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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

CITY OF SAN BERNARDINO, Plaintiff, v. UNITED STATES OF AMERICA, Defendant.	CIVIL ACTIONS NOS. CV 96-8867(MRP) CV 96-5205 (MRP) Consolidated
STATE OF CALIFORNIA, on behalf of the DEPARTMENT OF TOXIC SUBSTANCES CONTROL, Plaintiff, v. UNITED STATES OF AMERICA, Defendant.	NOTICE OF LODGING OF CONSENT DECREE

The United States of America hereby notifies the Court that concurrently with this notice, the United States is lodging a proposed Consent Decree, which has been signed by all the parties. If it is entered by the Court, the Consent Decree will resolve the claims brought in the complaint

filed in this action.

Prior to entry, however, consistent with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7, the United States will publish notice of the Consent Decree in the Federal Register and accept public comment on the proposed Decree for a period of thirty (30) days. After the close of the public comment period, the United States will inform the Court of what further action should be taken by the Court.

Therefore, the United States requests the Court not to take any action on the Consent Decree at this time.

Respectfully submitted on August 10, 2004.

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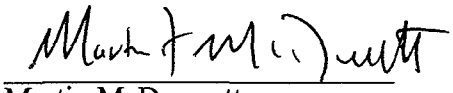

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IN THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

CITY OF SAN BERNARDINO, Plaintiff, v. UNITED STATES OF AMERICA, Defendant.	CIVIL ACTIONS NOS. CV 96-8867(MRP) CV 96-5205 (MRP) Consolidated
STATE OF CALIFORNIA, on behalf of the DEPARTMENT OF TOXIC SUBSTANCES CONTROL, Plaintiff, v. UNITED STATES OF AMERICA, Defendant.	CONSENT DECREE

I. BACKGROUND

A. The State of California ("State"), on behalf of the Department of Toxic Substances Control ("DTSC"), and the City of San Bernardino ("City") filed complaints against the United States, Department of the Army ("Army") in 1996, pursuant to, inter alia, Section 107 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9607. DTSC and the City in their complaints seek, inter alia, reimbursement of costs incurred and to be incurred at the Newmark Groundwater Contamination Superfund Site, together with accrued interest. DTSC also seeks natural resource damages for resources under the trusteeship of DTSC. In their complaints, later consolidated by the Court, DTSC and the City alleged that the Army's World War II-era operations at the former San Bernardino Engineering Depot, commonly referred to as the former "Camp Ono," a Formerly Used Defense Site located in San Bernardino, California, caused or contributed to the groundwater contamination at the Newmark Groundwater Contamination Superfund Site. The groundwater is principally contaminated with tetrachloroethylene (also known as perchloroethylene or "PCE"), trichloroethylene ("TCE"), and Freon 11 and 12. The actions filed by DTSC and the City have been stayed by this Court by orders dated December 23, 1999, October 12, 2000, May 24, 2001, November 26, 2001, July 30, 2002, March 21, 2003 and October 7, 2003 to enable these parties to resolve their claims pursuant to this Consent Decree. DTSC's case is styled *State of California, on behalf of the Department of Toxic Substances Control v. United States, et al., CV 96-5205 (MRP),* and the City's case is styled *City of San Bernardino, Municipal Water Department v. United States, et al.,* CV 96-8867 (MRP).

B. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), alleges that it has claims against

the City, which claims could be asserted in this or another action as direct claims, counterclaims or otherwise. The claims on behalf of EPA include claims for: (1) reimbursement of costs incurred or to be incurred by EPA for interim response actions at the Newmark Groundwater Contamination Superfund Site, Newmark Operable Unit and Muscoy Operable Unit, (respectively, "Newmark OU" and "Muscoy OU" and collectively "the Site") in San Bernardino, California, together with accrued interest; and (2) performance of studies and response work at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP"). The United States' claims also include a claim for performance of certain response work at the Source Control Operable Unit ("Source Control OU") and otherwise in connection with the Newmark Groundwater Contamination Superfund Site. The Parties agree that the United States on behalf of EPA is an appropriate party plaintiff pursuant to Fed. R. Civ. P. 19 and 24.

C. The City denies the allegations advanced against it on behalf of the Army in this litigation and the allegations that could be advanced against it in a counterclaim or otherwise on behalf of EPA as set forth in Paragraph B. The United States has denied the allegations of the City's and DTSC's complaints. The parties to this Consent Decree ("Parties") do not admit any liability arising out of the transactions or occurrences alleged in the complaints.

EPA Response Actions

D. On June 9, 2000, in accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State, the City, the Army and other parties regarding implementation of the interim remedial actions at the Newmark OU and the Muscoy OU and invited these parties to participate in negotiations to resolve their respective claims.

E. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the Department of the Interior on October 22, 2001, and the California Resources Agency, the California Department of Fish and Game, the California State Water Resources Control Board and the California Environmental Protection Agency on October 24, 2001, of these negotiations regarding the release of hazardous substances that may have resulted in injury to natural resources under federal or State trusteeship and encouraged the trustees to participate in the negotiation of this Consent Decree.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Newmark Groundwater Contamination Superfund Site on the National Priorities List ("NPL"), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 31, 1989, 54 Fed. Reg. 13296, 13301.

G. In response to a release or a substantial threat of a release of a hazardous substance(s) at or from the Newmark Groundwater Contamination Superfund Site, EPA commenced a Remedial Investigation ("RI") focusing on the Newmark OU in late 1990. EPA expanded the RI to include the Muscoy OU in September 1992.

H. EPA completed the RI and Feasibility Study ("RI/FS") pursuant to 40 C.F.R. § 300.430, for the Newmark OU in March 1993 and the RI/FS for the Muscoy OU in December 1994.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the Proposed Plan for interim remedial action at the Newmark OU in March 1993 in the form of a fact sheet distributed to all persons on EPA's mailing list for the Newmark Superfund Site. EPA also issued a press release on March 17, 1993 to announce the release of the Proposed Plan to the public and published notice of the availability of the

Proposed Plan and of a public meeting in the San Bernardino Sun on March 18, 1993. EPA provided an opportunity for written and oral comments from the public on the Proposed Plan for interim remedial action at the Newmark OU. EPA extended the initial 30-day (thirty-day) notice period by 45 (forty-five) days in response to requests from members of the public. The public comment period closed on May 5, 1993. A copy of the transcript of the public meeting on April 14, 1993 is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the interim remedial action at the Newmark OU.

J. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the Proposed Plan for interim remedial action at the Muscoy OU in December 1994 in the form of a fact sheet distributed to all persons on EPA's mailing list for the Newmark Superfund Site. EPA also issued a press release on December 16, 1994 to announce the release of the Proposed Plan to the public and published notice of the availability of the Proposed Plan and of a public meeting in the San Bernardino Sun on December 14, 1994. EPA provided an opportunity for written and oral comments from the public on the Proposed Plan for interim remedial action at the Muscoy OU. EPA extended the initial 30-day (thirty-day) notice period to more than five weeks to accommodate the holiday season; no requests for extensions were received from the public. The public comment period closed on January 29, 1995. A copy of the transcript of the public meeting on January 20, 1995 is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the interim remedial action at the Muscoy OU.

K. The decisions by EPA on the interim remedial actions to be implemented at the Site are embodied in the Newmark OU Record of Decision ("Newmark ROD"), executed on August 4, 1993, and in the Muscoy OU ROD ("Muscoy ROD"), executed on March 24, 1995

(collectively, "Interim Remedial Actions"), on both of which the State had a reasonable opportunity to review and comment and on which the State has given its concurrence. The Newmark and Muscoy RODs include EPA's explanation for any significant differences between the RODs and the Proposed Plans as well as a responsiveness summary relating to the public comments. Notices of the final plans were published in accordance with Section 117(b) of CERCLA. The Newmark ROD requires extraction of contaminated groundwater from the Newmark OU, treatment of the contaminated groundwater to meet all State and federal requirements for drinking water, and delivery of the treated groundwater to the City for distribution to the public through its potable water supply system, or in the alternative, recharge to the aquifer. The Muscoy ROD requires extraction of contaminated groundwater from the Muscoy OU, treatment of the contaminated groundwater to meet all State and federal requirements for drinking water, and delivery of the treated groundwater to the City for distribution to the public through its potable water supply system, or in the alternative, recharge to the aquifer. Construction of the Newmark OU extraction and treatment system was completed in October, 1998. Construction of the Muscoy OU extraction and treatment system is anticipated to be complete in 2004.

L. Pursuant to Section 104(c) of CERCLA, 42 U.S.C. § 9604(c), EPA and DTSC have entered into State Superfund Contracts ("SSC's") for the Newmark and Muscoy OUs. Under the SSC's, EPA provides ninety per cent (90%) of the funding necessary for implementation of the Interim Remedial Actions and the first ten years of operation and maintenance ("O&M") for the Newmark and Muscoy OUs and DTSC provides ten per cent (10%) of those costs. On September 18, 1995, EPA and the City entered into a Cooperative Agreement for the City to perform certain construction activities and the O&M for the Newmark

OU. The City currently performs O&M on the Newmark OU extraction and treatment system and accepts the treated groundwater, which complies with applicable federal and State standards and permit limits, into its potable water supply system. The costs incurred by the City to implement the work under the Cooperative Agreement have been paid by EPA (90%) and DTSC (10%). On August 6, 1996, the Cooperative Agreement was amended to include the City's performance of certain aspects of the Interim Remedial Action for the Muscoy OU, i.e., construction of the Muscoy OU extraction system, performance of the O&M on the Muscoy extraction and treatment system, and acceptance of the treated water, which complies with applicable federal and state standards and permit limits, from the Muscoy treatment system. The Muscoy OU is currently in the remedial design and construction phase. EPA currently performs the lead oversight function for the Site. The City has performed its work under the Cooperative Agreement under the oversight of EPA's assigned Remedial Project Manager.

M. The City is a charter City under California law. As part of its duties and powers, its Municipal Water Department and its predecessors supply water to its residents. Pursuant to California law, the City is empowered to enact ordinances to protect the quality of underground water.

N. EPA has published notice of a proposed Explanation of Significant Differences ("ESD") in a local newspaper of general circulation and sought public comment on the proposed ESD. The ESD is attached as Appendix I to this Consent Decree. The ESD provides for the imposition of institutional controls to assure that the Newmark and Muscoy treatment systems remain effective in meeting the objectives of inhibiting the migration of groundwater contamination into clean portions of the aquifer. The institutional controls to be imposed pursuant to the ESD are to protect the barrier well system established pursuant to the Newmark

and Muscoy RODs, and are an essential and integral component of the interim remedies for the Newmark and Muscoy OUs. Pursuant to the ESD, the City will adopt an ordinance requiring that the installation of new wells that might impact the barrier wells be conducted pursuant to a permit and that the applicant for any such permit demonstrate that the operations of the new well will not contribute to the migration of contaminants past the barrier wells into the uncontaminated portions of the aquifer.

O. In addition to the Newmark and Muscoy OUs, EPA has initiated a Source Control OU RI/FS for the Newmark Groundwater Contamination Superfund Site. To determine the sources of the contamination, the U.S. Army Corps of Engineers ("USACE"), on behalf of the Army, and the City have performed substantial field investigation and the Army and the City have thereby incurred response costs. These investigations have included installing groundwater monitoring wells, soil gas sampling, soil sampling and geophysical surveys. EPA expects the Source Control OU RI/FS to help EPA determine, among other things, whether there will be further remedial action required for the Newmark Groundwater Contamination Superfund Site, beyond what is presently required by the Newmark and Muscoy OU RODs, the ESD and this Consent Decree.

DTSC and City Response Actions

P. In 1980, the California Department of Health Services ("DOHS") sampled water produced from certain City wells and detected contamination from chlorinated volatile organic compounds, including PCE, TCE, freon, decomposition byproducts from those compounds, and other contaminants. As a result of the DOHS sampling, contaminated wells were found in the City's Newmark wellfield. Also as a result of the DOHS sampling in 1980, a second area of contaminated wells was located in the western portion of the City. This contaminated

groundwater became known as the Muscoy plume.

Q. The California Department of Health Services (which subsequently became DTSC) found that the Newmark and Muscoy plumes constituted an ongoing release of hazardous substances and an emergency threatening public health and the environment. On November 17, 1986, the California Department of Health Services issued a Determination of Imminent and Substantial Endangerment in the matter of North San Bernardino, Muscoy Hazardous Substance Release Site, which formed part of the legal basis for emergency action by the City and DTSC to undertake wellhead treatment of the water produced from the Newmark well field.

R. On October 30, 1986, DTSC contracted with the City to construct, operate and maintain four treatment systems located at the Newmark wellfield and elsewhere, and DTSC and its assigned remedial project manager directed and oversaw the City's work on the design, construction, operation and maintenance of those treatment systems. DTSC paid for the design and construction of four treatment systems and appurtenant facilities at the Newmark wellfield. The City has paid for, and continues to pay for, the operation and maintenance of these treatment systems and the City paid for and constructed appurtenant storage and distribution facilities needed to accommodate these treatment systems.

Consent Decree Response Actions

S. Subject to the City's and EPA's reservations of rights concerning the Cooperative Agreement, this Consent Decree supersedes the SSC's and the Cooperative Agreement for the Newmark and Muscoy OUs, and provides, *inter alia*, for the City to perform the O&M on the Newmark OU and Muscoy OU extraction and treatment systems and Newmark Groundwater Contamination Superfund Site-wide Monitoring, and for the City to accept the treated water from the Newmark and Muscoy OUs into the City's potable water supply, provided that the treated

water meets State and federal permit limits and other regulatory requirements.

T. EPA and the City intend to work cooperatively to update, maintain and improve the Groundwater Model developed by EPA in connection with the Newmark and Muscoy OU RI/FS's. The Parties anticipate that the Groundwater Model will provide a valuable tool for analyzing and deciding how to address the effect of other groundwater extraction, surface water spreading, or similar systems that may affect the integrity and effectiveness of the Newmark and Muscoy Operable Units extraction and treatment systems.

U. Based on the information presently available, EPA believes that the Work (as defined below) will be properly and promptly conducted by the City if conducted in accordance with the requirements of this Consent Decree and its appendices.

V. Solely for the purposes of Section 113(j) of CERCLA, the Interim Remedial Actions selected by the Newmark and Muscoy OU RODs and the Work to be performed shall constitute a response action taken or ordered by the President.

W. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Parties.

a. Solely for the purposes of this Consent Decree and the underlying complaints, the Parties waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. The City and DTSC shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

b. The Court finds that institutional controls are an integral component of the interim remedies to be implemented at this Site. The Parties have determined to implement the institutional controls through a groundwater management and permit program described in Paragraphs 27-30 of this Consent Decree. Accordingly, the Court finds that it has jurisdiction over any challenge to the groundwater management and permit program to be implemented by the City under Paragraphs 27-30. The Court further finds that any challenge to the groundwater management and permit program or to a permit decision meets the requirements for removal under 28 U.S.C. § 1441, and shall be removable to this Court by any of the United States, DTSC or the City, or by officers of any of these entities acting in their official capacities to implement and defend the interim remedies at this Site. The Parties shall cooperate with each other in the defense of the Interim Remedial Actions, permit decisions at this Site, and the groundwater management and permit program.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon DTSC and the City, and their successors, agents and assigns, and upon the United States. Any change in ownership, corporate or governmental status of the Parties including, but not limited to, any transfer of assets or real or personal property, shall in no way alter the Parties' responsibilities under this Consent Decree.

3. The City shall provide a copy of this Consent Decree to each contractor hired to perform the Work (as defined below) required by this Consent Decree and to each person

representing the City with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. The City or its contractors shall provide written notice of this Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. The City shall nonetheless be responsible for ensuring that its contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Party for whom it performs any portion of the Work within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 *et seq.*

"City" or "City of San Bernardino" shall mean the City of San Bernardino, California, including any of its divisions, departments, agencies or other subdivisions, and any successors thereto.

"City Future Response Costs" shall mean costs incurred by the City after the date of funding the O&M and Construction Escrows, subject to the City's reservation of rights (including rights regarding the Cooperative Agreement), through the earliest of the following

dates, as may be applicable to the work in question:

a. Final Certification of Completion under Paragraph 57.d or Final Notice of Completion under Paragraph 57.e;

b. With respect to the Newmark OU treatment system, including O&M, and any other costs associated with the Newmark OU treatment system, fifty years after October 1, 2000, the date that the Newmark OU treatment system was determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2);

c. With respect to the Muscoy OU treatment system, including O&M, and any other costs associated with the Muscoy OU treatment system, 50 (fifty) years after the Muscoy OU treatment system is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2);

d. With respect to costs for additional treatment capacity constructed to address the Newmark Groundwater Contamination Superfund Site contamination, 50 (fifty) years after entry of this Consent Decree;

e. With respect to costs for Site-wide Monitoring to be performed pursuant to this Consent Decree, 50 (fifty) years after the Muscoy OU treatment system is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); or

f. With respect to costs associated with the DTSC/City treatment systems, system, fifty years after the date of entry of this Consent Decree.

Such costs shall include but shall not be limited to: (1) any differential due to the change in location of City wells to accommodate the Site treatment systems; (2) the cost of power incurred due to the requirement that the Site treatment systems be operated on a 24/7 or other schedule that differs from the schedule dictated by the City's production needs; (3) the cost of land used

for the Site treatment systems and appurtenances; (4) the cost of comprehensive general liability and property damage insurance related to the Site; (5) the cost of permits required for the Site, including, but not limited to, permits required by the Department of Health Services, the Air Quality Management District, the Regional Water Quality Control Board (NPDES permits), and any other state or local permit; and (6) the cost of any item described in Paragraph 14.d, 14.f, 14.g, 14.i or 14.j, to the extent such costs are not reimbursable or exceed the funding limits of this Consent Decree. Such City Future Response Costs shall not include any City costs related to any other site, including, but not limited to, the Norton Air Force Base Superfund Site.

