title 22 would normally be applied rather than California's solid waste regulations. If you are citing the solid waste landfill regulations because the characterization and monitoring studies show minimal amounts of hazardous waste, then you should say that to support it. Language in the ROD needs to reflect those characterization and investigation results.
11. Section 2.5.1, page 13, para 2. "Information sources" should be clarified (personnel interviews) as it is in the description of Site 2 (page 15, para 4).
12. Section 2.5.1, page 14, para 3. Sentence 2 states "Some chemical have been detected infrequently...". Please clarify which chemicals were detected infrequently in the

monitoring wells.

13. Section 2.5.2, page 15, para 4. Same comment as #11. If you are citing the solid waste landfill regulations because the characterization and monitoring studies show minimal amounts of hazardous waste, then you should say that to support it. Language in the ROD needs to reflect those characterization and investigation results.
14. Section 2.5.2, page 16, para 3. Again, please clarify which chemicals were infrequently detected in the monitoring wells.
15. Section 2.6.1, page 16, para 1. Although the decision to cap a landfill is typically not dependent on risk assessment results, a human health risk assessment was performed at this site, based on its limited characterization. These results should be presented in this ROD.
16. Section 2.7.2.3, page 23, para 2. Sentence 2 states "...if a concentration level exceeded its background concentration, evaluation monitoring and possibly corrective action would be implemented". Where are these background concentrations defined? Please provide references.
17. Section 2.7.2.3, page 25, para 1. The fact that Building 191 provides hydraulic control in the OU1 areas is a clear indication that the pump station needs to be considered part of the remedy.
18. Section 2.7.2.4, page 25. The text refers to the FS for a list of ARARs. The ROD is a stand-alone document and must include all the necessary information and rationale to support the selected remedy. In this instance, referring back to the RI/FS for identification of ARARs is unacceptable and it is also not wise, since some of the ARARs identified in the FS are no longer considered ARARs in the ROD.
19. Section 2.8, page 26. Redraft this section to read: "A comparative analysis of the alternatives against the nine evaluation criteria set fourth in the NCP at 40 CFR 300.430 (e)(9)(iii) is presented in this section."
20. Section 2.10, page 36, bullet 1. Please indicate the range of permeabilities in the low permeability layer.
21. Section 2.10, page 36, bullet 5. Please clarify what institutional controls are being incorporated.
22. Section 2.10, page 36, paragraph after the bullets: You indicate that the "selected remedy does not include leachate extraction or active groundwater remediation at this time...". From a ROD standpoint, this is unclear. Is this ROD merely a containment ROD implying that the leachate and groundwater will be addressed in a different ROD?

Or is this ROD a contingency ROD that will trigger action if certain levels are exceeded? If this is a contingency ROD, be specific as to what levels will trigger the contingency action (e.g. AWQC levels) and what ARARs will be triggered if the corrective action pumping is necessary. You also state that if the groundwater becomes contaminated, there are provisions in the groundwater monitoring program that allow for future corrective actions. This approach, although appropriate in RCRA actions, is not consistent with the remedy selection process under Superfund.

23. Section 2.11.2, page 39. Attachment 1 is a copy of sections of a signed ROD that illustrate the necessary level of detail for an ARAR discussion. Although it is a groundwater ROD, it will give you an idea of how to draft this section. As our Regional Counsel has stated in previous comments, you should describe what ARARs are, explain what applicable requirements are and how they differ from relevant and appropriate requirements. In addition, provide a definition for chemical-specific, location-specific, and action-specific ARARs and then provide a breakdown of the laws/regulations that fall into these categories and apply to the remedy.
24. Table 3, page 40, 40 CFR part 131. Please include the list of Federal AWQC somewhere in the ROD, possibly as an appendix.
25. Table 3, page 40, 23 CCR §2500. Please briefly specify the corrective action activities.
26. Table 3, page 41, Basin Plan. Please identify the beneficial uses of the groundwater. What are the beneficial uses the RWQCB is trying to protect?
27. Table 3, page 41, Basin Plan. In paragraph 2, it is stated: "There is no evidence that a release has occurred from OU1 landfills.". This disagrees with statements on page 14, paragraph 3 and page 16, paragraph 3. However small, some release has occurred. Please be consistent.
28. Table 3, page 42, 40 CFR 264.18(b), 40 CFR 761.75. These two ARARs suggest that the Building 191 pump station is a necessary part of the remedy.
29. Table 3, page 42, Executive Order 11990. You state: "Discharge of dredge or fill material into a wetland without a permit is prohibited ...". The administrative requirements of the permit may not have to be complied with since the cap (fill) is on site. The NCP states that "requirements that do not in and of themselves define a level or standard of control are considered administrative". Please see 55 Fed. Reg. 8756; 53 Fed. Reg. 51443.
30. Table 3, pages 43, 44, Citing 14 CCR and 23 CCR: See comment #3. Although the hazardous waste in the landfills may be minimal enough to be closed in accordance with solid waste landfill regulations, unless there are sections of 14 CCR which have additional requirements or are more stringent, RCRA Subtitle D is the ARAR.