"City Past Costs" shall mean costs incurred by the City through the date of funding of the O&M and Construction Escrows, not reimbursable under the Cooperative Agreement, and not otherwise reserved by the City, related to:

a. the Newmark and Muscoy OUs; and

b. DTSC/City treatment systems.

Such costs shall include but shall not be limited to: (1) any differential due to the change in location of City wells to accommodate the Site treatment systems; (2) the cost of power incurred due to the requirement that the Site treatment systems be operated on a 24/7 or other schedule that differs from the schedule dictated by the City's production needs; (3) the cost of land used for the Site treatment systems and appurtenances; (4) the cost of comprehensive general liability and property damage insurance related to the Site; (5) the cost of permits required for the Site, including, but not limited to, permits required by the Department of Health Services, the Air Quality Management District, the RWQCB (NPDES permits), and any other state or local permit; and (6) the cost of any item described in Paragraph 14.d, 14.f, 14.g, 14.i or 14.j, to the extent such costs are not reimbursable or exceed the funding limits of this Consent Decree. Such

costs shall also include any costs incurred by the City for the litigation called *City of San Bernardino, Municipal Water Department v. United States, et al.*, CV 96-8867 (MRP), through the date of funding of the O&M and Construction Escrows. Such City Past Response Costs shall not include any City costs related to any other site, including, but not limited to, the Norton Air Force Base Superfund Site.

"Consent Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Consent Decree and any appendix, this Consent Decree shall control.

"Construction Escrow" shall mean the escrow account of that name that is established pursuant to this Consent Decree, including interest or other returns actually earned on that account (irrespective of the statutory rate of Interest, defined below). The Construction Escrow shall be owned and managed by the City for (i) funding construction of treatment and directly related transmission systems that expand the City's capacity to deliver potable water to its residents, and (ii) funding for work performed by the City to complete construction of the Muscoy OU extraction system. For the purposes of this Consent Decree, "funding for work performed by the City to complete construction of the Muscoy OU extraction system" shall mean funding for work performed by the City to complete construction of the five wells and appurtenant facilities denominated as EPA Extraction Wells EW-108, 109, 110, 111 and 112, located at 1396 North Pico Avenue, 1306 North G. Street, 980 Horne Avenue, 1580 W. Virginia Street, and 1335 Garner Avenue, and testing to determine that the Muscoy OU extraction and treatment system is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); provided, however, that (a) completion of construction for these purposes shall mean expenses incurred through completion of acceptance testing up to and including the date the Muscoy extraction and

treatment system is determined to be "operational and functional" under 40 C.F.R. § 300.435(f)(2); and (b) "work performed by the City to complete construction of the Muscoy OU extraction system" shall not include costs incurred by the City to operate, maintain, repair or retrofit components of the Newmark or Muscoy OU extraction and treatment systems that were constructed by EPA.

"Day" shall mean a calendar day unless expressly stated to be a working day. "Working Day" shall mean a day other than a Saturday, Sunday, or federal or State holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next Working Day.

"Department of Toxic Substances Control" or "DTSC" shall mean the California DTSC and any of its successor departments or agencies thereto.

"DTSC Future Response Costs shall mean, all costs incurred by DTSC, subject to DTSC's reservation of rights, after the Effective Date and beginning on the first day of a new month:

a. for the Newmark OU, through 50 (fifty) years after October 1, 2000, the date that the Newmark OU treatment system was determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); and

b. for the Muscoy OU, through 50 (fifty) years after EPA has determined that the Muscoy OU is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2);

c. for the implementation of the Site-Wide Monitoring to be performed by the City pursuant to this Consent Decree, through 50 (fifty) years after EPA has determined that the Muscoy OU is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2).

Such costs shall include, but not be limited to, direct and indirect costs that DTSC incurs in reviewing or developing plans, reports, and other items pursuant to this Consent Decree, verifying the Work, otherwise implementing or overseeing this Consent Decree.

"DTSC Past Response Costs" shall mean all costs incurred by DTSC that are related to the contamination at the Newmark Groundwater Contamination Superfund Site through the date of entry of this Consent Decree.

"Effective Date" shall be the effective date of this Consent Decree as provided in Paragraph 130.

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies thereto.

"Explanation of Significant Differences" or "ESD" shall mean the ESD executed by EPA and attached as Appendix I to this Consent Decree.

"Extraordinary Costs" shall mean costs, other than Oversight Costs, which the United States incurs, including, but not limited to: (1) the costs incurred by the United States to enforce this Consent Decree against the City (including, but not limited to, the cost of attorney time); (2) the costs incurred by the United States pursuant to Paragraph 109 of Section XXI (Work Takeover); (3) the costs incurred by the United States pursuant to Section IX (Access and Institutional Controls) (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls including, but not limited to, the amount of just compensation); (4) costs incurred by the United States pursuant to Section XV (Emergency Response); (5) Oversight Costs incurred by EPA in the event of remedy failure; or (6) the additional costs incurred by the United States in the event that EPA takes over the oversight of the O&M on the Newmark or Muscoy OU or the Site-wide Monitoring pursuant

to Paragraph 110 of this Consent Decree.

"Future Cost Account" shall mean the special account of that name to be established for the Site pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), and Paragraph 60.a.3 of this Consent Decree.

"Future U.S. Response Costs" shall mean, subject to the United States' reservation of rights, all costs incurred by EPA, DOJ and the Settling Federal Agencies:

a. for the Newmark OU, through 50 (fifty) years after October 1, 2000, the date that the Newmark OU treatment system was determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2);

b. for the Muscoy OU, through 50 (fifty) years after EPA has determined that the Muscoy OU is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); and

c. for the implementation of the Site-wide Monitoring to be performed by the City pursuant to this Consent Decree, through 50 (fifty) years after EPA has determined that the Muscoy OU is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2).

Such costs shall include, but not be limited to, direct and indirect costs that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, otherwise implementing or overseeing this Consent Decree, and costs pursuant to Section VII (Remedy Review), including, but not limited to, payroll costs, contractor costs, travel costs and laboratory costs. Future U.S. Response Costs exclude Extraordinary Costs.

"Groundwater Model" or "GW Model" shall mean the groundwater mathematical model of the Newmark Groundwater Superfund Site developed by EPA in connection with the Newmark RI/FS and to be further developed and updated by the City pursuant to this Consent

Decree, including all information and assumptions necessary to apply and maintain the Groundwater Model.

"Interest" (when capitalized in this Consent Decree) shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of Interest shall be the rate in effect at the time the interest accrues. The rate of Interest is subject to change on October 1 of each year.

"Interest Earned" shall mean interest earned on amounts in any special account established pursuant to this Consent Decree, which shall be computed monthly at a rate based on the annual return on investments of the Hazardous Substance Superfund. The applicable rate of interest shall be the rate in effect at the time the interest accrues.

"Interim Remedial Actions" shall mean the interim remedies selected in the Newmark and Muscoy RODs.

"Lead Oversight Agency" shall mean EPA or DTSC, whichever has lead oversight responsibility for the Site or the applicable Work.

a. Except as set forth in subparagraphs (b) and (c) of this definition, DTSC shall be the Lead Oversight Agency for oversight of the O&M of the Work unless EPA, in its unreviewable discretion, gives notice to DTSC and the City that a proposed change in the Work or an EPA-approved schedule, or the manner in which the City is conducting the Work constitutes a fundamental change in the requirements of this Consent Decree. EPA shall be the Lead Agency for reviewing and approving any such fundamental change in the requirements of this Consent Decree or may, in its unreviewable discretion, enforce the previously approved requirements of this Consent Decree.

b. EPA shall be the Lead Oversight Agency for the development, review and approval of any workplan or other document that specifies Work to be performed by the City, which is to be submitted to EPA for approval or developed by EPA pursuant to this Consent Decree, or, if applicable, the Cooperative Agreement. After approval by EPA or entry of this Consent Decree, whichever occurs last, and except as set forth in subparagraphs (a) and (c) of this definition, DTSC shall be the Lead Oversight Agency for oversight of the O&M of the Work. In the event that DTSC or the City proposes, or DTSC approves, any fundamental change in the Work or an EPA-approved schedule, or the manner in which the City is conducting the Work, DTSC shall notify EPA. EPA's concurrence shall be required before any proposed fundamental change may be implemented in the Work or an EPA-approved schedule, or the manner in which the City is conducting the Work.

c. EPA shall be the Lead Oversight Agency for (i) performance of five-year reviews pursuant to Section VII (Remedy Review); (ii) Certification of Completion or Notice of Completion pursuant to Paragraph 57; (iii) performance of any portion of the Work that EPA takes over pursuant to Paragraph 109 or otherwise performs; (iv) implementation of Section XIII (Assurance of Ability to Complete the Work); and (v) enforcement of any obligation of the City to EPA only under this Consent Decree or the Cooperative Agreement. EPA also shall be the Lead Oversight Agency in any action to enforce this Consent Decree or the SOW in the event that a change in the work being performed by the City constitutes a fundamental change to the requirements of the Consent Decree or the SOW, and that such change was made without EPA's concurrence. Without EPA concurrence, any such fundamental change shall not be implemented.

"Lead Oversight" shall mean performance of day-to-day oversight of the Work to ensure

that the City is in compliance with this Consent Decree. Lead Oversight includes, but is not limited to, primary responsibility for reviewing, developing or responding to reports and other items pursuant to this Consent Decree, verifying the Work, which may include periodically inspecting City O&M practices, directing the City in compliance-related matters, otherwise implementing or overseeing this Consent Decree, coordinating with the Support Oversight Agency, responding to public inquiries regarding the Site or the Work, and responding to conditions arising at the Site that require regulatory intervention or assistance. Lead Oversight includes enforcement authority, including but not limited to the imposition of stipulated penalties for failure to comply with this Consent Decree or the SOW.

"Municipal sewage sludge" shall mean any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage, and may include residue removed, all or in part, during the treatment of wastewater from manufacturing or processing operations, provided that such residue has essentially the same characteristics as residue removed during the treatment of domestic sewage.

"Municipal solid waste" shall mean household waste and solid waste collected from non-residential sources that is essentially the same as household waste. While the composition of such wastes may vary considerably, municipal solid waste generally is composed of large volumes of non-hazardous substances (e.g., yard waste, food waste, glass, and aluminum) and can contain small amounts of other wastes as typically may be accepted in RCRA Subtitle D landfills.

"National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Net Present Value" or "NPV" shall mean, as used in this Consent Decree, the dollar value as stated in the applicable provision of the Consent Decree, as adjusted for inflation by an annual average of 3% beginning on January 1, 2003.

"Newmark Groundwater Contamination Superfund Site" shall mean the site listed by EPA on the NPL, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 31, 1989, 54 Fed. Reg. 13296, 13301.

"Operation and Maintenance" or "O&M" shall mean (1) all activities required to operate and to maintain the effectiveness of the Interim Remedial Action at the Newmark OU beginning on the day after the Newmark Interim Remedial Action is determined by EPA to be operational and functional as defined in 40 C.F.R. § 300.435(f)(2); and (2) all activities required to operate and to maintain the effectiveness of the Interim Remedial Action at the Muscoy OU beginning on the day after the Muscoy Interim Remedial Action is determined by EPA to be operational and functional as defined in 40 C.F.R. § 300.435(f)(2). Except to the extent required as part of Non-Routine O&M under the Statement of Work, O&M shall not mean any activities required to construct, operate or maintain the City's potable water supply system after the point of interconnection between the Newmark and/or Muscoy treatment systems and the City's potable water supply system, or any activities required to construct, operate or maintain other extraction and treatment facilities for the City's water supply.

"O&M Escrow" shall mean the escrow account of that name that is established pursuant to this Consent Decree, including interest or other return actually earned on that account (irrespective of the statutory rate of Interest, defined above). The O&M Escrow shall be owned and managed by the City, and shall be used for (i) O&M of the Site, including Non-Routine O&M expenses as described in the Statement of Work; (ii) development and management of the

Groundwater Model, provided, however that such amount, combined with any expenditures to implement Section IX (Access and Institutional Controls) shall not exceed $ 1,000,000 (one million) net present value ("NPV"); (iii) implementation of access and institutional controls as provided in Section IX (Access and Institutional Controls), Paragraphs 27-30, 32 and 33 of this Consent Decree, provided, however, that such amount, combined with any expenditures to develop and manage the Groundwater Model, shall not exceed $ 1,000,000 (one million dollars) NPV; (iv) the Site-wide Monitoring; (v) related activities as specified in this Consent Decree or any of its appendices; (vi) repair or retrofit of the Newmark or Muscoy OU extraction or treatment systems required by the Lead Oversight Agency during O&M, provided that the City reserves the right to contend that any such repair or retrofit is the fault of EPA or a third party; and (vii) five year review activities requested by EPA. The O&M Escrow shall not be used by the City for any other purpose.

"Oversight Costs" shall mean all direct and indirect costs that the United States and DTSC incur in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, otherwise implementing or overseeing this Consent Decree, and costs pursuant to Section VII (Remedy Review), including, but not limited to, payroll costs, contractor costs, travel costs and laboratory costs. Oversight Costs shall not include Extraordinary Costs.

"Paragraph" shall mean a portion of this Consent Decree identified by an Arabic numeral or an upper case letter.

"Parties" shall mean the United States, DTSC and the City.

"Past U. S. Response Costs" shall mean all costs that are incurred by EPA, DOJ and the Settling Federal Agencies that are related to the Newmark and Muscoy OUs up to the date each

OU is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), plus O&M of the Newmark OU extraction and treatment system through September 30, 2002; and for the Source Control OU up to the date of issuance of the Proposed Plan for the Source Control OU. Such costs shall also include any and all costs incurred by the United States for the litigation styled, *City of San Bernardino, Municipal Water Department v. United States Army, et al.,* CV 96-8867 (MRP) and *State of California v. United States Army, et al,* CV 96-5205 (MRP) through the date of entry of this Consent Decree.

"Performance Standards" shall mean the cleanup standards and other measures of achievement of the goals of the Interim Remedial Actions set forth in the Newmark and Muscoy OU RODs and the ESD, and the Work requirements of this Consent Decree and the SOW, including but not limited to (1) the extraction and treatment of volatile organic compounds in the extracted groundwater in the amounts and according to the specifications described in the RODs, the O&M Plans, and the SOW to inhibit effectively the migration of volatile organic compounds beyond the barrier wells and to meet all federal and State drinking water permit standards; (2) the acceptance of the extracted, treated water by the City into its potable water supply, provided that the water meets all federal and State permit requirements for drinking water; and (3) the effective implementation of institutional controls established by the ESD to protect the barrier well systems.

"RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 et seq. (also known as the Resource Conservation and Recovery Act).

"Records of Decision" or "RODs" shall mean the EPA Records of Decision relating to the Newmark OU signed on August 4, 1993 and relating to the Muscoy OU signed on March 24, 1995 by the Regional Administrator, EPA Region 9, or his/her delegatee, and all attachments

thereto; and the Explanation of Significant Differences signed by the Regional Administrator, EPA Region 9, or his/her delegatee, and all attachments thereto. The Newmark and Muscoy OU RODs are referred to herein as the Newmark ROD and the Muscoy ROD, respectively, and are attached as Appendices A and B. The Explanation of Significant Differences is attached as Appendix I.

"Section" shall mean a portion of this Consent Decree identified by a roman numeral.

"Settling Federal Agencies" shall mean the United States Department of the Army and any other federal agencies that are resolving any claims which have been or which could have been asserted against them with regard to the Site as provided in this Consent Decree, or that may have liability for the Site or the Site-wide Monitoring.

"Site" shall mean the Newmark and Muscoy OUs of the Newmark Groundwater Contamination Superfund Site, located in the City and County of San Bernardino, California, and depicted generally on the map attached as Appendix C. The Site does not include any other OUs in the Newmark Groundwater Contamination Superfund Site or any areas outside of the Newmark Groundwater Contamination Superfund Site.

"Site-wide Monitoring" shall mean the monitoring program specified in the SOW for the Newmark Groundwater Contamination Superfund Site.

"Source Control Operable Unit" or "Source Control OU" shall mean the operable unit for the investigation and remediation of sources of contamination in the Newmark Groundwater Contamination Superfund Site.

"State" shall mean the State of California, including its agencies, departments and instrumentalities and any successor agencies, departments and instrumentalities.

"Statement of Work" or "SOW" shall mean the statement of work for implementation of

the Newmark and Muscoy RODs and the Site-wide Monitoring as set forth in Appendix D to this Consent Decree and any modifications made in accordance with this Consent Decree.

"Supervising Contractor" shall mean either the City of San Bernardino Municipal Water Department or the principal contractor retained by the City to supervise and direct the implementation of the portion of the Work under this Consent Decree for which the City is responsible.

"Support Oversight Agency" shall mean EPA or DTSC, whichever has Support Oversight responsibility for the Work or some component of the Work.

"Support Oversight" shall mean performance of secondary oversight of the Work to ensure that the City is in compliance with this Consent Decree. Support Oversight includes, but is not limited to, secondary responsibility for reviewing, developing or responding to plans, reports and other items pursuant to this Consent Decree, verifying the Work, which may include periodically inspecting City O&M practices, directing the City in compliance-related matters, otherwise implementing or overseeing this Consent Decree, coordinating with the Lead Oversight Agency, responding to public inquiries regarding the Site or the Work, and responding to conditions arising at the Site that require regulatory intervention or assistance.

"United States" shall mean the United States of America, including all of its agencies, departments and instrumentalities and any successor agencies, departments and instrumentalities thereto.

"USACE" shall mean the United States Army Corps of Engineers, including its departments or instrumentalities or any successor departments or instrumentalities, which is that department of the United States Army that has been designated responsible for Formerly Used Defense Facilities.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous material" under California Health & Safety Code § 25501(o).

"Work" shall mean all activities that the City is required to perform under this Consent Decree, except those required by Section XXV (Retention of Records).