Attachment 2 (Mather Air Force Base landfills ROD) was recently signed and shows how this same issue was handled. It states that if specific provisions of the federal and state regulations are the same, then the federal regulation is the ARAR. Please identify if any provisions of RCRA Subtitle D are equally as stringent as 14 CCR.

31. Table 3, page 44, 14 CCR 17787-17796. Please repeat "the reasons discussed above" in this block to avoid any misinterpretation.
32. Table 3, page 44, 14 CCR 17782, 23 CCR 2550. Please repeat "the reasons discussed above" in this block to avoid any misinterpretation.
33. Section 2.11.2.2, page 45, Endangered Species Act. Please provide the citation.
34. Section 2.11.2.2, page 46, para 1. Please provide a schedule for the mitigation plan.
35. Section 2.11.2.2, page 47, para 1. Because this is a Superfund site, we do not believe that you have to go through the administrative process of getting the permit; however, the substantive requirements of the permit will still have to be met.

COMMENTS ON RESPONSIVENESS SUMMARY

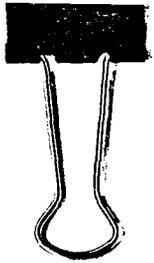
36. Comment 7, page 84. Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.
37. Comment 9, page 92. Same as last comment: Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.
38. Comment 4, page 96 Same as last comment: Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.
39. Comment 8, page 98. Same as last comment: Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.
40. Comment 2, page 114. Same as last comment: Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.
41. Comment 9, page 126. The response states: "The collection trench will be activated when AWQC for the protection of aquatic life are exceeded in groundwater in the

trench.". Will activation of the pump and treat system happen the first occurrence of exceeding AWQC? After two consecutive months or quarters? Please specify the protocol in the ROD text and this response of the Responsiveness Summary.

42. Comment 4, page 129. We believe the authors intended this response to state that 14 CCR 17796 be specified for compliance in the OU1 ROD.
43. Comment 4, page 143. Because Building 191 is necessary as part of the complete remedy for the landfills, its operation and maintenance needs should be included in this ROD, as well as the Station-wide ROD.

EDITORIAL COMMENTS

44. Section 1.0, page 3. The correct spelling of the Executive Officer of the RWQCB is Loretta Barsamian.
45. Comment 25, page 57. Please correct the tense used in the last two sentences, as the public comment period has passed.



MUSCOY PLUME OPERABLE UNIT

RECORD OF DECISION

PART I: DECLARATION

PART II: DECISION SUMMARY

PART III: RESPONSIVENESS SUMMARY

NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

SAN BERNARDINO, CALIFORNIA

**United States Environmental Protection Agency
Region 9 - San Francisco, California**

ATTACHMENT (1)

10. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section discusses Applicable or Relevant and Appropriate Requirements (ARARs) for the selected remedy for the Muscoy Plume OU. Section 121(d) of CERCLA requires that remedial actions attain a level or standard of control of hazardous substances which complies with ARARs of federal environmental laws and more stringent state environmental and facility siting laws. Only state requirements that are more stringent than federal ARARs, and are legally enforceable and consistently enforced may be ARARs.

An ARAR may be either "applicable", or "relevant and appropriate", but not both. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, defines "applicable" and "relevant and appropriate" as follows:

Applicable requirements are those cleanup standards, standards of control, or other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable. "Applicability" implies that the remedial action or the circumstances at the site satisfy all of the jurisdictional prerequisites of a requirement.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and that are more stringent than federal requirements may be relevant and appropriate.

On-site CERCLA actions must comply with the substantive requirements of all ARARs. Off-site activities must comply with both substantive and administrative requirements of all applicable laws. Substantive requirements are requirements that apply directly to actions or conditions in the environment. Examples include quantitative health or risk-based standards for contaminants. Administrative requirements are those mechanisms that assist in the implementation of the substantive requirements (such as reporting, record keeping, and permit issuance), but do not in and of themselves define a level or standard of control. (See 55 Fed. Reg. 8756).

ARARs fall into three broad categories, based on the manner in which they are applied at a site. These categories are as follows:

Chemical-Specific ARARs. Chemical-specific ARARs are health- or risk-based concentration limits, numerical values, or methodologies for various environmental media (i.e., groundwater, surface water, air, and soil) that are established for a specific chemical that may be present in a specific media at the site, or that may be discharged to the site during remedial activities. These

ARARs set limits on concentrations of specific hazardous substances, pollutants, and contaminants in the environment. Drinking water maximum contaminant levels (MCLs) are examples of chemical-specific ARARs.

Location-Specific ARARs. Location-specific ARARs are federal and state restrictions placed on the concentration of a contaminant or on activities to be conducted because they are in a specific location. Examples of restricted locations include flood plains, wetlands, historic places, and sensitive ecosystems or habitats.

Action-Specific ARARs. Action-specific ARARs are technology- or activity-based requirements which determine how a remedial action must be performed. Examples are Resource, Conservation and Recovery Act (RCRA) regulations for hazardous waste treatment, storage or disposal.

Neither CERCLA nor the NCP provides across-the-board standards for determining whether a particular remedy will result in an adequate cleanup at a particular site. Rather, the process recognizes that each site will have unique characteristics that must be evaluated and compared to those requirements that apply under the given circumstances. Therefore, ARARs are identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as remedies.

The following section outlines the ARARs that apply to the interim remedial action at this site:

10.1 Chemical-Specific ARARs

The chemical-specific ARARs for the contaminants of concern at the Muscoy Plume OU are set forth in Table 2 and discussed in the following sections.

10.1.1 Federal Drinking Water Standards

Safe Drinking Water Act (SDWA), 42 U.S.C. S300f et seq., National Primary Drinking Water Regulations, 40 CFR Part 141.

Federal MCLs and MCLGs

EPA has promulgated Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act (SDWA) to protect public health from contaminants that may be found in drinking water sources. Although these requirements are only applicable at the tap for water provided directly to 25 or more people or which will be supplied to 15 or more service connections, they are relevant and appropriate to water that is a current or potential source of drinking water. Because the treatment plant effluent from the Muscoy Plume OU is a potential source of drinking water, EPA has determined that the federal MCLs for the VOCs and any more stringent State of California MCLs for these VOCs are relevant and appropriate to the treatment plant effluent. In accordance with NCP section 300.430(e)(2)(i)(B), EPA has also concluded that non-zero Maximum Contaminant Level Goals (MCLGs) are also relevant and appropriate to treatment plant effluent from the Muscoy Plume OU which may be served as drinking water.

The Muscoy Plume OU is an interim remedial action designed primarily to inhibit the

spread of contamination. Consequently, chemical-specific requirements for the ultimate cleanup of the aquifer, which would be ARARs for a final remedy, are not ARARs for this interim action. (See 55 Fed. Reg. 8755.)

Under Alternatives 2 and 3, EPA will transfer the treated groundwater to a public water supply agency. EPA considers the subsequent serving of the water by the public supply agency (at the tap) to be an off-site, post-remedy activity. Consequently, if the treated water is served as drinking water, all legal requirements for drinking water in existence at the time the water is served will have to be met. Since these requirements are not ARARs, they are not "frozen" as of the date of the ROD. Rather, they can change over time as laws and regulations applicable to drinking water change.

10.1.2 State Drinking Water Standards

California Safe Drinking Water Act, Health and Safety Code, §4010 et seq., California Code of Regulations, Title 22, Division 4, Chapter 15, §64401 et seq.

California Maximum Contaminant Levels (MCLs): 22 CCR 64444.5

The State of California has established drinking water standards for sources of public drinking water, under the California Safe Drinking Water Act, Health and Safety Code Sections 4010 et seq. California MCLs for VOCs are set forth at 22 CCR 64444.5. Several of the state MCLs are more stringent than federal MCLs. In these cases, EPA has determined that the more stringent state MCLs for VOCs are relevant and appropriate for the treatment plant effluent from the Muscoy Plume OU interim remedy. The VOCs for which there are more stringent state standards include cis-1,2-dichloroethene (DCE). There are also some chemicals where state MCLs exist but there are no federal MCLs. EPA has determined that these state MCLs are relevant and appropriate for the treated water prior to discharge or delivery to the water purveyor. The VOCs for which there are no federal MCLs but for which state MCLs exist include 1,1-dichloroethane (DCA).

California Secondary Drinking Water Standards (SDWS): 22 CCR 64471

The State of California has also promulgated Secondary Drinking Water Standards (SDWS) applicable to public water system suppliers, which address the aesthetic characteristics of drinking water. See 22 CCR §64471. Although California SDWS are not applicable to non-public water system suppliers, the California SDWS are relevant and appropriate to the Muscoy Plume OU interim action if the treated water is transferred to a public water supply agency for distribution. It should be noted that federal SDWS have not been identified as ARARs for this action because they are not enforceable limits and are intended as guidelines only. In summary, if the treated water is to be served as drinking water, the treated water at the point of delivery must meet the California SDWS for the contaminants of concern at the Muscoy Plume OU. If the treated water is recharged or (temporarily) discharged to surface waters, the water will not be required to meet State SDWS.