V. GENERAL PROVISIONS.

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment at the Site by the design and implementation of response actions at the Site by the Parties, to reimburse in part the response costs of EPA and DTSC, and to resolve the claims of the Parties against each other with respect to the Site and the Work.

6. Commitments by the Parties.

a. The City shall finance and/or perform the Work in accordance with this Consent Decree, the RODs, the ESD, the SOW, and all work plans and other plans, standards, specifications, and schedules set forth herein or developed by the City and approved by EPA pursuant to this Consent Decree. The City shall complete the construction of the Muscoy Operable Unit extraction system, first using $ 6,249,000 currently obligated by EPA for that purpose, and then using other funds, which the City may withdraw from the Construction Escrow.

b. EPA funded the construction of the Newmark Operable Unit extraction and treatment system, and has funded the O&M of the Newmark Operable Unit up to the date of entry of this Consent Decree. EPA has obligated $ 6,249,000 to complete the construction of the

Muscoy Operable Unit extraction and treatment system. Subject to the continued availability of this federal funding, EPA shall fund the construction of the Muscoy Operable Unit extraction and treatment system, using the currently obligated $ 6,249,000. Provided, however, that the City shall fund all activities that are necessary to correct deficiencies in the portion of such construction activities performed by the City, including, but not limited to, acceptance testing that lasts more than one year. EPA and the City each reserve the right to contend that each other or a third party should be responsible for any particular cost item.

c. The Settling Federal Agencies shall finance portions of the Work as provided in Section XVI (Payments for Response Costs). The City and the Settling Federal Agencies shall also reimburse the United States and DTSC for certain DTSC Past Response Costs, Past U.S. Response Costs and certain other response costs as provided in this Consent Decree. DTSC shall perform oversight as provided in Paragraph 15.

7. Compliance With Applicable Law. All activities undertaken by the Parties pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. The Parties must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the RODs and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, or, if applicable, DTSC, shall be considered to be consistent with the NCP.

8. Permits.

a. As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any

portion of the Work to be performed by the City that is not on-site requires a federal or state permit or approval, the City shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals. Where any state permit or approval is required, DTSC shall assist the City in any manner that is practicable to obtain such permits or approvals. Such assistance shall include coordination with other State agencies, including intervention on the City's behalf if appropriate.

b. The City may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work, where the City has complied with Paragraph 8.a.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

9. Notice to Successors-in-Title.

a. With respect to any real property owned or controlled by the City that contains stationary extraction and treatment system equipment, extraction wells, pumps, monitoring wells or other stationary equipment used as part of the Newmark or Muscoy OU, or the Site-wide Monitoring, within 15 (fifteen) days after the entry of this Consent Decree, the City shall submit to EPA for review and approval a notice to be filed with the Recorder's Office, San Bernardino County, State of California, which shall provide notice to all successors-in-title that the property is part of the Site, that EPA selected interim remedies for the Site in the Newmark ROD, executed on August 4, 1993, and in the Muscoy ROD, executed on March 24, 1995, and in the ESD, and that the Parties have entered into a Consent Decree requiring implementation of the Interim Remedial Actions. The Notice shall identify the action as being filed in the United States

District Court for the Central District of California, the case numbers, the parties and the date this Consent Decree was entered by the Court. The City shall record the notice(s) within 10 (ten) days of EPA's approval of the notice(s). The City shall provide EPA and DTSC with a certified copy of the recorded notice(s) within 10 (ten) days of recording such notice(s). The notice need not detail any real property containing pipelines and appurtenant facilities located beneath public streets.

b. At least 30 (thirty) days prior to the conveyance of any interest in real property owned or controlled by the City (other than public streets), that is referred to in the notice recorded under Paragraph 9.a., including, but not limited to, fee interests, leasehold interests, and mortgage interests, the City shall give the grantee written notice of (i) this Consent Decree, (ii) any instrument by which an interest in real property has been conveyed that confers a right of access to the Site (hereinafter referred to as "access easements") pursuant to Section IX (Access and Institutional Controls), and (iii) any instrument by which an interest in real property has been conveyed that confers a right to enforce restrictions on the use of such property (hereinafter referred to as "restrictive easements") pursuant to Section IX (Access and Institutional Controls). At least 30 (thirty) days prior to such conveyance, the City shall also give written notice to EPA and DTSC of the proposed conveyance, including the name and address of the grantee, and the date on which notice of the Consent Decree, access easements, and/or restrictive easements was given to the grantee. For the purposes of providing the notice required by this subparagraph b, the City may furnish potential grantees with a preliminary title report issued by a title company transacting business in California, provided such preliminary title report includes the information required to be conveyed by this subparagraph. The

obligation to provide the notice required by this subparagraph shall terminate when the obligations of the City pursuant to this Consent Decree with respect to the subject portions of the Interim Remedial Actions are completed.

c. In the event of any such conveyance, the City's obligations under this Consent Decree, including, but not limited to, its obligation to provide or secure access and institutional controls, as well as to abide by such institutional controls, pursuant to Section IX (Access and Institutional Controls) of this Consent Decree, shall continue to be met by the City. In no event shall the conveyance release or otherwise affect the liability of the City to comply with all provisions of this Consent Decree, absent the prior written consent of EPA. If the United States approves, the grantee may perform some or all of the Work under this Consent Decree.

VI. PERFORMANCE OF THE WORK.

10. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by the City pursuant to Sections VI (Performance of the Work), VII (Remedy Review), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Decree shall be under the direction and supervision of the Supervising Contractor, the selection of which shall be subject to disapproval by the Lead Oversight Agency after a reasonable opportunity for review and comment by the Support Oversight Agency.

b. EPA has approved the City's Municipal Water Department as the City's Supervising Contractor, and DTSC concurs. If at any time after entry of this Consent Decree, the City proposes to change the Supervising Contractor, the City shall give such notice to the Lead and Support Oversight Agencies, and must obtain an

authorization to proceed from the Lead Oversight Agency, after a reasonable opportunity for review and comment by the Support Oversight Agency, before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Decree.

c. If the Lead Oversight Agency disapproves a proposed Supervising Contractor, the Lead Oversight Agency will notify the Parties in writing. In that event, the City shall submit to EPA and DTSC a list of contractors, including their qualifications, that would be acceptable to the City within 30 (thirty) days of receipt of the Lead Oversight Agency's disapproval of the contractor previously proposed. The Lead Oversight Agency, after a reasonable opportunity for review and comment by the Support Oversight Agency, will provide written notice of the names of any contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. The City may select any contractor from that list that is not disapproved and shall notify EPA and DTSC of the name of the contractor selected within 21 (twenty-one) days of the Lead Oversight Agency's authorization to proceed.

d. If the Lead Oversight Agency fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents the City from meeting one or more deadlines in a plan approved or developed by EPA pursuant to this Consent Decree or the Cooperative Agreement, the City may seek relief under the provisions of Section XVIII (Force Majeure) hereof.

11. Remedial Design. EPA performed and paid for the remedial design for the Interim Remedial Action at the Newmark OU, and is performing and paying for the remedial design for the Interim Remedial Action at the Muscoy OU, including the development and implementation of Remedial Design Work Plans and Health and Safety

Plans for field design activities which conform to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

12. Interim Remedial Action. EPA developed and is paying for the Interim Remedial Actions for the Site. EPA has implemented the Newmark OU Interim Remedial Action Work Plan. Any work plan for implementation of the Muscoy OU Interim Remedial Action is incorporated into this Consent Decree. EPA also developed Health and Safety Plans for field activities required by the Interim Remedial Action work plans that conform to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120. The Health and Safety Plans for field activities required by the Muscoy Remedial Action Work Plan are incorporated into this Consent Decree.

a. EPA shall implement the Muscoy Remedial Design Work Plan. Unless approved by EPA, the City shall not conduct physical Interim Remedial Action activities at the Site.

b. Nothing in this Consent Decree shall prohibit EPA in its unreviewable discretion from revising the Muscoy Remedial Action Work Plan or any other work plan to be implemented in accordance with CERCLA and the NCP. However, the City's obligations, if any, to fund such revisions or perform work in accordance with such revisions shall be governed by the terms of this Consent Decree and the SOW.

13. The City shall implement the O&M and other Work, as more particularly set forth in Paragraph 14 of this Consent Decree (City Obligations), the RODs, the SOW and the ESD, until the Performance Standards are achieved and for so long thereafter as is

otherwise required under this Consent Decree.

14. City Obligations.

a. City O&M Obligations

(1) The City shall perform the O&M on the Newmark and Muscoy OUs (including the development of the Groundwater Model and the groundwater management program) and the Site-wide Monitoring referenced in this Consent Decree consistent with the RODs, the ESD and the SOW, and shall achieve the Performance Standards, until the earliest of (1) final Certification of Completion under Paragraph 57.d (Certification of Completion); (2) final Notice of Completion under Paragraph 57.e; (3) with respect to the Newmark OU, fifty (50) years after October 1, 2000; (4) with respect to the Muscoy OU, fifty (50) years after the Muscoy OU is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); (5) with respect to the Site-wide Monitoring, fifty (50) years after the Muscoy OU is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2); and (6) with respect to the implementation of institutional controls, including but not limited to the groundwater management and permit program described in Paragraphs 27-30, fifty (50) years after entry of this Consent Decree.

(2) After O&M is completed as described in Paragraph 14.a.1, the City may decommission the extraction and treatment systems under the direction of the Lead Oversight Agency, after a reasonable opportunity for review and comment by the Support Oversight Agency, and may fund such activities from the O&M Escrow. If the City elects to continue the operation of the extraction and treatment systems rather than decommission them after O&M is completed as described in Paragraph 14.a.1, then the

City shall bear the expense of any such operation and maintenance and any later de-commissioning of these systems out of financial resources other than the O&M Escrow or the Construction Escrow.

(3) After the entry of this Consent Decree and before funding of the O&M Escrow pursuant to Paragraph 60.a of this Consent Decree, the City shall be entitled to reimbursement for O&M Escrow-covered costs from the Cooperative Agreement, provided, however, that the City shall reimburse EPA for any such amounts upon funding of the O&M Escrow. With respect to work undertaken by the City prior to entry of this Consent Decree in order to prepare the deliverable items listed on the deliverable schedule of the SOW, once the O&M Escrow is funded, the City shall be entitled to reimbursement from the O&M Escrow for such work as an allowable expense, unless such expense has been reimbursed to the City under the Cooperative Agreement and is not required to be reimbursed to EPA pursuant to this Consent Decree.

b. The City shall implement and fund the following items at its own expense: (1) except during periods of production in excess of the Maximum Routine Extraction Rates in order to comply with the Statement of Work, the differential, if any, due to the change in location of City wells to accommodate the Site treatment systems; (2) the cost of power incurred due to the requirement that the Site treatment systems be operated on a 24/7 or other schedule that differs from the schedule dictated by the City's production needs; (3) the cost of land used for the Site treatment systems and appurtenances; (4) the cost of comprehensive general liability and property damage insurance related to the Site; (5) the cost of permits required for the Site, including, but not limited to, permits required by the Department of Health Services, the Air Quality

Management District, the RWQCB (NPDES permits), and any other state or local permit; (6) the cost of any item described in Paragraph 14.d, 14.f, 14.g, 14.i or 14.j. to the extent the cost of any such item is not reimbursable or exceeds the funding limits established by this Consent Decree; (7) the cost of developing, updating and maintaining the Groundwater Model and implementing the groundwater management and permit program described in Paragraphs 27-30 to the extent such costs are not reimbursable or exceed the funding limits established in this Consent Decree; and (8) the repair or retrofit of components of the Newmark or Muscoy extraction and treatment systems or any delay in acceptance testing that is the fault of the City, provided, however, that such claims must be raised in writing by the Lead or Support Oversight Agency prior to EPA's certification that the extraction system in question is operational and functional.

c. The City shall be reimbursed for the costs of O&M (including Non-Routine O&M costs as defined in the SOW that are not reimbursed to the City by insurance), Site-wide Monitoring, work requested by EPA in support of five year reviews pursuant to Section VII, Paragraph 20, and certain costs of managing the Groundwater Model and implementing institutional controls up to the monetary limits of the O&M Escrow, including interest earned thereon; provided, however, that:

(1) Amounts funded from the O&M Escrow to develop, update and maintain the Groundwater Model, and to implement Section IX (Access and Institutional Controls), Paragraphs 27-30, 32 and 33 collectively shall not exceed $1,000,000 (one million dollars) NPV; and

(2) The O&M Escrow may not be used to fund the following cost items: (a) any item described in Paragraph 14.b, except for (i) the use of DTSC-

constructed or City-constructed treatment systems during a maintenance outage of the EPA-constructed treatment system, while the water produced by the Newmark or Muscoy extraction systems is sent to the DTSC- or City-constructed treatment systems during such an outage, to the extent that the water treated in the DTSC- or City-constructed treatment systems during such an outage is the same water that would otherwise have been treated in the EPA-constructed treatment system, in accordance with the procedures of the SOW, and (ii) for the use of DTSC- or City-constructed treatment systems as part of non-routine O&M required by the Lead Oversight Agency; (b) Extraordinary Costs, except the costs of reimbursing EPA for work performed pursuant to a Work Takeover under Paragraph 109; (c) penalties pursuant to this Consent Decree; (d) costs incurred pursuant to Paragraph 109 of this Consent Decree (Work Takeover), except the costs of reimbursing EPA for work performed pursuant to a Work Takeover under Paragraph 109 of this Consent Decree; (e) costs found to be unallowable after a finally adjudicated audit under OMB Circular A-133; (f) any cost excluded from disbursement under Paragraph 71.a., unless such cost is expressly authorized by the Cooperative Agreements, this Consent Decree or the SOW; (g) the costs of implementing Paragraphs 27-30, 32 and 33 of this Consent Decree, to the extent such costs exceed the funding limits established by this Consent Decree; (h) any cost that is not O&M of the Newmark and Muscoy OUs, implementation of Section IX of this Consent Decree (Access and Institutional Controls), Groundwater Modeling and updates, work to support Five-year Reviews or Site-wide Monitoring; and except as the Lead Oversight Agency, with the concurrence of the Support Agency, agrees otherwise (i) the repair or retrofit of components of the Newmark or Muscoy OU extraction and treatment systems that are the fault of the City, provided, however, that any such claims

must be made by the Lead or Support Oversight Agency in writing prior to EPA's certification that the extraction and treatment system in question is operational and functional.

d. The City shall complete the construction of the Muscoy OU extraction system as specified in the Cooperative Agreement. In addition to the $6,249,000 in funding provided under the Cooperative Agreement, the City may use money from the Construction Escrow to fund such construction, provided, however, that work performed by the City to complete the construction of the Muscoy OU extraction system shall not include costs incurred by the City to operate, maintain, repair or retrofit components of the Newmark or Muscoy OU extraction and treatment systems that were constructed by EPA.

e. Pursuant to the Cooperative Agreement, as of the date of entry of this Consent Decree, EPA has already obligated $6,249,000 of appropriated money to complete construction of the Muscoy extraction system. The City, as part of this settlement, will continue the construction work on the Muscoy extraction system, first using the $6,249,000 under the Cooperative Agreement, and if that funding is exhausted before the extraction system is determined to be operational and functional, the City shall be entitled to draw down the Construction Escrow in order to complete that work.

f. Until final Certification of Completion of the O&M as provided for in Paragraph 57.d or final Notice of Completion as provided for in Paragraph 57.e, the City shall perform any necessary construction related to the expansion of the existing extraction and treatment systems constructed by DTSC and any City-owned or other City-operated treatment plants and transmission systems to expand the City's potable water

delivery capacity. A proposed schedule for such construction is attached to this Consent Decree as Appendix E. The City shall be entitled to fund the construction of such work with the Construction Escrow, but shall be responsible for any additional construction costs after the Construction Escrow is exhausted.

g. Until final Certification of Completion of the O&M as provided for in Paragraph 57.d or final Notice of Completion as provided for in Paragraph 57.e on the Newmark and Muscoy OUs, the City shall perform the operation and maintenance of any expansion systems and any other City or DTSC extraction and treatment systems referred to in Paragraph 14.f and shall be responsible for all such costs. Provided, however, that in the maintenance outage or non-routine O&M situations referred to in Paragraph 14.c(2)(a) of this Consent Decree, the City may draw upon the O&M Escrow to pay for such costs.

h. Until final Certification of Completion of the O&M as provided for in Paragraph 57.d or final Notice of Completion as provided for in Paragraph 57.e on the Newmark and Muscoy OUs, the City shall perform Site-wide Monitoring as specified in the SOW. The City shall be reimbursed for the costs of such monitoring up to the monetary limits of the O&M Escrow.

i. In accordance with Section IX of this Consent Decree (Access and Institutional Controls), the City shall adopt and implement a groundwater management and permit program governing: (1) the installation of new wells in the Permit Zone (as defined in Paragraph 27.a); (2) the reconstruction of existing wells in the Permit Zone to increase the capacity of such wells; and (3) the increased spreading of water in spreading basins within the City and upgradient of the Newmark and Muscoy extraction and treatment

systems. Where not provided as part of permit requirements, the City shall secure such additional access and institutional controls, including those necessary to ensure that the Newmark and Muscoy Interim Remedial Actions' effectiveness is not compromised by increased well production or groundwater management practices such as increased spreading of water. The City shall be entitled to seek reimbursement for certain costs associated with the implementation of the institutional controls in accordance with this Paragraph from the O&M Escrow.

j. The City shall develop, apply and maintain the Groundwater Model, and seek and use its best efforts to obtain water level and water quality data that EPA determines is necessary to develop and update the Groundwater Model. The City also shall obtain other data and conduct studies requested by EPA in support of five year reviews pursuant to Paragraph 20 of this Consent Decree. The City shall be entitled to seek reimbursement from the O&M Escrow for the costs (including consultants' and staff time) associated with these data gathering efforts and studies and for developing, applying and maintaining the Groundwater Model, up to the funding limits established by this Consent Decree.

k. When EPA transfers responsibility for maintaining the Groundwater Model to the City in accordance with the SOW, the City shall assume the responsibility for maintaining the Groundwater Model in accordance with the schedule and specifications of the SOW.

l. The City and DTSC shall refrain from taking or supporting any action individually, or jointly with any other authority, that would interfere with or otherwise be inconsistent with the requirements of the Newmark and Muscoy RODs, the

ESD, the SOW and this Consent Decree.