Table 2. Chemical -Specific Applicable or Relevant and Appropriate Requirements at the Muscoy Plume Operable Unit for Treated Water Transferred to Public Water Supply Agency

Compound	ARAR ($\mu\text{g/l}$)	ARAR (Regulation)
1,1 Dichloroethane (DCA)	5	California MCL
cis-1,2-Dichloroethene (DCE)	6	California MCL
Trichloroethene (TCE)	5	Federal MCL
Tetrachloroethene (PCE)	5	Federal MCL
Dichlorodifluoromethane (Freon 12)	--	--
Trichlorofluoromethane (Freon 11)	150	California MCL

Notes:

MCL = Maximum Contaminant Level

"--" indicates that no non-zero MCL, MCLG or SDWS has been promulgated

10.2 Location-Specific ARARs

No special characteristics exist in the Muscoy Plume OU to warrant location-specific requirements. Therefore, EPA has determined that there are no location-specific ARARs for the Muscoy Plume OU.

10.3 Action-Specific ARARs

The action-specific ARARs for the Muscoy Plume OU interim remedy are as follows:

10.3.1 Air Quality Standards

Clean Air Act, 42 U.S.C. §7401 et seq.; California Health & Safety Code §39000 et seq.

South Coast Air Quality Management District Rules 401, 402, 403, 1301-13, 1401

The Muscoy Plume OU alternative treatment of VOCs by air stripping, whereby the volatile chemical compounds are emitted to the atmosphere, triggers action-specific ARARs with respect to air quality.

The Clean Air Act, 42 U.S.C. §7401 et seq., and California Health & Safety Code §39000 et seq., regulate air emissions to protect human health and the environment, and are the enabling statutes for air quality programs and standards. The substantive state and federal ambient air quality standards are implemented primarily through Air Pollution Control Districts. The South Coast Air Quality Management District (SCAQMD) is the district regulating air quality in the San Bernardino area.

The SCAQMD has adopted rules that limit air emissions of identified toxics and contaminants. The SCAQMD Regulation XIV, consisting of Rule 1401, on new source review of carcinogenic air contaminants is applicable for the Muscoy Plume OU. SCAQMD Rule 1401 requires that best available control technology (T-BACT) be employed for new stationary operating equipment, so the cumulative carcinogenic impact from air toxics does not exceed the maximum individual cancer risk limit of ten in one million (1×10^{-5}). EPA has determined that this T-BACT rule is applicable for the Muscoy Plume OU because carcinogenic compounds such as PCE and TCE are present in groundwater, and release of these compounds to the atmosphere may pose health risks exceeding SCAQMD requirements. The substantive portions of SCAQMD Regulation XIII, comprising Rules 1301 through 1313, on new source review are also applicable to the Muscoy Plume OU.

The SCAQMD also has rules limiting the visible emissions from a point source (Rule 401), prohibiting discharge of material that is odorous or causes injury, nuisance or annoyance to the public (Rule 402), and limiting down-wind particulate concentrations (Rule 403). EPA has determined that these rules are also applicable to the Muscoy Plume OU interim remedy.

10.3.2 Water Quality Standards for Reinjection to the Aquifer

If any treated water is reinjected to the aquifer, the treated water must meet all state and

federal action-specific ARARs for such reinjection. The ARARs applicable to reinjection (Alternative 5) are as follows:

Federal Reinjection Standards

Federal Underground Injection Control Regulations: 40 CFR 144.12 - 144.13

The Safe Drinking Water Act, 42 U.S.C. §300f et seq., provides federal authority over injection wells. The Federal Underground Injection Control Plan, codified at 40 C.F.R. Part 144, prohibits injection wells such as those that would be located at the Muscoy Plume OU from (1) causing a violation of primary MCLs in the receiving waters and (2) adversely affecting the health of persons. 40 C.F.R. §144.12. Section 144.13 of the Federal Underground Injection Control Plan provides that contaminated ground water that has been treated may be reinjected into the formation from which it is withdrawn if such injection is conducted pursuant to a CERCLA cleanup and is approved by EPA. 40 C.F.R. §144.13. These regulations are applicable to any Muscoy Plume OU treated water that is reinjected into the aquifer.

Resource Conservation and Recovery Act §3020, 42 U.S.C. §6939b

Section 3020 of the Resource Conservation and Recovery Act (RCRA) is also applicable to the Muscoy Plume OU interim action. This section of RCRA provides that the ban on the disposal of hazardous waste into a formation which contains an underground source of drinking water (set forth in Section 3020(a)) shall not apply to the injection of contaminated groundwater into the aquifer if: (i) such injection is part of a response action under CERCLA; (ii) such contaminated groundwater is treated to substantially reduce hazardous constituents prior to such injection; and (iii) such response action will, upon completion, be sufficient to protect human health and the environment. RCRA Section 3020(b).

State Reinjection Standards

State Water Resources Control Board Resolution 68-16.

State Water Resources Control Board Resolution No. 68-16, which is incorporated in the Santa Ana Regional Water Quality Control Board's Water Quality Control Plan for the Santa Ana River (and specific Bunker Hill sub-basins), is applicable to the Muscoy Plume OU interim action to the extent that treated water is reinjected into the aquifer. Resolution 68-16 requires maintenance of existing state water quality unless it is demonstrated that a change will benefit the people of California, will not unreasonably affect present or potential uses, and will not result in water quality less than that prescribed by other state policies.

The EPA Region IX Regional Administrator's decision in the matters of George Air Force Base and Mather Air Force Base (July 9, 1993) sets forth a balancing process to be used on a case-by-case basis to determine reinjection standards for treated groundwater under Resolution 68-16. This process requires that the following three factors be balanced in order to determine the permitted discharge level: (1) site-specific considerations, including the hydrogeologic conditions at the site, the contaminants discharged, the quality of the receiving water and the designated beneficial uses of the receiving water; (2) treatment technologies; and (3) cost.

Based upon the balancing process set forth in this decision and on a site-specific analysis of the Muscoy Plume OU, EPA has concluded that the substantive reinjection standard for PCE, DCE, TCE, and DCA at the Muscoy Plume OU will be 0.5 ppb on a monthly median basis for each compound. This conclusion is based on data gathered over the last several years at existing state-funded groundwater treatment plants operating at the leading edge of the contaminant plumes of the Newmark Superfund Site. This site-specific information shows that contaminant levels in the groundwater remain within a range that has been consistently treated to below 0.5 ppb TCE/PCE/DCE/DCA using conventional treatment technologies (Granular Activated Carbon and Air-Stripping). The cost, operating and water quality data from these existing treatment plants leads EPA to believe that the 0.5 ppb level can be effectively and economically attained on a monthly median basis assuming essentially identical conditions in the Muscoy Plume remedial action. EPA's analysis relies on data from the existing treatment plants and assumes that EPA will be reinjecting the treated water into relatively clean groundwater at or near the edge of the contaminant plume.

Based on data from existing treatment plants as well as industry-wide treatability studies, EPA has concluded that neither freon 11 nor freon 12 can be treated effectively and economically by liquid-phase or vapor-phase granular activated carbon. More importantly, EPA's Risk Assessment for this Operable Unit shows no increased risk to human health and the environment from freon at this site. EPA has concluded that the reinjection standards for freon 11 is the MCL for freon 11 (150 ppb). It should be noted that the maximum concentration of freon 11 and freon 12 detected in the Muscoy Plume investigation area was 4 ppb for freon 11 and 28 ppb for freon 12.

10.3.3 Water Quality Standards for Temporary Discharges to Surface Water

National Pollutant Discharge Elimination System Program (NPDES)

EPA anticipates that there may be incidental, short-term discharges of groundwater to the San Bernardino County flood control channel or to the City of San Bernardino storm drains during certain remedial activities (for example, during construction of the groundwater extraction system, the VOC treatment plant, and the monitoring wells, during groundwater sampling, and during system maintenance). The ARAR for any groundwater that is discharged, on a short-term basis, to surface waters is the National Pollutant Discharge Elimination System (NPDES) Program which is implemented by the Santa Ana Regional Water Quality Control Board (SARWQCB). Based on the waste discharge limitations adopted by the SARWQCB in Order No. 91-63-043, EPA has determined that groundwater that will be discharged, on a short-term basis, to surface waters on-site must meet state or federal MCLs (whichever is more stringent) for PCE, TCE, DCE, and DCA.

10.3.4 Hazardous Waste Management

California Hazardous Waste Control Act, Health & Safety Code, Division 20, Chapter 6.5

The State of California has been authorized to enforce its own hazardous waste regulations (California Hazardous Waste Control Act) in lieu of the federal RCRA program administered by

the EPA. Therefore, state hazardous waste regulations in the California Code of Regulations (CCR), Title 22, Division 4.5 are now cited as ARARs instead of the federal RCRA regulations.

Under 22 CCR Section 66261.31, certain "spent" halogenated solvents, including TCE and PCE, are listed hazardous wastes (RCRA waste code F002). Although TCE, PCE and certain other halogenated solvents are the contaminants of concern in the groundwater at the Muscovy Plume OU, the source of these contaminants has not yet been determined, and the contaminants cannot therefore be definitively classified as listed RCRA hazardous wastes. However, the contaminants are sufficiently similar to listed RCRA hazardous wastes that EPA has determined that portions of the state hazardous waste regulations are relevant and appropriate to the Muscovy Plume OU interim action.

VOC Treatment Plant Requirements: 22 CCR §§ 66264.14, 66264.18, 66264.25, 66264.600-.603, and 66264.111-.115

The substantive requirements of the following general hazardous waste facility standards are relevant and appropriate to the VOC treatment plant: 22 CCR Section 66264.14 (security requirements), 22 CCR Section 66264.18 (location standards) and 22 CCR Section 66264.25 (precipitation standards).