15. DTSC/EPA Lead Oversight Agency Obligations. DTSC shall perform as the Lead Oversight Agency for the O&M of the Work performed under this Consent Decree, except as set forth herein. EPA shall perform as the Lead Oversight Agency for the Newmark and Muscoy OUs up to and including the date that EPA determines that such OU is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), or until entry of this Consent Decree, whichever occurs later, and as otherwise set forth herein.

16. United States/EPA Obligations.

a. The United States, on behalf of the Settling Federal Agencies, shall make the payments described in Section XVI of this Consent Decree (Payments for Response Costs).

b. Upon entry of this Consent Decree, the ownership of the Newmark and Muscoy extraction and treatment systems and appurtenant facilities ("such systems") shall be transferred to the City of San Bernardino Municipal Water Department by the United States. Until such transfer is made, the United States shall bear the risk of any loss or damage to such systems. After such transfer of ownership, the City shall bear the risk of any loss or damage to and shall maintain reasonable insurance coverage on such systems to protect against damage or loss of them arising from insurable risks, as provided in Section XVII (Indemnification and Insurance) of this Consent Decree.

c. The United States shall cooperate in the defense of any claim against the United States that is subject to the indemnity described in Paragraph 74.b of this Consent Decree in accordance with the requirements of that Paragraph and pursuant to Paragraph 1.b shall cooperate in the defense of the Interim Remedial Actions, permit

program and permit decisions.

17. Modification of the SOW or Related Work Plans.

a. If EPA or DTSC determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or otherwise to carry out and maintain the effectiveness of the remedies set forth in the RODs, EPA or DTSC may require that such modification be incorporated in the SOW or such work plans. Provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is consistent with the scope of the interim remedies selected in the RODs.

b. For the purposes of this Paragraph 17 and Paragraph 57.c, the "scope of the interim remedies selected in the RODs" is: the work necessary for the effective implementation of the Newmark and Muscoy OU selected interim remedies as set forth in the Newmark and Muscoy RODs, the implementation of institutional controls as provided in the ESD, and the work necessary for the effective monitoring of the Newmark Groundwater Contamination Superfund Site. The "scope of the interim remedies selected in the RODs" shall include any necessary and appropriate adjustments, measures or actions to ensure the effectiveness of the Newmark and Muscoy OU extraction systems and barrier well systems, except activities that are (1) required to be documented in an amendment to a ROD under the NCP; or (2) that require the City to expand its untreated water transmission capacity.

c. Provided, however, that (1) the City shall undertake Non-Routine O&M as required pursuant to this Consent Decree and the SOW, but that the total cost of such Non-Routine O&M shall not, over the life of the Work required by this Consent

Decree and the SOW, exceed $20,000,000 (twenty million dollars) NPV if reimbursed to the City by insurance. While such insurance is in force, the City shall not be required to contribute to the costs of Non-Routine O&M beyond the amount of any applicable copayments or deductibles; and (2) for any time period for which there is no insurance, the City shall be required to contribute to the costs of Non-Routine O&M up to the following amounts. The total spent by the City that is not reimbursed by insurance for Non-Routine O&M shall not, over the life of the Work required by this Consent Decree and the SOW, exceed $10,000,000 (ten million dollars) NPV, which may be drawn from the O&M and Construction Escrows, plus an additional amount, up to $5,000,000 (five million dollars) NPV, representing the sum of (a) the cumulative net actual savings on O&M and construction realized by the City from the estimated annual O&M costs, and (b) the portion of cumulative net water sale proceeds to be returned for the benefit of the O&M Escrow by the City pursuant to the SOW. (The sum of (a) and (b) shall be referred to as the Contingency Account.) This limit shall be referred to as the "Uninsured Limit." Any co-pay or deductibles paid by the City under applicable insurance may be charged against this Uninsured Limit.

d. Provided further, that the City shall use its best efforts to procure insurance at commercially reasonable rates to cover the costs of Non-Routine O&M up to an aggregate of $20,000,000 (twenty million dollars) NPV over the life of this Consent Decree. The City may determine, however, through the process set forth in the SOW, with the concurrence of the Lead and Oversight Agencies, that such insurance is unavailable at commercially reasonable rates, not cost-effective, or that such insurance is otherwise inappropriate. In the event of such a determination, the City shall not be obliged to

purchase such insurance.

e. If the City objects to any modification determined by EPA or DTSC to be necessary pursuant to this Paragraph, the City may seek dispute resolution pursuant to Section XIX (Dispute Resolution), Paragraph 85 (Record Review). The SOW and/or related work plans shall be modified in accordance with final resolution of the dispute.

f. The City shall implement any work required by any modifications incorporated in the SOW and/or in work plans developed pursuant to the SOW in accordance with this Paragraph.

g. Nothing in this Paragraph shall be construed to limit EPA's or DTSC's authority to require performance of further response actions as otherwise provided in this Consent Decree.

18. The Parties acknowledge and agree that nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by EPA or DTSC that compliance with the work requirements set forth in this Consent Decree, the SOW and the Work Plans will achieve the Performance Standards. The Parties believe that the performance of the Work will help reduce the risk of public exposure to the groundwater contamination and reduce and inhibit the spread of groundwater contamination from its current locations at the Site.

19. The City shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA and DTSC Project Coordinators of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of

all such shipments will not exceed 10 (ten) cubic yards.

a. The City shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The City shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by the City at least 30 (thirty) days prior to shipment. The City shall provide the information required by Paragraph 19.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

VII. REMEDY REVIEW

20. Periodic Review. The City shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews of whether the Interim Remedial Actions are protective of human health and the environment, at least every 5 (five) years as required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations. EPA and the City will seek to avoid duplicative sampling and laboratory work, and to the extent feasible, will seek to consolidate the five-year reviews of the Newmark and Muscoy OUs.

21. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Interim Remedial Actions are not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the

requirements of CERCLA and the NCP.

22. Opportunity To Comment. The Parties and, if required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. §§ 9613(k)(2), 9617, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA , 42 U.S.C. § 9621(c), and to submit written comments for the record during the comment period.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

23. Samples taken within the Newmark and Muscoy treatment systems for ongoing process control purposes and for the purpose of complying with Department of Health Services permits or equivalent state authorizations shall comply with the procedures, including QA/QC procedures, referenced in the permits and any additional procedures required pursuant to the SOW. The City shall use quality assurance, quality control, and chain of custody procedures for all other treatability, design, compliance and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operation," (EPA QA/R5); "Preparing Perfect Project Plans," (EPA /600/9-88/087), and subsequent amendments to such guidelines. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Decree, the City shall submit to EPA for approval, after a reasonable opportunity for review and comment by DTSC, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding

under this Consent Decree. The City shall ensure that EPA and DTSC personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by the City in implementing this Consent Decree. In addition, the City shall ensure that such laboratories shall analyze all samples submitted by the Lead Oversight Agency pursuant to the QAPP for quality assurance monitoring. The City shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Consent Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" and the "Contract Lab Program Statement of Work for Organic Analysis," dated February 1988, and any amendments made or applicable thereto during the course of the implementation of this Consent Decree. The City shall ensure that all laboratories the City uses for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. The City shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Consent Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

24. Upon request, the City shall allow split or duplicate samples to be taken by EPA and DTSC or their authorized representatives. Unless shorter notice is agreed by EPA, the City shall notify EPA and DTSC not less than 28 (twenty-eight) days in advance of any sample collection activity, other than ongoing process control sampling and sampling for the purpose of complying with Department of Health Services permits, as to which the City shall provide such notice to EPA and DTSC as specified in the SOW. In addition, EPA and DTSC shall have the right to take any additional samples that EPA or

DTSC deems necessary. Upon request, EPA and DTSC shall allow the City to take split or duplicate samples of any samples they take as part of their oversight of the City implementation of the Work.

25. The City shall submit to EPA and DTSC each 2 (two) copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of the City with respect to the Site and/or the implementation of this Consent Decree unless EPA or DTSC agrees otherwise.

26. Notwithstanding any provision of this Consent Decree, the United States and DTSC hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS.

27. Groundwater Management and Permit Programs. In order to ensure the effectiveness and integrity of the Interim Remedial Actions, and to implement the ESD, the City shall, within 30 (thirty) days of entry of this Consent Decree:

a. institute a groundwater management program whereby the City shall monitor and, where warranted by the City's best professional judgment, and, if available, the Groundwater Model, in consultation with EPA and DTSC, take appropriate actions to prevent or mitigate (1) the installation and expansion of production wellfields and spreading basins and the re-equipping of existing wells if such wells are located within the City limits in the zone which may affect the effectiveness and integrity of the Interim Remedial Actions ("Permit Zone"), as determined by EPA. If the City objects to EPA's determination of the Permit Zone, the City may seek dispute resolution pursuant to Section

XIX (Dispute Resolution), Paragraph 85 (Record Review); (2) the increase of the annual volume of water spread in the Waterman Canyon, Devil's Canyon, and Badger Canyon spreading basins; and (3) the construction of any new spreading basins within City limits located upgradient of the Newmark and Muscoy treatment systems;

b. initiate the City legislative process for approval and adoption of a groundwater management program consistent with the requirements of Paragraphs 27.c, 27.d and 28 that requires specific, advance written approval from the City (which approval shall be based on the City's best professional judgment in consultation with EPA and DTSC) in order to (1) install new wells or to reconstruct existing wells in a manner which increases their capacity if such wells are located within the Permit Zone; (2) increase the annual volume of water spread in the Waterman Canyon, Devil's Canyon, and Badger Canyon spreading basin; or (3) construct any new spreading basins with the City limits located upgradient of the Newmark and Muscoy treatment systems;

c. submit to EPA a plan proposing to define the Permit Zone and for a well permit program to require applicants for permits to drill new wells or to reconstruct existing wells to increase production capacity to demonstrate and certify, using the Groundwater Model, that the proposed new or reconstructed well, at its maximum production, will not interfere with or adversely affect the integrity of the Newmark and Muscoy extraction and treatment systems, will not increase the likelihood that contaminants will migrate past or around the barrier wells that are part of those systems, and will not otherwise interfere with the performance of the Interim Remedial Actions; and

d. submit to EPA a plan for a permit program to regulate the spreading

of water in the spreading basins located within City limits that are upgradient of the Newmark and Muscoy extraction and treatment systems. This program shall address, at a minimum, the spreading basins located at Devil's Canyon, Waterman Canyon and Badger Canyon, and any expansion or replacement of these basins, and any additional basins constructed before the completion of the Work provided for in this Consent Decree. The regulation of spreading activities shall be directed to assuring that any spreading of water in these basins shall not interfere with or adversely affect the integrity of the Newmark and Muscoy Interim Remedial Actions. The permit program will accommodate the use of these basins for flood control purposes in order to protect public safety and to assure proper operation of the City's supply wells and of all treatment systems.

Upon approval by EPA pursuant to Section XI (EPA Approval of Plans and Other Submissions), the City shall implement the permit program.

28. In addition to the above-described conditions on permit issuance, the City shall condition the issuance of any permit issued under the permit programs described in this Section on the grant of a right for EPA, DTSC and the City, including their contractors and representatives, (1) of access at reasonable times to the wells or spreading basins or related areas for the purpose of verifying compliance with the permit; and (2) upon reasonable notice to inspect and copy documents and records of the operations of the permitted facilities in order to verify compliance with the permit. Nothing in this Paragraph shall limit EPA's or DTSC's respective statutory and regulatory authorities, including, but not limited to, the authority to obtain access to real property.

29. During the period, if any, after adoption of the permit program and before the completion of the adaptation of the Groundwater Model for the permitting program,

the City may, with the written concurrence of the Lead Oversight Agency, after reasonable opportunity for review and comment by the Support Oversight Agency, issue a permit allowing the re-equipping or installation of a well on the basis of best professional judgment, based on available evidence satisfactory to the Lead and Oversight Agencies and the City, that the proposed re-equipping or installation of the well will not have an adverse effect on the Interim Remedial Actions. During this period, the City also shall continue to implement the groundwater management program described in Paragraph 27.a. Once the groundwater management and permit programs specified in Paragraphs 27.b, c and d, and Paragraph 28 are implemented, the groundwater management program described in Paragraph 27.a may be terminated.

30. The permit programs described in Paragraphs 27 and 28 shall require that, simultaneous with the filing of a permit application or certification, the permit applicant shall provide EPA and DTSC with copies of any such permit application or certification, together with supporting documentation. EPA and DTSC shall also be provided with the City's proposed permit decision and any modeling or other information on which it is based. After receipt of the application or certification and proposed permit decision and all supporting documentation, the Lead and Support Oversight Agencies shall have a minimum of 30 (thirty) days in which to comment to the City in writing upon any such application or certification and the proposed decision, but in no circumstances shall a failure to comment within 30 (thirty) days of receipt of such information, or any other time period be deemed to be concurrence on the part of the Lead and/or Support Agency. If the Lead or Support Oversight Agency objects to a permit application, certification, proposed decision, or to the modeling work or other documentation on which a proposed permit

decision is based, the Lead and/or Support Oversight Agency, as the case may be, and the City shall consult for up to 60 (sixty) days in order to resolve any material differences between or among them over such matters. The City shall not issue a permit over the unresolved objections of the Lead or Support Oversight Agency.

31. The City shall defend, indemnify, save and hold harmless the United States and DTSC for any claims that result from the institution and/or implementation of the groundwater management or permitting programs as provided in Paragraph 74.b.

32. If the Site, or any other property where access and/or land/water use restrictions (other than those provided in the permit program in Paragraphs 27-30) are needed to implement this Consent Decree, is owned or controlled by any of the Parties, such Parties shall:

a. commencing on the date of lodging of this Consent Decree, provide EPA and DTSC, and their representatives, including their contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Decree including, but not limited to, the following activities:

(1) Monitoring the Work;

(2) Verifying any data or information submitted to the United States or the State;

(3) Conducting investigations relating to contamination at or near the Site;

(4) Obtaining samples;

(5) Assessing the need for, planning, or implementing additional

response actions at or near the Site;

(6) Implementing the Work pursuant to the conditions set forth in this Consent Decree;

(7) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by the Parties or their agents, consistent with Section XXIV (Access to Information);

(8) Assessing the Parties' compliance with this Consent Decree; and

(9) Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree;

b. Commencing on the date of lodging of this Consent Decree, refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures to be implemented pursuant to this Consent Decree. Such restrictions may include, but are not limited to, refraining from installing or operating production wellfields or spreading basins in a manner that would interfere with the effectiveness of the Newmark or Muscoy OU extraction and treatment systems.

c. Within 90 (ninety) days of EPA's written request specifying the property, restrictions, access or easements sought, execute and record in the Recorder's Office of San Bernardino County, State of California , an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraphs 32.a,

33.a, 33.c of this Consent Decree, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraphs 32.b, 33.c of this Consent Decree, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. Such Parties shall grant the access rights and the rights to enforce the land/water use restrictions to one or more of the following persons: (i) the United States and its representatives, (ii) DTSC and its representatives, (iii) the City and its representatives, as applicable, and/or (iv) other appropriate grantees. Such Parties shall, within 45 (forty-five) days of entry of this Consent Decree, submit to EPA for review and approval with respect to such property:

(1) A draft easement, in substantially the form attached hereto as Appendix F, that is enforceable under the laws of the State of California, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and

(2) a current title commitment or report prepared in accordance with the U.S. Department of Justice Title Standards (2001) (the "Standards").

Within 15 (fifteen) days of EPA's approval and acceptance of the easement, such Parties shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the easement with the Recorder's Office of San Bernardino County. Within 30 (thirty) days of recording the easement, such Parties shall provide EPA with final title evidence acceptable under the Standards, and a conformed copy of the original recorded easement showing the clerk's

recording stamps. The City shall not be obliged to record easements relating to water pipelines under public streets.

33. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Decree (other than those provided in the permit program in Paragraphs 27-30), is owned or controlled by persons other than any of the Parties, the City shall upon written request from EPA specifying the property, restrictions, access or easements sought, use best efforts to secure from such persons:

a. an agreement to provide access thereto for the City, as well as for the United States on behalf of EPA, and DTSC, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 32.a of this Consent Decree;

b. an agreement, enforceable by the City, the United States and DTSC, to abide by the obligations and restrictions established by Paragraphs 32.b and 32.c of this Consent Decree, or that are otherwise necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree; and

c. if EPA so requests, the execution and recordation in the Recorder's Office of San Bernardino County, State of California, of an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 32.a of this Consent Decree, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraphs 32.b and 32.c of this Consent Decree, or other restrictions that EPA

determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. The access rights and/or rights to enforce land/water use restrictions shall be granted to one or more of the following persons: (i) the United States and its representatives, (ii) DTSC and its representatives, (iii) the City and its representatives, as applicable, and/or (iv) other appropriate grantees. Within 45 (forty-five) days of entry of this Consent Decree, the Party shall submit to EPA for review and approval with respect to such property:

(1) a draft easement, in substantially the form attached hereto as Appendix F, that is enforceable under the laws of the State of California, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and

(2) a current title commitment or report prepared in accordance with the Standards.

Within 15 (fifteen) days of EPA's approval and acceptance of the easement, the City shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, the easement shall be recorded with the Recorder's Office of San Bernardino County. Within 30 (thirty) days of the recording of the easement, the City shall provide EPA with final title evidence acceptable under the Standards, and a conformed copy of the original recorded easement showing the clerk's recording stamps. The City shall not be obliged to record easements for water pipelines under public streets.

34. For purposes of Paragraphs 32 and 33 of this Consent Decree, "best efforts" includes the payment of reasonable sums of money by the City in consideration of access, access easements, land/water use restrictions, and/or restrictive easements, except that the City shall not be required to pay permittees under Paragraphs 32 and 33 or the County of San Bernardino for such matters if the Lead Oversight Agency determines that such payments are not required. If any access or land/water use restriction agreements required by Paragraphs 32.a, 32.b or 32.c of this Consent Decree are not obtained within 45 (forty-five) days of the date of entry of this Consent Decree, or EPA request, if applicable, or any access easements or restrictive easements required by Paragraph 33 of this Consent Decree are not submitted to EPA in draft form within 45 (forty-five) days of the date of EPA's request for such easements, the City shall promptly notify the United States and DTSC in writing, and shall include in that notification a summary of the steps that the City has taken to attempt to comply with Paragraph 33 of this Consent Decree. The United States or DTSC may, as they deem appropriate, assist the City in obtaining access or land/water use restrictions, either in the form of contractual agreements or in the form of easements running with the land. The City shall reimburse the United States or DTSC in accordance with the procedures in Section XVI (Payments for Response Costs), Paragraph 62.e, for all costs incurred, direct or indirect, by the United States or DTSC in obtaining such access and/or land/water use restrictions including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

35. If EPA determines that, in addition to the City groundwater management and permit programs referred to in Paragraphs 27-30, land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are

needed to implement the interim remedies selected in the RODs or the institutional controls selected in the ESD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, the City and DTSC shall use their best efforts to cooperate with EPA's efforts to secure such governmental controls. For the purposes of this Paragraph, "best efforts" shall not include the payment of sums of money to any other governmental entity in consideration of such governmental controls or the indemnification of the United States for actions taken to secure such additional controls.

36. Notwithstanding any provision of this Consent Decree, the United States and DTSC retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulation.

X. REPORTING REQUIREMENTS.

37. In addition to any other requirement of this Consent Decree, the City shall submit to EPA and DTSC 3 (three) copies of written progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous month or other reporting period specified in this Paragraph ("Reporting Period"); (b) include a summary of all results of sampling and tests and all other data received or generated by the City or its contractors or agents in the previous Reporting Period; (c) identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted during the previous Reporting Period; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks, if the Reporting Period is one month, or for the following Reporting Period, if the Reporting Period is a quarter- or half-

year, and provide other information relating to the progress of the Work; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (f) include any modifications to the work plans or other schedules that the City has proposed to or that have been approved by the Lead Oversight Agency; and (g) describe all activities undertaken in support of the Community Relations Plan during the previous Reporting Period and those to be undertaken in the next six weeks, if the Reporting Period is one month, or during the following Reporting Period, if the Reporting Period is a quarter- or half-year. For the purposes of this Paragraph, data shall be considered "received or generated" after all QA/QC procedures required under this Consent Decree have been completed for such data and the City has physically (including electronically) received the data together with QA/QC documentation for such data. All data including control samples data and their QA/QC documentation shall be reported to the Lead or Support Oversight Agency as detailed in the SOW.

The City shall submit these progress reports to EPA and DTSC according to the following schedule; provided that the Lead Oversight Agency with the concurrence of the Support Oversight Agency may establish a different schedule or require more frequent reporting.

a. By the last day of the month following the preceding month, for 2 (two) years after the Effective Date;

b. By the last day of the month following the preceding quarter, for the following five years (i.e. April 10, July 10, October 10 and January 10); and

c. By the last day of the month following the preceding half-year, for the remaining years of Work (i.e. January 10, July 10).

If requested by EPA or DTSC, the City shall also provide briefings for EPA and DTSC to discuss the progress of the Work. Such briefings may be by conference call if permitted by the Lead Oversight Agency.

38. The City shall notify EPA and DTSC of any change in the schedule described in the progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than 7 (seven) days prior to the performance of the activity.

39. Upon the occurrence of any event during performance of the Work that the City is required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), the City shall within 24 (twenty-four) hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), and, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Emergency Response Section, Region 9, United States Environmental Protection Agency. The City shall also notify the DTSC Project Coordinator within the same time period. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

40. Within 20 (twenty) days of the onset of such an event, the City shall furnish to EPA and DTSC a written report, signed by the City's Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 (thirty) days of the conclusion of such an event, the City shall submit a report

setting forth all actions taken in response thereto.

41. The City shall submit 2 (two) copies of all plans, reports, and data required by the SOW or any approved plans to the Lead and Support Oversight Agencies in accordance with the schedules set forth in such plans.

42. All reports and other documents submitted by the City to the Lead and Support Oversight Agencies (other than the progress reports referred to above) which purport to document compliance with the terms of this Consent Decree shall be signed by authorized representatives of the City.

XI. APPROVAL OF PLANS AND OTHER SUBMISSIONS

43. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, the Lead Oversight Agency, after a reasonable opportunity for review and comment by the Support Oversight Agency, shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the City modify the submission; or (e) any combination of the above. However, the Lead Oversight Agency shall not modify a submission without first providing the City at least one notice of deficiency and an opportunity to cure within 30 (thirty) days, or within another period selected by the Lead Oversight Agency, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

44. In the event of approval, approval upon conditions, or modification by the

Lead Oversight Agency, as applicable, pursuant to Paragraph 43 or 46, the City shall proceed to take any action required by the plan, report, or other item, as approved or modified by the Lead Oversight Agency, subject only to its right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by the Lead Oversight Agency. In the event that the Lead Oversight Agency modifies the submission to cure the deficiencies pursuant to Paragraph 43 or 46 and the submission has a material defect, EPA and DTSC retain their right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

45. Resubmission of Plans.

a. Upon receipt of a notice of disapproval pursuant to Paragraph 43, the City shall, within 30 (thirty) days or such longer time as specified by the Lead Oversight Agency in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX (Stipulated Penalties), shall accrue during the 30-day (thirty-day) period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraph 47.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 43, the City shall proceed, at the direction of the Lead Oversight Agency, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve the City of any liability for stipulated penalties under Section XX (Stipulated Penalties).

46. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by the Lead Oversight Agency, the Lead Oversight Agency may again

require the City to correct the deficiencies, in accordance with the preceding Paragraphs. The Lead Oversight Agency also retains the right to modify or develop the plan, report or other item. The City shall implement any such plan, report, or item as modified or developed by the Lead Oversight Agency, subject only to its right to invoke the procedures set forth in Section XIX (Dispute Resolution).

47. If upon resubmission, a plan, report, or item is disapproved or modified by the Lead Oversight Agency due to a material defect, the City shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the City invokes the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and the Lead Oversight Agency's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If the Lead Oversight Agency's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX (Stipulated Penalties).

48. All plans, reports, and other items required to be submitted to the Lead Oversight Agency under this Consent Decree shall, upon approval or modification by the Lead Oversight Agency, be enforceable under this Consent Decree. In the event the Lead Oversight Agency approves or modifies a portion of a plan, report, or other item required to be submitted under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT MANAGERS

49. Within 20 (twenty) days of lodging this Consent Decree, the City, DTSC

and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators, unless such designation and notification has been made prior to entry of this Consent Decree. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least 5 (five) working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The City's Project Coordinators shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The City's Project Coordinators may include the Manager and Deputy General Manager of the City's Municipal Water Department, but shall not be City or non-City employees who are attorneys for the City. He or she may assign other representatives, including contractors, to serve as Site representatives for oversight of performance of daily operations.

50. The United States or DTSC may designate other representatives, including, but not limited to, EPA and DTSC employees, and federal and DTSC contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and an On-Scene Coordinator ("OSC") by the NCP, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the NCP, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to

release or threatened release of Waste Material.

51. The Parties' Project Coordinators will meet, at a minimum, on a monthly basis or other basis as determined by the Lead Oversight Agency.

XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

52. Within 60 (sixty) days of entry of this Consent Decree, or within 10 (ten) days of the United States' payment of the amounts provided in Section XVI of this Consent Decree (Payments of Response Costs), whichever is later, the City shall establish and maintain financial security for the O&M and the Site-wide Monitoring in the form of the O&M Escrow, and for the construction the City has agreed to perform in the form of the Construction Escrow, using the funds provided by the United States.

53. With respect to the other work that the City agrees in this Consent Decree to perform, including but not limited to payment of DTSC's oversight costs, as described in Paragraph 14, within 30 (thirty) days of entry of this Consent Decree, the City shall establish and maintain financial security in the amount of $ 3 million (three million dollars) in one or more of the following forms:

a. A surety bond guaranteeing performance of the work;

b. One or more irrevocable letters of credit equaling the total estimated cost of the work;

c. A demonstration that the City satisfies the requirements of 40 C.F.R. Part 264.143(f); or

d. Another method proposed by the City and approved by EPA. Such method may include a program in which the City shall adopt water rates, through procedures compliant with applicable California law, that assure that the City has

sufficient revenue from water rate-payers to pay for the estimated costs in each upcoming City fiscal year of the following items:

(1) All required debt service on the Municipal Water Department's financial obligations, including bonds, required by bond covenants or similar undertakings to be serv iced by the Municipal Water Department's water rate revenue;

(2) All operating and maintenance expenses for the City and DTSC treatment systems, including but not limited to electrical costs, labor costs, cost of supplies, materials, and outside vendor costs to operate and maintain such treatment systems, and departmental overhead, and any anticipated Oversight Costs; and

(3) All other projected operating and capital expenses for the Municipal Water Department, other than those lawfully subject to reimbursement under the O&M Escrow, the Construction Escrow, or under other lawful and identified sources of reimbursement.

Under such a program, the City shall annually certify to EPA and DTSC that the water rates are sufficient to pay for all such obligations. Such certification shall include documentation of the debts and expenses in Paragraph 53.d and the calculation of revenues. If the City is unable to certify that the water rates are sufficient, the City shall initiate appropriate rate-making proceedings to assure adequate funds are available to pay for those of the City's obligations under this Consent Decree that are not subject to reimbursement by the O&M or Construction Escrows or under other lawful and identified sources of reimbursement, or provide to EPA another form of approved financial assurance as described in this Paragraph.

54. In the event that EPA, after a reasonable opportunity for review and

comment by DTSC, determines at any time that the financial assurances provided pursuant to this Section are inadequate, the City shall, within 60 (sixty) days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in the preceding Paragraph of this Consent Decree. The City's inability to demonstrate financial ability to complete the Work or the work described in the preceding Paragraph shall not excuse performance of any activities required under this Consent Decree.

55. If the City can show that the estimated cost to complete the remaining work under Paragraph 53 has diminished below the amount set forth in Paragraph 53 after entry of this Consent Decree, the City may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by EPA in its unreviewable discretion, seek to reduce the amount of the financial security provided under this Section to the estimated cost of the remaining work to be performed. The City shall submit a proposal for such reduction to the Lead Oversight Agency, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by the Lead Oversight Agency with the concurrence of the Support Oversight Agency. In the event of a dispute, the City may reduce the amount of the security in accordance with the final administrative or judicial decision resolving the dispute.

56. The City may change the form of financial assurance provided under this Section at any time, upon notice to and approval by EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, the City may change the form of the financial assurance only in accordance with the final administrative or judicial decision resolving the dispute.

XIV. CERTIFICATION OR NOTICE OF COMPLETION

57. Completion of the Work

a. EPA, after reasonable opportunity for review and comment by DTSC, may require the City, upon 30 (thirty) days' notice, to initiate the Certification of Completion process for an OU or Site-wide Monitoring if EPA believes that the Work has been fully performed for that OU or Site-wide Monitoring.

b. Within 90 (ninety) days after the City concludes that the Work for (1) the Newmark OU, (2) the Muscoy OU, or (3) the Site-wide Monitoring has been fully performed, or within 120 (one hundred and twenty) days after EPA requires initiation of the Certification of Completion process pursuant to Paragraph 57.a, the City shall schedule and conduct a pre-certification inspection for each such phase of the Work. EPA, DTSC and USACE shall be invited to attend. Unless certified or terminated earlier by EPA, each such phase of the Work will be completed after the City has performed for (1) fifty years after October 1, 2000, with respect to O&M of the Newmark OU, (2) 50 (fifty) years after the Muscoy OU is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), with respect to O&M of the Muscoy OU, and (3) 50 (fifty) years after the Muscoy OU is determined by EPA to be operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), with respect to the Site-wide Monitoring. If any EPA ROD requires performance of such activities for longer than the times specified in this Paragraph, the City's obligations under this Consent Decree shall be complete after the City has performed for the times specified in this Paragraph. If any EPA ROD provides that these activities are complete or may be ceased in lesser time frames than are specified in this Paragraph, the City may apply for a Certification of Completion of each phase of

the Work in accordance with the requirements of such ROD.

c. Where the City has initiated the Certification of Completion process pursuant to Paragraph 57.b, if, after the pre-certification inspection, the City believes that the Work or relevant phase of the Work has been fully performed, the City shall submit a written report by a registered professional engineer stating that the subject Work has been completed in full satisfaction of the requirements of this Consent Decree. If EPA has initiated the Certification of Completion process pursuant to Paragraph 57.a, after the pre-certification inspection, the City shall submit a written report by a registered professional engineer stating whether the City believes that the Work or relevant phase of the Work has been fully performed and completed in full satisfaction of the requirements of this Consent Decree. Such reports shall contain the following statement, signed by a responsible government official:

> To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by DTSC, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify the City in writing of the activities that must be undertaken by the City pursuant to this Consent Decree to complete the Work. Provided, however, that EPA may only require the City to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the interim remedies selected in the RODs and the ESD," as that term is defined in

Paragraph 17. EPA will set forth in the notice a schedule for performance of such activities consistent with this Consent Decree and the SOW or require the City to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). The City shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to its right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

d. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by the City, and after a reasonable opportunity for review and comment by DTSC, that the Work or a phase of the Work has been performed in accordance with this Consent Decree, EPA will so notify the City in writing (Certification of Completion).

e. If EPA otherwise concludes, and after a reasonable opportunity for review and comment by DTSC, that the Work or a phase of the Work has been performed in accordance with this Consent Decree, EPA will so notify the City in writing (Notice of Completion). EPA may make such notification notwithstanding whether the City has initiated or EPA has required the City to initiate the Certification of Completion process.

XV. EMERGENCY RESPONSE

58. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the City shall, subject to Paragraph 59, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall

immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator, and DTSC's Project Coordinator. If neither of the EPA personnel is available, the City shall notify the EPA Emergency Response Unit, Region 9. The City shall take such actions in consultation with EPA's Project Coordinator, or other available authorized EPA or DTSC official and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. In the event that the City fails to take appropriate response action as required by this Section, and EPA or another department of the United States, and/or DTSC takes such action instead, the City shall reimburse the United States and DTSC for all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payments for Response Costs), Paragraphs 62.e and/or 65. The City may use funds from the O&M Escrow to make such reimbursement.

59. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or DTSC, (a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or (b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXI (Covenants Not to Sue by United States and DTSC).

XVI. PAYMENTS FOR RESPONSE COSTS.

60. Payments by Settling Federal Agencies for Past and Future Response Costs.

a. Payments by United States on Behalf of Settling Federal Agencies

(1) Immediately upon approval by the Court of this Consent Decree, the City will provide electronic funds transfer information sufficient to allow the United States to make the payments provided in this Paragraph.

(2) The United States, on behalf of the Settling Federal Agencies, shall pay the amount of $59,000,000 (fifty-nine million dollars) into the O&M Escrow within 90 (ninety) days after the Effective Date or upon establishment of the O&M Escrow, whichever is later. The amount paid into the O&M Escrow shall be retained and used by the City in accordance with Paragraph 14 of this Consent Decree. Any amount remaining in the O&M Escrow after the earlier of (a) the expiration of all time limits described in Paragraph 14.a.1(b)-(e); (b) the final Certification of Completion pursuant to Section XIV (Certification or Notice of Completion), Paragraph 57.d; or (c) the final Notice of Completion by EPA pursuant to Paragraph 57.e; shall be disbursed to the City and to the Future Cost Account on a 50/50 basis. Until such time as the United States funds the O&M Escrow, the City shall be entitled to seek reimbursement for O&M Escrow-covered costs from the Cooperative Agreement; provided, however, that the City shall reimburse EPA for any such disbursements during such time upon funding of the O&M Escrow.

(3) The United States, on behalf of the Settling Federal

Agencies, shall pay to EPA the amount of $6,500,000 (six and one-half million dollars) within 90 (ninety) days after the Effective Date. Amounts paid to EPA in accordance with this Paragraph shall be deposited into the Future Cost Account and shall be retained and used to conduct or finance response actions at or in connection with the Site, or transferred by EPA to another special account for the Site, or to the EPA Hazardous Substance Superfund.

(4) The United States, on behalf of the Settling Federal Agencies, shall pay to DTSC the amount of $3,000,000 (three million dollars) within 90 (ninety) days after the Effective Date.

(5) The United States, on behalf of the Settling Federal Agencies, shall pay into the Construction Escrow the amount of $10,000,000 (ten million dollars) within 90 (ninety) days after the Effective Date or upon establishment of the Construction Escrow, whichever is later. The amount paid to the Construction Escrow shall be (i) retained and used by the City to pay for construction of additional City treatment plants and directly related transmission systems to expand the City's ability to provide potable water to its residents as set forth in Appendix G to this Consent Decree; and (ii) to complete construction of the Muscoy OU extraction system. Any amount remaining in the Construction Escrow after the earlier of the last Certification of Completion pursuant to Section XIV (Certification or Notice of Completion) or the last Notice of Completion by EPA pursuant to Paragraph 57.e shall be disbursed to the City and to the Future Cost Account on a 50/50 basis.