In addition, an air stripper or GAC contactor would qualify as a RCRA miscellaneous unit if the contaminated water constituted RCRA hazardous waste. EPA has determined that the substantive requirements for miscellaneous units set forth in Sections 66264.600 -.603 and related substantive closure requirements set forth in 66264.111-.115 are relevant and appropriate for the air stripper or GAC contactor. The miscellaneous unit and related closure requirements are relevant and appropriate because the water is similar to RCRA hazardous waste and the air stripper or GAC contactor appear to qualify as miscellaneous units. Consequently, the air stripper or GAC contactor should be designed, operated, maintained and closed in a manner that will ensure the protection of human health or the environment.

Certain other portions of the state's hazardous waste regulations are considered to be relevant but not appropriate to the VOC treatment plant. EPA has determined that the substantive requirements of Section 66264.15 (general inspection requirements), Section 66264.15 (personnel training) and Sections 66264.30-66264.56 (Preparedness and Prevention and Contingency Plan and Emergency Procedures) are relevant but not appropriate requirements for this treatment system. EPA has made this determination because the treatment plant will be required to have health and safety plans and operation and maintenance plans under CERCLA that are substantively equivalent to the requirements of Sections 66264.15, 66264.30-66264.56.

Land Disposal Restrictions: 22 CCR §66268

The land disposal restrictions (LDR) set forth in 22 CCR Section 66268 are relevant and appropriate to on-site disposal of contaminated groundwater on land. The remedial alternatives presented do not include on-site land disposal of untreated groundwater, except as may occur through activities incidental to the remedial activity, such as purging monitoring wells. Any water discharged to land must meet state or federal MCLs, whichever is more stringent, prior to discharge. Such water would not constitute a RCRA hazardous waste and would therefore not trigger LDRs.

The LDRs set forth in 22 CCR 66268 are also relevant and appropriate to the on-site disposal of spent carbon on land. These restrictions would be applicable if the spent carbon contains sufficient quantities of hazardous constituents to render it a characteristic hazardous waste. However, the remedial alternatives presented do not contemplate on-site disposal of spent carbon on land and are therefore unlikely to trigger LDRs.

Storage Requirements: 22 CCR §§66262.34, 66264.170 - 66264.178

The container storage requirements in 22 CCR Sections 66264.170 -.178 are relevant and appropriate for the on-site storage of contaminated groundwater or spent carbon over 90 days. The substantive requirements of 22 CCR Section 66262.34 are relevant and appropriate for the on-site storage of contaminated groundwater or spent carbon for less than 90 days. These requirements would be applicable if the contaminated groundwater or the spent carbon contained sufficient quantities of hazardous constituents to render them characteristic hazardous wastes.

10.4 Other Performance Standards

The NCP authorizes EPA and the state to identify advisories, criteria, guidance or proposed standards to-be-considered (TBCs) that may be helpful or useful in developing CERCLA remedies. NCP, 40 CFR Sections 300.400(g)(3) and 300.430(b)(9). Such TBCs are identified in the RI/FS and may be selected by EPA as requirements for the remedial action in the ROD.

EPA has determined that certain substantive standards for the construction of public water supply wells published by the State of California (the California Water Well Standards) and identified as TBCs in the RI/FS should be requirements for the Muscoy OU interim remedy. While these standards have not been specifically promulgated as an enforceable regulation and are therefore not ARARs, all groundwater facilities designed, located and constructed to produce drinking water must be constructed in accordance with these standards. Since the Muscoy Plume OU interim remedy involves transfer of the treated water to the public water supply agency, EPA has determined that the remedial action will comply with substantive Water Well Standards for construction of water supply wells, such as sealing the upper annular space to prevent surface contaminants from entering the water supply. Standards for location of the extraction wells are not appropriate, since the effectiveness of the remedial action is dependent upon the well locations. Additionally, wells constructed solely for treatment and reinjection with no delivery to the public supply water system will not be subject to these water well construction standards.

**SUPERFUND
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LANDFILL OPERABLE UNIT SITES

**MATHER AIR FORCE BASE
SACRAMENTO COUNTY, CALIFORNIA**

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in the short and long term, by avoidance of "direct or indirect support of new construction in wetlands whenever there is a practicable alternative."

2.8.2.5 Action-Specific ARARs

Action-specific ARARs are technology-based or activity-based requirements or limitations on actions taken with respect to the waste. For the landfills, the major governing action-specific ARARs are those regulations and guidelines developed for the operation and closure of MSWLFs.

At the Federal level, MSWLFs are regulated under Subtitle D of the Resource Conservation and Recovery Act. The Subtitle D regulations are found at Title 40, Part 258 of the CFR. Under Subtitle D, states were required to adopt solid waste permit programs that met the Federal requirements. Within California, the MSWLF regulations are found in Chapter 15, Division 3, Title 23 of the CCR and Chapter 3, Division 7, Title 14 of the CCR. The California State program has been approved by U.S. EPA, but it is not authorized: that is, U.S. EPA has not permitted the state to administer and enforce Subtitle D in lieu of the Federal regulations. The Federal regulations are applicable to any MSWLF that accepts household waste. However, within approved states, such as California, the state regulations may be enforced in addition to the Federal Subtitle D regulations.

Specific provisions of the Federal Subtitle D and state MSWLF regulations have been identified as either applicable or relevant and appropriate for the remediation activities at the landfills. When specific state and Federal MSWLF regulations are the same, the Federal regulation is the ARAR. If the State and Federal standards address the same issue but are not identical, the most stringent requirement is the ARAR. For the Landfill OU, the determination of whether the State MSWLF requirement is more stringent than the federal MSWLF requirement has been deferred to the remedial design phase. The Federal and State requirements are not always directly comparable and sufficient information is not available to determine the stringency of the differing requirements. Tables 2.42 and 2.43 list both the State and Federal MSWLF regulations and a summary of requirements.

Resource Conservation and Recovery Act Subtitle D is applicable only to sites that accept municipal solid wastes after October 1993. Site 4 will be receiving waste from sites 5 and 6 after October 9, 1993. The wastes from sites 5 and 6 are expected to be comparable to municipal solid waste. Consequently, the provisions of Subtitle D (federal or state requirements, whichever are more stringent) are applicable to Site 4.

Disposal Site Operation regulations [14 CCR, Division 7, Chapter 3, Article 7.5] and Federal Subtitle D operating criteria [40 CFR 258.20 to 40 CFR 258.28] have been identified as action-specific ARARs. These regulations define appropriate parameters for the following:

- confined unloading;
- spreading and compaction;
- slopes and cut angles;
- stockpiling;
- availability of cover material;
- daily covers;
- liquid restrictions;
- runoff/runoff controls;
- surface water requirements;
- access requirements;
- air emissions;
- explosive gas controls;
- disease vector controls; and
- exclusion of hazardous waste.

In addition, Disposal Site Control regulations [14 CCR, Division 3, Chapter 3, Article 7.6] are considered applicable to Site 4 and relevant and appropriate to sites 5 and 6. These include requirements for controlling:

- nuisances;
- fire;
- leachate;
- landfill gases;
- dust;
- drainage and erosion; and
- waste contact with water, litter, noise, odor, traffic, and ponding water.

Based on disposal histories and remedial investigation results, the wastes at Sites 5 and 6 are not expected to be hazardous. However, the potential to excavate hazardous wastes from these landfills can not be excluded. If hazardous wastes are found, portions of the DTSC regulations governing the generation (22 CCR 66261) and transfer, treatment, storage, and disposal of hazardous wastes (22 CCR 66264) would be applicable to onsite activities. Any suspected waste would be classified based on the characteristics of hazardous waste (22 CCR 66261) (and also as designated waste under 23 CCR 2522). Any hazardous waste managed on site needs to be handled according to the substantive requirements, including:

- packaging prior to transport (22 CCR 66262.30);
- labeling prior to transport (22 CCR 66262.31); and
- marking prior to transport (22 CCR 66262.32).

Federal regulations that implement the Solid Waste Disposal Act (SWDA) Subtitle D [40 CFR Part 258.60 to 258.61], and State regulations governing closure and post-closure of solid waste disposal sites promulgated by the California Integrated Waste Management Board [14 CCR Division 7, Chapter 3, Article 7.8] were identified as applicable to Site 4 and relevant and appropriate to sites 2 and 3. The State Water Resources Control Board (SWRCB) regulations found at 23 CCR Division 3, Chapter 15, regulations are considered applicable to Site 4 and relevant and appropriate to sites 2 and 3. These regulation are:

- 23 CCR 2546 (a) for final drainage;
- 23 CCR 2546 (c) for run-off controls;
- 23 CCR 2546 (d) for collection and holding of surface water drainage;
- 23 CCR 2558 for groundwater monitoring;
- 23 CCR 2580 (d) for final grading;
- 23 CCR 2581 (a) for final cover design criteria;
- 23 CCR 2596 (b) for an elevation survey.

Substantive Solid Waste Disposal Act Subtitle D closure and post-closure care requirements include:

- designing and installing a final cover system that minimizes infiltration and erosion;
- providing an estimate of the largest area of the landfill requiring a final cover;
- providing an estimate of the maximum inventory of wastes ever onsite over the active life of the facility;
- developing a closure schedule;
- complying with substantive requirements for obtaining certification of closure;
- recording a notation on the deed to the landfill property to notify the any potential purchasers that the site was used for landfilling; and
- conducting post-closure care for the length of time sufficient to protect human health and the environment, including: maintaining the integrity of the final cover, maintaining and operating the leachate collection system (if applicable); monitoring the groundwater; and maintaining and operating the gas monitoring system.