(6) Except for up to $1,000,000 one million dollars NPV, which may be used by the City to implement the requirements of Paragraphs 32 and 33, and to develop, update and maintain the Groundwater Model, in accordance with the City's obligations under Paragraph 14.c.(1), no funds paid by or on behalf of the Settling Federal Agencies to the O&M or Construction Escrows pursuant to this Consent Decree shall be used to pay attorneys' fees, expert witness costs, or other litigation costs or fees.

b. The Settling Federal Agencies' obligations under this Consent Decree shall be satisfied upon such payments by the United States, on behalf of the Settling Federal Agencies, provided in Paragraph 60.a. If the required payments are not made within 90 (ninety) days after the Effective Date or as otherwise provided in this Paragraph, EPA and the Department of Justice shall resolve the issue within 30 (thirty) days in accordance with the letter agreement dated December 28, 1998. Payment of such funds shall not be considered a fine, penalty or monetary sanction. If a required payment for the Settling Federal Agencies is not made within 90 (ninety) days of entry of this Consent Decree, then the unpaid balance shall accrue Interest from the date 90 (ninety) days after the date of entry until the date the City, DTSC or EPA, as the case may be, actually receives the federal payment.

c. The City's audit responsibilities for use of the Escrow Funds shall be governed by OMB Circular A-133. The City shall cause the use of the Escrow Funds to be audited annually as a major program within the meaning of, and according to the standards and procedures of, OMB Circular A-133 or a comparable, minimum standard in any

successor document. That audit shall assure, among other things, that the money is invested as provided in the attached guaranteed investment contract (Appendix G), and that the proceeds of that investment and the principal sum are spent for the permitted purposes under this Consent Decree. A separate report concerning such expenditures and their compliance with this Consent Decree shall be prepared annually by the auditors and provided to the City, and the Lead and Support Oversight Agencies.

d. The United States' payments to DTSC shall be made in accordance with the procedures in Paragraph 65 or in accordance with Electronic Funds Transfer instructions provided by DTSC.

61. Anti-Deficiency Act The Parties to this Consent Decree recognize and acknowledge that the payment obligations of the United States pursuant to this Consent Decree can only be paid from appropriated funds legally available for such purpose. Nothing in this Consent Decree shall be interpreted or construed as a commitment or requirement that the United States obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. §§ 1301, 1341, or any other applicable provision of law.

62. Payment by the City for Extraordinary Costs and Other Payments

a. The City shall pay to the United States all Extraordinary Costs and other payments required by this Consent Decree. On a periodic basis the United States will send the City a bill requiring payment of Extraordinary Costs that includes a SCORES (which stands for "Superfund Cost Organization and Recovery Enhancement System") or other regionally-prepared standard cost summary that includes direct and indirect costs incurred by EPA and its contractors for Future U.S. Response Costs and Extraordinary

Costs. In addition to the cost summary, EPA shall provide with each bill an explanation of its allocation of costs between Future U.S. Response Costs and Extraordinary Costs or other payments required by the bill. The City shall make all payments identified by EPA as Extraordinary Costs or other payments required by the bill within 60 (sixty) days of the City's receipt of each bill requiring payment, except as otherwise provided in Paragraphs 66 and 109.

b. EPA has already obligated $ 6,249,000 of appropriated money under the Cooperative Agreement for the City to complete the construction of the Muscoy extraction system, as that City commitment is defined in Paragraph 14.e of this Consent Decree. In the event EPA pays the City more than $6,249,000 under the Cooperative Agreement for the City to construct the Muscoy extraction system, the City shall reimburse EPA such additional amount within thirty (30) days of the City's receipt of a bill requiring payment of such costs. EPA shall not seek reimbursement of such amounts until after the Construction Escrow has been funded.

c. In the event that the City has sought and been reimbursed by EPA pursuant to the Cooperative Agreement for O&M on the Newmark or Muscoy OU or the Site-wide Monitoring, the City shall reimburse EPA for such sums previously paid to the City pursuant to the Cooperative Agreement. The City has sought and been reimbursed by EPA for O&M on the Newmark OU since October 1, 2000. EPA shall not seek reimbursement for such amounts until after the O&M Escrow has been funded.

d. In the event that EPA is required to pay for obligations of the City that are not reimbursed under this Consent Decree or that exceed the limits of the escrows

established pursuant to this Consent Decree, the City shall reimburse EPA for such costs.

e. The City shall make all payments required by this Paragraph by a check made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, EPA Site/Spill ID Number 09J5, and DOJ Case Number 90-11-3-06902/1. The City shall send the check(s) to:

U.S. Environmental Protection Agency
Region IX, Attn: Superfund Accounting
P.O. Box 360863M
Pittsburgh, PA 15251
Attn: David Wood

Amounts paid to EPA in accordance with this Paragraph shall be deposited into the Future Cost Account and shall be retained and used to conduct or finance response actions at or in connection with the Site, or transferred by EPA to the EPA Hazardous Substance Superfund.

63. At the time of payment, the City shall send notice that payment has been made to the United States, to EPA and to the Regional Financial Management Officer, in accordance with Section XXVI (Notices and Submissions).

64. Amounts paid to EPA by the City in accordance with this Section shall be deposited into the Future Cost Account and shall be retained and used to conduct or finance response actions at or in connection with the Site, or transferred by EPA to the EPA Hazardous Substance Superfund.

65. The City shall reimburse DTSC for all Oversight Costs not inconsistent with the NCP up to $900,000 (nine hundred thousand dollars). DTSC will send the City a bill requiring payment that includes a standard DTSC-prepared cost summary that

includes direct and indirect costs incurred by DTSC and its contractors for Oversight Costs on a periodic basis. The City shall make all payments within 90 (ninety) days of the City's receipt of each bill requiring payment, except as otherwise provided in Paragraphs 66 and 109. All payments to DTSC required by this Consent Decree shall be made by check, payable to Cashier, Department of Toxic Substances Control, and accompanied by a transmittal letter referencing the Newmark Superfund Site, Project Code No. 400259, and shall be forwarded to:

Cashier, Department of Toxic Substances Control
1001 "T" Street, 4th Floor
P.O. Box 806
Sacramento, California 95814-0806

66. The City may contest payment of any Oversight Costs or Extraordinary Costs if the City determines that the United States or DTSC has made an accounting error, if the applicable cap on Oversight Costs has been exceeded, or if the City alleges that a cost item that is included represents costs that are inconsistent with the NCP, or with respect to DTSC costs, other applicable state law. The City may request the underlying documentation only for charges incurred by DTSC, provided that such request shall not be cause for the City to delay payment to the United States or DTSC or to delay initiation of the dispute resolution procedures and satisfaction of the other requirements described in this Paragraph. Any objection shall be made in writing within 30 (thirty) days of receipt of the bill and must be sent to the United States (if the United States' accounting is being disputed) or DTSC (if DTSC's accounting is being disputed) pursuant to Section XXVI (Notices and Submissions). Any such objection shall specifically identify the contested Oversight Costs or Extraordinary Costs and the basis for objection. In the event of an

objection, the City shall within the 30 (thirty) day period pay all uncontested Oversight and Extraordinary Costs to the United States or DTSC in the manner described in Paragraphs 62.e and 65. Simultaneously, the City shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of California and remit to that escrow account funds equivalent to the amount of the contested Oversight Costs or Extraordinary Costs. The City shall send to the United States, as provided in Section XXVI (Notices and Submissions), and DTSC a copy of the transmittal letter and check paying the uncontested Oversight Costs or Extraordinary Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, the City shall initiate the dispute resolution procedures in Section XIX (Dispute Resolution). If the United States or DTSC prevails in the dispute, within 10 (ten) days of the resolution of the dispute, the City shall pay the sums due (with accrued interest) to the United States, if the United States costs are disputed, or DTSC, if DTSC costs are disputed, in the manner described in Paragraph 62.e or 65. If the City prevails concerning any aspect of the contested costs, the City shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to the United States, if the United States costs are disputed, or DTSC, if DTSC costs are disputed, in the manner described in Paragraph 62.e or 65; the City shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute

Resolution) shall be the exclusive mechanisms for resolving disputes regarding the City's obligation to reimburse the United States and DTSC for their Oversight or Extraordinary Costs.

67. In the event that the payments required by Paragraphs 62.e and 65 are not made within 60 (sixty) and 90 (ninety) days, respectively, of the City's receipt of the bill, the City shall pay Interest on the unpaid balance, except that the City shall not be obliged to pay Interest with respect to any costs which it contested and with respect to which it has prevailed pursuant to the preceding Paragraph and the Dispute Resolution procedures under this Consent Decree. The Interest to be paid on costs under this Paragraph shall begin to accrue on the date of the bill. The Interest shall accrue through the date of the City's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States and DTSC by virtue of the City's failure to make timely payments under this Section including, but not limited to, payment of stipulated penalties. The City shall make all payments required by this Paragraph in the manner described in Paragraphs 62.e and 65.

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XVII. INDEMNIFICATION AND INSURANCE.

74. The City's Indemnification of the United States and DTSC.

a. The United States and DTSC do not assume any liability by entering into this agreement or by virtue of any designation of the City as EPA's or DTSC's authorized representatives under Section 104(e) of CERCLA. With respect to the Work for which the City is responsible, the City shall indemnify, save and hold harmless the United States, DTSC, and their officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of the City, as applicable, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of the City as EPA's or DTSC's authorized representatives under Section 104(e) of CERCLA. Further, the City agrees to pay the United States as Extraordinary Costs and DTSC as costs not included in State Oversight Costs all costs they incur including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States or DTSC based on negligent or other wrongful acts or omissions of the City, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under their control, in carrying out activities pursuant to this Consent Decree. Neither the United States nor DTSC shall be held out as a party to any contract entered into by or on behalf of the City in carrying out activities pursuant to this Consent Decree. The City and its contractors shall not be

considered agents of the United States or DTSC.

b. The United States and DTSC do not assume any liability for the groundwater management and permitting program described in Paragraphs 27-30. The City shall defend, indemnify, save and hold harmless the United States and DTSC against all claims or causes of action arising from or on account of the acts or omissions of the City, as applicable, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out the groundwater management and permitting program, including but not limited to claims that the programs or Groundwater Model are illegal, invalid, or constitute a taking of property without just compensation. The City's obligation to indemnify the United States pursuant to this Paragraph 74.b shall be limited to $ 12,000,000 (twelve million dollars) NPV on the date of entry of this Consent Decree. The City's obligation to indemnify DTSC pursuant to this Paragraph 74.b shall be limited to $ 12,000,000 (twelve million dollars). The United States and DTSC shall cooperate in the defense of any such claim, and shall bear their own intramural costs of such cooperation (e.g., EPA and DOJ employee compensation and related costs), and in the case of DTSC, California Department of Justice intramural costs, but the City shall bear any other costs of defending the United States and DTSC against any such claim or cause of action.

c. The United States or DTSC, as applicable, shall give the City prompt notice of any claim for which the United States or DTSC plans to seek indemnification pursuant to Paragraph 74, and shall consult with the City prior to settling such claim. The United States and DTSC also shall notify each other promptly of such

claims. DTSC shall give the City the opportunity to assist in the defense of any such claim at the City's expense. At the request of the United States or DTSC, the City at its own expense shall undertake the defense and/or shall cooperate with the United States in the defense of any such claim.

75. The City waives all claims against the United States and DTSC for damages or reimbursement or for set-off of any payments made or to be made to the United States or DTSC, arising from or on account of any contract, agreement, or arrangement between the City, the United States or DTSC and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, the City shall indemnify and hold harmless the United States and DTSC with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between the City and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

76. Subject to its obligations under this Consent Decree, including but not limited to under Paragraph 62, the City reserves all rights under the Cooperative Agreement with the United States and under agreements with DTSC related to this Site for reimbursement, indemnity, or other rights for work the City has undertaken pursuant to the Cooperative Agreement or agreements with DTSC (1) prior to receipt of funds in the O&M Escrow to cover current O&M obligations of the City under this Consent Decree, excluding costs that are the sole responsibility of the City under this Consent Decree, and (2) prior to receipt of funds in the Construction Escrow to cover construction obligations

of the City under this Consent Decree.

77. No later than 15 (fifteen) days before commencing any on-site Work, the City shall secure, and shall maintain until the first anniversary of EPA's final Certification of Completion of the Work pursuant to Subparagraph 57.d of Section XIV (Certification or Notice of Completion) comprehensive general liability insurance with limits of $ 20 million (twenty million dollars), combined single limit, naming the United States and DTSC as additional insureds. In addition, for the duration of this Consent Decree, the City shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of the City in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, the City shall provide to EPA and the DTSC certificates of such insurance and a copy of each insurance policy. The City shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If the City demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, the City need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor. As each phase of the Work is completed and EPA issues a Certification or Notice of Completion for that phase of the Work under Section XIV (Certification or Notice of Completion), the City may request to reduce the amount of insurance the City is required to maintain and may reduce that amount with EPA approval.

XVIII. FORCE MAJEURE

78. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the City, of any entity controlled by the City, or any of its contractors, that delays or prevents the performance of any obligation under this Consent Decree despite the City's best efforts to fulfill the obligation. The requirement that the City exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work, a failure to attain the Performance Standards, or failure of the City to implement the groundwater management program or the permit plan described in Paragraphs 27-30.

79. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the City shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Director of the Superfund Division, EPA Region 9, and DTSC's Project Coordinator, within 2 (two) Working Days of when the City first knew that the event might cause a delay. Within 2 (two) Working Days thereafter, the City shall provide in writing to EPA and DTSC an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or

mitigate the delay or the effect of the delay; the City's rationale for attributing such delay to a force majeure event if the City intends to assert such a claim; and a statement as to whether, in the opinion of the City, such event may cause or contribute to an endangerment to public health, welfare or the environment. The City shall include with any notice all available documentation supporting its claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude the City from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. The City shall be deemed to know of any circumstance of which the City, any entity controlled by the City, or the City's contractors knew or should have known.

80. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the City and DTSC in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify the City and DTSC in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

81. If the City elects to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), the City shall do so no later than 15 (fifteen) days after

receipt of EPA's notice. In any such proceeding, the City shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that the City complied with the requirements of Paragraph 79, above. If the City carries this burden, the delay at issue shall be deemed not to be a violation by the City of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

82. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the City's exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States or DTSC to enforce obligations of the City that have not been disputed in accordance with this Section. Nor shall the procedures set forth in this Section apply to any dispute between the United States and DTSC.

83. Any dispute between the City and EPA which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the City and EPA. The period for informal negotiations shall not exceed 20 (twenty) days from the time the dispute arises, unless it is modified by written agreement of the Parties to the dispute. The dispute shall be considered to have arisen when one Party sends the other Party a written Notice of Dispute.

a. In the event that the City and EPA cannot resolve a dispute by informal negotiations under this Paragraph, then the position advanced by EPA shall be considered binding unless, within 30 (thirty) days after the conclusion of the informal negotiation period, the City invokes the formal dispute resolution procedures of this Section by serving on EPA a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the City. The Statement of Position shall specify the City's position as to whether formal dispute resolution should proceed under Paragraph 84 or Paragraph 85.

b. Within 15 (fifteen) working days after receipt of the City's Statement of Position, EPA will serve on the City its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 84 or 85. Within 5 (five) Working Days after receipt of EPA's Statement of Position, the City may submit a Reply.

c. If there is disagreement between EPA and the City as to whether dispute resolution should proceed under Paragraph 84 or 85, EPA and the City shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the City ultimately appeals to the Court to resolve the dispute, the Court shall determine which Paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 84 and 85.

84. Formal dispute resolution for disputes between the City and EPA pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA or DTSC under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by the City regarding the validity of the RODs' provisions.

a. An administrative record of the dispute shall be maintained by EPA, and shall contain all Statements of Position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental Statements of Position.

b. The Director of the Superfund Division, EPA Region 9, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 84.a. This decision shall be binding upon the affected Parties, subject only to the right to seek judicial review pursuant to Paragraph 84.c and 85.a.

c. Any administrative decision made by EPA pursuant to Paragraph 84.b shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the City with the Court and served on EPA within 15 (fifteen) days of receipt of EPA's decision. The motion shall include a description of the

matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to the City's motion within 30 (thirty) days of such motion.

d. In proceedings on any dispute governed by this Paragraph, the City shall have the burden of demonstrating that the decision of the Superfund Division Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 84.a.

85. Formal dispute resolution for disputes between the City and EPA that neither pertain to the selection or adequacy of any response action, nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of the City's Statement of Position submitted pursuant to Paragraph 83, the Director of the Superfund Division, EPA Region 9, will issue a final decision resolving the dispute. The Superfund Division Director's decision shall be binding on the City unless, within 15 (fifteen) days of receipt of the decision, the City files with the Court and serves on EPA a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to the City's motion within 30 (thirty) days of such motion. DTSC shall have the opportunity

to provide statements of position and to respond to any City motion in any dispute between the City and EPA.

b. Notwithstanding Paragraph P of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

86. Disputes that arise under this Consent Decree between the City and DTSC relating to DTSC's decisions or the Work performed pursuant to DTSC acting as the Lead Oversight Agency shall be resolved in accordance with this Paragraph. The City and DTSC agree to use their best efforts to resolve all disputes informally. The City and DTSC agree that the procedures contained in this Paragraph are the required administrative procedures for resolving disputes arising under this Consent Decree. If the City fails to follow the procedures contained in this Paragraph, it shall have waived its right to further contest the disputed issue. The City reserves its legal rights to contest or defend against any final decision rendered by DTSC under this Paragraph. Disputes regarding DTSC billings or payment of Oversight Costs shall follow the procedures set forth in Paragraph 66 and Paragraph 86.c.

a. The City shall first seek resolution with DTSC's assigned project manager and unit chief by providing a written statement of the dispute. If the issue is not resolved after review by the unit chief, the City shall seek resolution with the DTSC branch chief by presenting in a letter the issues in dispute, the legal or other basis for the City's position, and the remedy sought. The branch chief shall issue a written decision with an explanation for the decision within thirty (30) business days after receipt of the

letter from the City.

b. If the City disagrees with the branch chief's decision, the City may appeal to the Statewide Cleanup Operations Division Chief. To appeal to the division chief, the City shall prepare a letter stating the reasons why the branch chief's decision is not acceptable. Attached to the letter shall be (i) the City's original statement of dispute, (ii) supporting documents, and (iii) copies of any responses prepared by the project manager, unit chief, and branch chief. This letter and attachments shall be sent to the division chief within ten (10) business days from the date of the City's receipt of the branch chief's response. The division chief or designee shall review the City's letter and supporting documents, consider the issues raised and render a written decision to the City within thirty (30) business days of receipt of the City's letter. The decision of the division chief, or designee, shall constitute DTSC's administrative decision on the issues in dispute.

c. If the City contests payment of any Oversight Costs to DTSC, it shall comply with the procedures set forth in Paragraph 66. Prior to requesting formal dispute resolution, the City shall notify DTSC's assigned project manager and attempt to informally resolve the dispute with DTSC's project manager and branch chief. The written request for dispute resolution shall describe all issues in dispute and shall set forth the reasons for the dispute, both factual and legal. All notices and submissions required pursuant to Paragraph 66 and the written request for dispute resolution shall be sent to:

Special Assistant for Cost Recovery and Reimbursement Policy
Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0806

Copies of those notices and submissions and of the written request for dispute resolution shall also be sent to those persons designated by DTSC to receive notices and submissions in Section XXVI of this Consent Decree. A decision on the billing dispute will be rendered by the Special Assistant for Cost Recovery and Reimbursement Policy or other DTSC designee.

d. The decision by the division chief under subparagraph b. or the Special Assistant for Cost Recovery and Reimbursement Policy under subparagraph c. shall be binding on the City unless, within 15 (fifteen) days of the receipt of the decision, the City files with the court and serves on DTSC a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. DTSC may file a response within 30 (thirty) days of such motion. The United States shall have the opportunity to provide statements of position and to respond to any City motion.

87. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the City under this Consent Decree, not directly in dispute, unless either EPA or DTSC, as applicable, or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 98. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the City does not prevail on the disputed issue, stipulated

penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

XX. STIPULATED PENALTIES

88. The City shall be liable for stipulated penalties in the amounts set forth in this Section to the United States and DTSC for the City's failure to comply with the requirements of this Consent Decree as specified below, unless excused under Section XVIII (Force Majeure). "Compliance" by the City shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree or, after the date of entry of this Consent Decree, construction of the Muscoy extraction system begun under the Cooperative Agreement, identified below, in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

89. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Subparagraph 89.b:

Penalty Per Violation Per Day	Period of Noncompliance
$ 1500	1st through 14th day
$ 2500	15th through 30th day
$ 10,000	31st day and beyond

b. Compliance Milestones. The Compliance Milestones include both the timely and adequate submittal (as defined in Section XI, Approval of Plans and Other Submissions) of, and compliance with the following documents and requirements:

(1) O&M Plans

(2) Health & Safety Plan

(3) Operational Sampling and Analysis Plan

(4) Contingency Plan

(5) Time Line and Schedule

(6) Pre-Certification Inspection and Report

(7) O&M Completion Report

(8) Statement of Position on De-commissioning

90. Stipulated Penalty Amounts - Reports.

a. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports, including but not limited to Progress Reports and Quarterly Quality Assurance Reports, or other written documents pursuant to this Consent Decree, other than the Compliance Milestones:

Penalty Per Violation Per Day	Period of Noncompliance
$ 1000	1st through 14th day
$ 2500	15th through 30th day
$ 5000	31st day and beyond

91. Stipulated Penalty Amounts – Access, Institutional Controls. For violation of any obligation of Section IX (Access/Institutional Controls) or Paragraphs 27-30 of this Consent Decree, stipulated penalties shall accrue per violation per day in the amount of:

Penalty Per Violation Per Day	Period of Noncompliance
$ 2500	1st through 14th day

$ 5000	15th through 30th day
$ 10,000	31st day and beyond

92. Stipulated Penalty Amounts – Other Obligations of the Consent Decree. For violation of any other obligation of this Consent Decree, stipulated penalties shall accrue per violation per day in the amount of:

Penalty Per Violation Per Day	Period of Noncompliance
$ 2500	1st through 14th day
$ 5000	15th through 30th day
$ 10,000	31st day and beyond

93. In the event that EPA assumes performance of a portion or all of the Work being implemented by the City, pursuant to Paragraph 109 of Section XXI (Covenants Not to Sue by Plaintiffs), the City shall be liable to EPA for a stipulated penalty in the amount of: $ 6,000,000 (six million dollars) or 100% of the response costs incurred by EPA for such work, whichever is less. Such amount shall not be payable from the O&M Escrow, the Construction Escrow or reimbursed to the City from any special account. The City also shall reimburse EPA for all response costs incurred by EPA to perform a portion or all of the Work being implemented by the City. Payments to EPA shall be made in accordance with the procedures in Paragraph 62.e.

94. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under

Section XI (Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st (thirty-first) day after EPA's or DTSC's, as applicable, receipt of such submission until the date that EPA or DTSC, as applicable, notifies the City of any deficiency; (2) with respect to any proposed or actual action or change in work requirements or protocols that EPA determines constitutes a fundamental change to the requirements of this Consent Decree or the SOW, until EPA provides notice of such determination or disapproval; provided, however, that EPA is timely notified of the action or change in work requirements and protocols, including whether such action or change complies with the requirements of this Consent Decree or the SOW; (3) with respect to a decision by the Director of the Superfund Division, EPA Region 9, or a decision by the Statewide Cleanup Operations Division Chief for DTSC under Paragraph 85.a or 86.b. of Section XIX (Dispute Resolution), during the period, if any, beginning on the 31st (thirty-first) day after the date that the City's reply to EPA's or DTSC's, as applicable, Statement of Position is received until the date that the Director of the Superfund Division, EPA Region 9, or the Statewide Cleanup Operations Division Chief for DTSC, as applicable, issues a final decision regarding such dispute; or (4) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), during the period, if any, beginning on the 31st (thirty-first) day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

95. Following the Lead Oversight Agency's determination that the City has

failed to comply with a requirement of this Consent Decree, and after a reasonable opportunity for review and comment by the Support Oversight Agency, the Lead Oversight Agency may give the City written notification of the same and describe the noncompliance. The Lead Oversight Agency may send the City a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether the Lead Oversight Agency has notified the City of a violation.

96. All penalties accruing under this Section shall be due and payable to the Lead Oversight Agency and the Support Oversight Agency, on a 50/50 basis, within 30 (thirty) days of the City's receipt from the Lead Oversight Agency of a demand for payment of the penalties, unless the City invokes the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check(s) made payable either to "EPA Hazardous Substances Superfund," and shall be mailed to

U.S. Environmental Protection Agency
Region IX, Attn: Superfund Accounting
P.O. Box 371099M
Pittsburgh, PA 15251
Attention: David Wood

The transmittal shall indicate that the payment is for stipulated penalties, and shall reference EPA Region 9, Site/Spill ID # 09J5, DOJ Case Number 90-11-3-06902/1 and the name and address of the City. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the United States as provided in Section XXVI (Notices and Submissions).

All payments to DTSC pursuant to this Paragraph shall be made in accordance with Paragraph 65 of this Consent Decree.

97. The payment of penalties shall not alter in any way the City's obligation to complete the performance of the Work required under this Consent Decree.

98. Penalties shall continue to accrue as provided in Paragraph 94 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA or DTSC, as applicable, that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA and DTSC within 15 (fifteen) days of the agreement or the receipt of EPA's or DTSC's decision or order;

b. If the dispute is appealed to this Court and the United States and/or DTSC prevails in whole or in part, the City shall pay all accrued penalties determined by the Court to be owed to EPA and DTSC within 60 (sixty) days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the Court's decision is appealed by the City, the City shall pay all accrued penalties determined by the Court to be owing to the United States and DTSC into an interest-bearing escrow account within 60 (sixty) days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 (sixty) days. Within 15 (fifteen) days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA and DTSC, or to the City to the extent that they prevail.

99. If the City fails to pay stipulated penalties when due, EPA and/or DTSC

may institute proceedings to collect the penalties, as well as Interest. The City shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 95.

100. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States or DTSC to seek any other remedies or sanctions available by virtue of the City's violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l). Provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is collected hereunder, except in the case of a willful violation of the Consent Decree.

101. Notwithstanding any other provision of this Section, the United States or DTSC may, in their unreviewable discretion, waive any portion of stipulated penalties that have accrued to them pursuant to this Consent Decree.

XXI. COVENANTS BY THE UNITED STATES AND DTSC

102. a. In consideration of the actions that will be performed by the City and the payments that will be made by the City under the terms of the Consent Decree, and except as specifically provided in Paragraph 106 of this Section, the United States covenants not to sue or to take administrative action against the City pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606, 9607(a), with respect to the Work, and the work performed under the Cooperative Agreement, subject to the United States' reservation of rights with respect to the Cooperative Agreement, and for recovery of Past U.S.

Response Costs and Future U.S. Response Costs. The United States also releases and covenants not to sue the City and DTSC for the costs of the litigation called *City of San Bernardino Municipal Water Department vs. United States of America, Department of the Army,* Civ. No. CV96-8867 MRP, and *State of California v. United States of America, Department of the Army,* Civ. No. 96-5205-MRP in this Court, including but not limited to attorneys' fees, expert witness fees and litigation support costs, incurred through the date upon which this Consent Decree is no longer subject to appeal, except to the extent such costs are expressly payable pursuant to this Consent Decree. These covenants not to sue as to the City and DTSC shall take effect upon entry of this Consent Decree. These covenants not to sue are conditioned with respect to the City upon the satisfactory performance by the City of its obligations under this Consent Decree. These covenants not to sue extend only to the City and DTSC, as appropriate, and do not extend to any other person.

b. In consideration of the actions that have been performed and the payments that will be made by the Settling Federal Agencies under the terms of this Consent Decree, and except as specifically provided in Paragraph 106 of this Section, EPA covenants not to take administrative action against the Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606, 9607(a), with respect to the Work, and the work performed under the Cooperative Agreement, and for recovery of Past U.S. and Future U.S. Response Costs. EPA's covenant shall take effect upon the payments required by Paragraph 60 of Section XVI (Payments for Response Costs). EPA's covenant is conditioned upon the satisfactory performance by the Settling Federal Agencies of their obligations under this Consent Decree. EPA's covenant extends only to the Settling

Federal Agencies and does not extend to any other person.

c. United States' Pre-certification Reservations -- Unknown Conditions or Information. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel

(1) the performance of further response actions relating to the Site, or

(2) the reimbursement of the United States for additional costs of response

if, prior to certification that the Muscoy OU Interim Remedial Action is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2):

(1) information, previously unknown to EPA, is received, in whole or in part, and

(2) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Interim Remedial Actions are not protective of human health or the environment.

d. United States' Pre-certification Reservations -- Non-Routine O&M. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel

(1) the performance of further response actions relating to the

Site, or

(2) the reimbursement of the United States for additional costs of response

if, prior to certification that the Muscoy OU Interim Remedial Action is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), EPA determines that the Non-Routine O&M that can be required under the SOW is not protective of human health or the environment.

e. United States' Post-certification Reservations -- Unknown Conditions or Information. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel

(1) the performance of further response actions relating to the Site, or

(2) the reimbursement of the United States for additional costs of response

if, subsequent to certification that the Muscoy OU Interim Remedial Action is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2):

(1) conditions at the Site, previously unknown to EPA, are discovered, or information, previously unknown to EPA, is received, in whole or in part, and

(2) EPA determines that these previously unknown conditions or

this information together with other relevant information indicate that the Interim Remedial Actions, or any of them, are not protective of human health or the environment.

f. United States' Post-certification Reservations -- Non-Routine O&M. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel

(1) the performance of further response actions relating to the Site, or

(2) the reimbursement of the United States for additional costs of response

if, subsequent to certification that the Muscoy OU Interim Remedial Action is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2), EPA determines that the Non-Routine O&M that can be required under the SOW is not protective of human health or the environment.

g. For purposes of Paragraph 102(c), the information and the conditions known to EPA shall include only (i) that information and those conditions known to EPA as of the dates the RODs were signed and set forth in the Records of Decisions for the Newmark and Muscoy OUs and the administrative records supporting the Records of Decision; and (ii) information required to be provided by the City under the Cooperative Agreements up to the date that EPA certifies that the Muscoy Operable Unit is operational and functional. For purposes of Paragraph 102(e), the information and the conditions known to EPA shall include only (i) the information and conditions listed for Paragraph

102(c); and (ii) that information and those conditions known to EPA as of the date of certification that the Muscoy OU Interim Remedial Action is operational and functional pursuant to 40 C.F.R. § 300.435(f)(2) and set forth in the Records of Decision, the administrative records supporting the Records of Decision, the post-ROD administrative records, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to such certification.

103. In consideration of the City's actions and its obligations under this Consent Decree, and except as specifically provided in Paragraph 108 (General Reservations of Rights by DTSC), DTSC covenants not to sue or take administrative action against the City pursuant to Section 107 of CERCLA, 42 U.S.C. § 9607, Section 7003 of the Resource Conservation and Recovery Act, 42 U.S.C. § 6973, or any State counterparts of these statutes, or to seek any natural resource damages relating to the Newmark Groundwater Contamination Superfund Site. These covenants will take effect upon entry of this Consent Decree. These covenants not to sue are conditioned upon satisfactory performance of the City's obligations under this Consent Decree. These covenants not to sue extend only to the City, and not to any other person.

104. In consideration of the actions that have been performed and the payments that will be made by the Settling Federal Agencies and the City under the terms of the Consent Decree, and except as specifically provided in Paragraph 108 of this Section, DTSC covenants not to sue or to take administrative action against the City and the United States pursuant to Sections 107(a) and 113 of CERCLA, 42 U.S.C. §§ 9607(a), 9613, California Health & Safety Code § 25360 or any other State law counterparts of these

statutes, with respect to the Newmark and Muscoy OUs, the Work, the work performed under the Cooperative Agreement, recovery of DTSC Past Response Costs, DTSC Future Response Costs, DTSC Oversight Costs, any past State order related to the groundwater contamination at the Newmark Groundwater Contamination Superfund Site, and natural resource damages, including the reasonable costs of assessing any injury, destruction or loss of natural resources. DTSC also releases and covenants not to sue the City and the United States for the costs of the litigation called *State of California v. United States of America, Department of the Army,* Civ. No. 96-5205-MRP in this Court, including but not limited to attorneys' fees, expert witness fees and litigation support costs. These covenants not to sue shall take effect upon the Effective Date of this Consent Decree. These covenants not to sue are conditioned with respect to the applicable Parties upon the satisfactory performance by the respective Parties of their obligations under this Consent Decree. These covenants not to sue extend only to the United States and the City and do not extend to any other person. Upon approval by the Court of this Consent Decree, the natural resource damages claims pled in DTSC's complaint shall be dismissed with prejudice.

105. Covenant by the Settling Federal Agencies. The Settling Federal Agencies hereby agree not to assert any direct or indirect claim with respect to the Site for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113, or any other provision of law, for Past U.S. Response Costs and Future U.S. Response Costs as defined herein, with respect to the Work, and the work performed under the Cooperative Agreement, or this Consent Decree, or any claims for costs of litigation in

the action called *City of San Bernardino Municipal Water Department v. United States, Department of the Army,* Civ. No. CV96-8867 MRP in this Court, and the action called *State of California v. United States of America. Department of the Army,* Civ. No. 96-5205-MRP in this Court, including but not limited to attorneys' fees, expert witness fees and litigation support costs through the date upon which this Consent Decree is no longer subject to appeal.

106. General Reservations of Rights by the United States. The United States reserves, and this Consent Decree is without prejudice to, all rights against the City (and with respect to EPA, all rights against the Settling Federal Agencies) with respect to all matters not expressly included within the United States' covenant not to sue. Notwithstanding any other provision of this Consent Decree, the United States reserves all rights against the City (and with respect to EPA, all rights against the Settling Federal Agencies) with respect to:

a. claims based on a failure to meet a requirement of this Consent Decree;

b. liability based upon the Party's transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the RODs, the ESD, the Work, the SOW, or otherwise ordered by EPA, after signature of this Consent Decree by such Party;

c. liability for damages for injury to, destruction of, or loss of natural resources under federal trusteeship at the Newmark Groundwater Contamination Superfund

Site, including the cost of assessing such injury, destruction or loss;

d. criminal liability;

e. liability for violations of federal or state law which occur during or after implementation of the Interim Remedial Actions;

f. liability, prior to the final Certification or Notice of Completion of the Work, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 17 (Modification of the SOW or Related Work Plans);

g. liability for additional work at the Newmark or Muscoy OU that is not required pursuant to this Consent Decree, for additional operable units or the final response action at the Newmark Groundwater Contamination Superfund Site;

h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site that are not included in United States Past Costs;

i. liability for costs that the United States will incur related to the Site but that are not within the definition of Past U.S. Response Costs or Future U.S. Response Costs;

j. liability of the City to reimburse EPA for disbursements under the Cooperative Agreement for Work covered by this Consent Decree in the event the same Work is also reimbursable under this Consent Decree;

k. liability of the City for United States Future Response Costs, if any, incurred after the earliest of the time periods described in Paragraph 14.a applicable to the

costs in question, provided, however, that such costs shall first be offset by the amount of any disbursement under Paragraph 60.a.2 or 60.a.5; and

l. liability arising from the past, present, or future arrangement for disposal, release, or threat of release of Waste materials outside of the Site.

107. The Settling Federal Agencies reserve, and this Consent Decree is without prejudice to

a. claims against DTSC for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of DTSC while acting within the scope of his office or employment under circumstances where DTSC, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a state employee as provided in comparable state law to 28 U.S.C. § 2671, nor shall any such claim include a claim based on EPA's or the DTSC's selection of response actions, or the oversight or approval of any Party's plans or activities; and

b. contribution claims against DTSC in the event any claim is asserted by DTSC against the City or the Settling Federal Agencies, but only to the same extent and for the same matters, transactions or occurrences as are raised in the claim of DTSC against the City or the Settling Federal Agencies.