State Water Resources Control Board regulations established criteria for closure and post-closure care of landfill facilities [23 CCR, Division 3, Chapter 15, Article 8]. The action-specific requirements address the following:

- waste containment;
- precipitation and drainage controls;
- final cover construction;
- grading requirements; and
- protection and maintenance of surveyed monuments.

Additional requirements establish groundwater and vadose zone monitoring requirements for the post-closure period [23 CCR, Division 3, Chapter 15, Article 5].

The IWMB requirements for closure [14 CCR, Division 3, Chapter 3, Article 7.8] address:

- development of an emergency response plan;
- security of the landfill site;
- final cover, grading, site face and drainage designs;
- slope protection and erosion control;
- leachate control;
- groundwater monitoring and perimeter monitoring networks;
- landfill gas monitoring and control; and
- structural monitoring.

The IWMB requirements for closure include restrictions on the concentration of methane in air, i.e., 5 percent by volume, that is allowed at the facility property boundary [14 CCR, Division 3, Chapter 3, Article 7.8, Section 17783 (2)]. They also require control of trace gasses to prevent chronic exposure to toxic and/or carcinogenic compounds [14 CCR, Division 3, Chapter 3, Article 7.8, Section 17783 (3)].

The following SMAQMD requirements are ARARs for the covering and removal/consolidation alternatives:

- Rule 403 - Fugitive Dusts: Limits visible particulate emissions at the property line.
- Rule 202 - New Source Review: Requires that any new source meet emission limitations for criteria air pollutants, including use of Best Available Control Technology (BACT) to any new emissions unit. The SMAQMD has

determined that no controls is BACT for passive gas venting at site 2, 3, and 4.

- **Rule 402 - Nuisance Standard:** Limits emissions of odors and other nuisance material to the air.

The State has asserted that State Water Resources Control Board Resolution 92-49, specifically Paragraphs III F and III G, is an applicable requirement for all of the proposed remedial actions. No determination is made in this document that Resolution 92-49 is an ARAR for the selected remedial actions. However, the State has determined that the substantive requirements of Resolution No. 92-49 are being met by the remedial actions. Therefore, the State has decided not to dispute the ROD on these grounds.

A number of regulatory requirements in Title 14, CCR, Division 7, Chapter 3, Article 7.5 (Disposal Site Operations) were not considered ARARs because they do not directly address protection of public health and the environment, but rather address worker health and safety or good work and management practices. However, the landfill sites will be remediated under approved health and safety plans to ensure that work is accomplished according to applicable health and safety requirements. In addition, the work will be planned and conducted to meet the ARARs identified for the remedial actions, incorporating these practices as appropriate. The requirements in these categories contained in the Title 14 regulations that were not considered ARARs include:

- **Sanitary Facilities:** Adequate sanitary facilities for site personnel shall be available on-site or in the immediate vicinity
- **Water Supply:** Safe and adequate drinking water shall be available for site personnel
- **Communications Facilities:** Communications facilities will be available to site personnel to allow quick response to emergencies
- **Lighting:** Lighting will be used for operations conducted during hours of darkness
- **Personnel Health and Safety:** Operating and maintenance personnel shall be required to wear and use approved safety equipment

- **Availability:** Adequate staffing will be provided by operator to deal effectively and promptly with operations, maintenance, environmental controls, emergencies, and health and safety
- **Training:** Personnel assigned to the site will be adequately trained.
- **Supervision:** Adequate supervision of site operations will be provided, as well as notification to authorities of responsible operator, station manager, and supervisor
- **General:** Equipment will be adequate in type, capacity, number and maintained in order to consistently perform work to comply with regulatory standards
- **Standby Equipment:** Standby equipment is not required providing a source of replacement equipment is maintained adequately.
- **General:** Preventative maintenance procedures and programs for equipment and site facilities will be developed and used for operating and completed sites.
- **Traffic Control:** Traffic will be managed to minimize traffic safety problems on adjacent public roads.

Several of the California regulations require certification by a professional geologist or engineer, registered or certified by the State of California. These portions of the regulations are considered procedural rather than substantive requirements. However, to the degree that federal contractors perform and/or supervise the engineering and geotechnical work, they will be certified professionals or under the supervision of certified professionals as appropriate.

2.8.2.6 Site 1 - Runway Overrun Landfill

Alternative 1.1 is the only alternative developed for this site. No refuse or contaminants were found during remedial activities. Therefore, no comparative analysis is necessary.

2.8.2.7 Site 2 - "8150" Area Landfill

Both Alternatives 2.2 and 2.3 would meet ARARs in approximately the same timeframe.