108. General Reservations of Rights by DTSC. The covenants not to sue set forth above do not pertain to any matters other than those expressly specified in Paragraph

104, and except as specifically provided in this Paragraph. DTSC reserves, and this Consent Decree is without prejudice to DTSC's rights to pursue, other claims against the City and the Settling Federal Agencies, with respect to all other matters, including but not limited to, the following:

a. claims that either the City or the Settling Federal Agencies have failed to meet a requirement of this Consent Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials outside of the Site;

c. liability for future disposal of Waste Material at the Site, other than as provided in the RODs, the ESD, the SOW, the Work, or otherwise ordered by EPA; provided however that the production, storage and distribution of treated water and the transmission of untreated water for treatment shall not under any circumstances give rise to DTSC claims alleging City liability;

d. criminal liability;

e. liability for violations of federal or state law which occur during or after implementation of the Interim Remedial Actions;

f. liability by Settling Federal Agencies, prior to Certification of Completion of the Work, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 17 (Modification of the SOW or Related Work Plans);

g. liability by Settling Federal Agencies for additional work at the Newmark or Muscoy OU that is not required pursuant to this Consent Decree, for

additional operable units or the final response action at the Newmark Groundwater Contamination Superfund Site, or for any additional costs of response which may be required if (1) EPA makes a determination pursuant to Paragraph 102.d or 102.f that the Non-Routine O&M that can be required under the SOW is not protective of human health or the environment, or (2) EPA makes a determination pursuant to Paragraph 102.c or 102.e that previously unknown conditions or information together with any other relevant information indicates that the Interim Remedial Actions are not protective of human health or the environment;

h. liability by Settling Federal Agencies for costs that DTSC will incur related to the Site but that are not within the definition of DTSC Past Response Costs, DTSC Future Response Costs, Oversight Costs or natural resource damages; and

i. liability for contamination at or emanating from other sites including but not limited to the Norton Air Force Base Superfund Site.

109. Work Takeover In the event that EPA determines that the City has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portions of the Work as EPA determines necessary. The City may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 86.a, to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be paid by the City as Extraordinary Costs within 30 (thirty) days of a demand by EPA, according to the

procedures set forth in Paragraph 62.e. Such payments may be made from the O&M Escrow. Subject to EPA's unreviewable discretion, EPA may determine, with DTSC's concurrence, that DTSC may take over the Work under the circumstances described in this Paragraph. In that event, DTSC costs incurred in performing the Work pursuant to this Paragraph shall be paid by the City to DTSC. Payments to DTSC in accordance with this Paragraph shall be made within 30 (thirty) days of a demand by DTSC according to the procedures in Paragraph 65, and may be made from the O&M Escrow. Such costs shall not be subject to any cap for recovery of DTSC or EPA Oversight Costs.

110. Lead Oversight Takeover

(a) It is EPA's statutory obligation to ensure the successful completion of the Interim Remedies. If EPA determines that DTSC is not able to perform the Lead Oversight Agency functions in a timely and effective manner, EPA may resume the Lead Oversight Agency role until DTSC is able to resume that role. EPA shall meet and confer with DTSC before determining to resume the Lead Oversight Agency role; however, EPA's determination shall not be subject to dispute resolution. Such takeover shall be effective upon notice by EPA to DTSC and the City in accordance with Section XVII (Notices and Submissions).

(b) In the event that EPA takes over as Lead Oversight Agency, DTSC shall not pay a stipulated penalty, but EPA shall be entitled to be paid its oversight costs by the City, for the additional work entailed in EPA's takeover of the work, notwithstanding whether DTSC has exhausted the funds available to be paid to it for oversight pursuant to Paragraph 65 of this Consent Decree. In no event shall DTSC be responsible for

reimbursing EPA for any oversight costs beyond what EPA is reimbursed by the City. Payment to the United States shall be made pursuant to Paragraph 62.e.

(c) If EPA subsequently determines that DTSC is able to perform the Lead Oversight Agency functions in a timely and effective manner, EPA may return the Lead Oversight Agency functions to DTSC, which shall be effective upon notice by EPA to DTSC and the City in accordance with Section XVII (Notices and Submissions).

111. Notwithstanding any other provision of this Consent Decree, the United States and DTSC retain all authority and reserve all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY THE CITY OF SAN BERNARDINO

112. In consideration of DTSC's actions and its obligations under this Consent Decree, and except as specifically provided in Paragraph 114 (Reservations of Rights by the City), the City covenants not to sue or take administrative action against DTSC pursuant to Sections 107 and/or 113 of CERCLA, 42 U.S.C. §§ 9607, 9613, Section 7003 of the Resource Conservation and Recovery Act, 42 U.S.C. § 6973, and any State law counterparts of these statutes, or to seek any natural resource damages relating to the Newmark Groundwater Contamination Superfund Site. These covenants not to sue shall take effect upon entry of this Consent Decree. These covenants not to sue extend only to DTSC and any successor agency and not to any other person.

113. In consideration of the actions that have been performed and the payments that will be made by the United States, and subject to the reservations in Paragraph 114, the City hereby covenants not to sue and agrees not to assert any claims or causes of action

against the United States with respect to the Work, the work performed under the Cooperative Agreement, the work performed under any past State order related to the groundwater contamination at the Newmark Groundwater Contamination Superfund Site, or any obligation of the City under Paragraph 14 of this Consent Decree, City Past and City Future Response Costs as defined herein, any costs incurred by the City that have been or are reimbursed by any disbursement pursuant to Paragraph 60.a.2 or 60.a.5, and other past response actions or costs taken or incurred by the City, or this Consent Decree, no matter how such claims are pled or styled, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, 9613, or any other provision of law, but without prejudice to the City's rights under the Cooperative Agreement and this Consent Decree to be reimbursed for work it has conducted pursuant to the Cooperative Agreement for the Newmark and Muscoy OUs prior to the funding of the escrows under this Consent Decree;

b. any claims against the United States under CERCLA Sections 107 or 113, 42 U.S.C. §§ 9607, 9613, or state law, related to the Site or the Site-wide Monitoring;

c. any claims arising out of response actions at or in connection with the Site or the Site-wide Monitoring, including any claims arising under the United States Constitution, the California Constitution, state law, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law, arising out of or relating to past or future access to, imposition of deed restriction or easements, or

other restrictions on the use and enjoyment of property owned or controlled by the City;

d. any claims for costs, fees or expenses incurred in this action (including claims arising under the Equal Access to Justice Act, as amended, 28 U.S.C. § 2412) or under any provision of state law, through the date upon which this Consent Decree is no longer subject to appeal;

e. Any claims for costs, fees or expenses arising from or relating to the groundwater management and permitting program described in Paragraphs 27-30;

f. any claims for costs of litigation in the action called *City of San Bernardino Municipal Water Department v. United States, Department of the Army,* Civ. No. CV96-8867 MRP in this Court, including but not limited to attorneys' fees, expert witness fees and litigation support costs, through the date upon which this Consent Decree is no longer subject to appeal; and

g. any direct or indirect claim for disbursement from any special account established pursuant to this Consent Decree except as expressly provided for in this Consent Decree.

114. Reservation of Rights by the City. The City reserves, and this Consent Decree is without prejudice to

a. claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, or DTSC, subject to comparable state law, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States or DTSC while acting within the scope of his office or employment under circumstances where the United

States or DTSC, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; or a state employee as provided in comparable state law, nor shall any such claim include a claim based on EPA's or DTSC's selection of response actions, or the oversight or approval of any Party's plans or activities. With respect to the United States, the foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA;

b. CERCLA claims and contribution claims against the Settling Federal Agencies in the event any claim is asserted by the United States or DTSC against the City or the Settling Federal Agencies, but only to the same extent and for the same matters, transactions or occurrences as are raised in the claim of the United States or DTSC against the City or the Settling Federal Agencies;

c. City claims for reimbursement under the Cooperative Agreement, arising from costs incurred by the City prior to the funding of the O&M and Construction Escrows as set forth in Paragraph 60.a pursuant to this Consent Decree, except for costs that are the sole responsibility of the City under this Consent Decree or reimbursable to EPA under Paragraph 62.c;

d. Claims against the Settling Federal Agencies for liability, prior to the final Certification or Notice of Completion of the Work, for additional response actions that

EPA determines are necessary to achieve the Performance Standards, but that cannot be required pursuant to Paragraph 17 (Modification of SOW or Related Work Plans);

e. Liability for additional work at the Newmark or Muscoy OU that is not required pursuant to the Consent Decree, for additional operable units, or the final response action at the Newmark Groundwater Contamination superfund Site;

f. City claims for relief arising from contamination at or emanating from other sites, including, but not limited to, the Norton Air Force Base Superfund Site;

g. City claims for O&M costs and City Future Response Costs, if any, incurred after the earliest of the time periods described in Paragraph 14.a applicable to the costs in question, provided, however, that such costs shall first be offset by the amount of any disbursement under Paragraph 60.a.2 or 60.a.5; and

h. City claims for liability for costs the City will incur related to the Site that are not within the definition of City Past Response Costs or City Future Response Costs.

115. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

116. The City and the Settling Federal Agencies agree not to assert any claims and to waive all claims or causes of action that they may have for all matters relating to the Site, including for contribution, against any person where the person's liability to the City or Settling Federal Agencies with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at

the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if:

a. any materials contributed by such person to the Site constituting Municipal Solid Waste (MSW) or Municipal Sewage Sludge (MSS) did not exceed 0.2% of the total volume of waste at the Site; and

b. any materials contributed by such person to the Site containing hazardous substances, but not constituting MSW or MSS, did not exceed the greater of (i) 0.002% of the total volume of waste at the Site, or (ii) 110 gallons of liquid materials or 200 pounds of solid materials.

c. This waiver shall not apply to any claim or cause of action against any person meeting the above criteria if EPA has determined that the materials contributed to the Site by such person contributed or could contribute significantly to the costs of response at the Site. This waiver also shall not apply with respect to any defense, claim, or cause of action that the City, DTSC or the Settling Federal Agencies may have against any person if such person asserts a claim or cause of action relating to the Site against such Party.

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

117. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this decree may have under applicable law. Except as provided in Paragraph 116, each Party expressly reserves any and all rights (including, but not limited to, any right to

contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

118. The Parties agree, and by entering this Consent Decree this Court finds, that the City and the Settling Federal Agencies are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), for matters addressed in this Consent Decree. Matters addressed in this Consent Decree are: (a) U.S., DTSC and City Past Response Costs; (b) U.S., DTSC and City Future Response Costs; (c) the cost of implementing the Work performed under this Consent Decree; (d) the work performed under the Cooperative Agreement or under any past State order related to the groundwater contamination at the Newmark Groundwater Contamination Superfund Site, (e) as to the City, all DTSC costs of any kind incurred at any time related to the Newmark Groundwater Contamination Superfund Site unless otherwise reserved; (f) DTSC natural resource damages; and (g) the costs, including but not limited to attorneys' fees, expert witness fees and litigation support of the actions *called City of San Bernardino Municipal Water Department v. United States, Department of the Army,* Civ. No. CV96-8867 MRP, and *State of California v. United States of America, Department of the Army,* Civ. No. 96-5205-MRP in this Court, incurred through the date upon which this Consent Decree is no longer subject to appeal.

119. The City agrees that with respect to any suit brought by the City for matters related to this Consent Decree the City will notify the United States and DTSC in writing no later than 60 (sixty) days prior to the initiation of such suit or claim.

120. The City also agrees that with respect to any suit or claim for contribution brought against it for matters related to this Consent Decree it will notify in writing the United States and DTSC within 10 (ten) days of service of the complaint on the City. In addition, the City shall notify the United States and DTSC within 10 (ten) days of service or receipt of any Motion for Summary Judgment and within 10 (ten) days of receipt of any order from a court setting a case for trial.

121. In any subsequent administrative or judicial proceeding initiated by the United States or DTSC for injunctive relief, recovery of response costs, or other appropriate relief relating to the Newmark Groundwater Contamination Superfund Site, the City shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants by the United States and DTSC). In any subsequent administrative or judicial proceeding initiated by the City for injunctive relief, recovery of response costs, or other appropriate relief relating to the Newmark Groundwater Contamination Superfund Site, the United States and DTSC shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant not to sue set forth in

Section XXII (Covenant by the City of San Bernardino).

XXIV. ACCESS TO INFORMATION

122. The City and the Army shall provide to EPA and DTSC, upon request, copies of all non-privileged documents and information within their possession or control or that of their contractors or agents relating to activities at the Newmark Groundwater Contamination Superfund Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. The City and the Army shall also make available to EPA and DTSC, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work. In connection with this litigation and the negotiation of this Consent Decree, the City and the Army have provided EPA and DTSC extensive documents relating to the Site and its history. The City has also provided periodic reports and other information required under the Cooperative Agreement. The City and the Army shall not be required to produce or make available such previously provided information or documents a second time pursuant to this Paragraph. Expert witnesses were retained by the City and the Army and much privileged information was assembled in the course of the litigation. Privileged information need not be submitted to EPA or DTSC, but any sampling data from the Site or any other data referenced in this Paragraph, not previously submitted to EPA by the City or the Army, shall be submitted to EPA within 60 (sixty) days after the Effective Date, and also provided to DTSC.

123. Business Confidential and Privileged Documents.

a. The City or Army may assert business confidentiality claims covering part or all of the documents or information submitted to EPA and DTSC under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA and DTSC, or if EPA has notified the City or Army that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA, the public may be given access to such documents or information without further notice to the City.

b. The City or Army may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the City or Army asserts such a privilege in lieu of providing documents, the City or Army shall provide EPA and DTSC with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information: and (6) the privilege asserted by the City. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree or the Cooperative Agreement shall be withheld on the grounds that they are privileged. As against EPA and each other, the City or Army also

shall not assert a claim of confidentiality or privilege with respect to any documents or information provided in the course of negotiation of this Consent Decree.

124. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

125. Until 10 (ten) years after the City's receipt of EPA's final notification pursuant to Paragraph 57.d of Section XIV (Certification or Notice of Completion of the Work), the City and the Army shall preserve and retain all records and documents now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate or governmental retention policy to the contrary. Until 10 (ten) years after the City's and Army's receipt of EPA's final notification pursuant to Paragraph 57.d or 57.e of Section XIV (Certification or Notice of Completion), the City and Army shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to the performance of the Work. As part of five-year reviews, EPA may, in its unreviewable discretion, agree to examine any proposal to shorten the document retention requirements of this Consent Decree as they relate to the performance of the Work. EPA may, in its unreviewable discretion, in consultation with DTSC and the City or Army, as applicable, shorten the document retention period with respect to documents that no longer

serve a useful purpose in the performance of the Work or that will not be of value as permanent records of EPA. With respect to the two Protective Orders relating to the Site, one signed in December 1997 and the other signed in or about June 1999, and both attached as Appendix J to this Consent Decree, the Parties agree that the terms and conditions of the aforementioned Protective Orders relating to document retention are hereby superseded such that the conditions for document retention as embodied in this Consent Decree shall take precedence over the terms and conditions mentioned in the Protective Orders. Furthermore, the Parties agree that although the June 1999 Protective Order places the burden of control of the City's documents on the City's attorneys, the City's attorneys may transfer the City's documents (collected pursuant to either the1997 or the 1999 Protective Order) to the City for retention upon the Effective Date of this Consent Decree, and none of the Parties will contest this action.

126. The United States acknowledges that each Settling Federal Agency is subject to all applicable Federal record retention laws, regulations, and policies, including Army Regulation 25-400-2, Appendix B, FN: 27-40e.

127. At the conclusion of the document retention period in Paragraph 126, the City and the Army shall notify the EPA at least 90 (ninety) days prior to the destruction of any such records or documents, and, upon request by the EPA, the City or the Army shall deliver any such records or documents to EPA. The City may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the City asserts such a privilege, the City shall provide EPA with the following: (1) the title of the document, record, or

information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by the City. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

128. The City, the Army and DTSC have exchanged extensive documents and information related to allegations of liability at this Site. The City, DTSC and Army certify that, to the best of their knowledge and belief, after thorough inquiry, they have complied in good faith with their discovery obligations under the applicable rules, and have complied in good faith with any EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927, and did not knowingly alter, mutilate, discard, destroy or otherwise dispose of any records, documents or other information responsive to such discovery or information requests or otherwise relating to potential liability regarding the Site.

XXVI. NOTICES AND SUBMISSIONS

129. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be sent to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice

requirement of the Consent Decree with respect to the United States, EPA, DTSC and the City.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-11-3-06902 /1

Chief, Environmental Defense Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 23986
Washington, DC 20026-3986
Re: DJ 90-11-6-69

Office of the United States Attorney
Chief, Civil Division
Room 7516 Federal Building
300 North Los Angeles Street
Los Angeles, CA 90012

Director, Superfund Division
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street, SFD
San Francisco, CA 94105

As to EPA:

Dr. Kim Hoang
EPA Project Coordinator -- Newmark Site
United States Environmental Protection Agency
Region 9
75 Hawthorne Street, SFD-7-4
San Francisco, CA 94105

As to the Regional Financial Management Officer:

Joseph Schmidt
United States Environmental Protection Agency
Region 9
75 Hawthorne Street, PMD-5

San Francisco, CA 94105

As to DTSC:

Thomas Cota
Chief, Southern California Cleanup Operations Branch, Cypress Office
5796 Corporate Avenue
Cypress, CA 90630

Dr. Yasser Aref
Department of Toxic Substances Control
Project Manager
5796 Corporate Avenue
Cypress, CA 90630

Ann Rushton
Deputy Attorney General
Environment Section
California Department of Justice
300 South Spring Street
Los Angeles, CA 90013

As to the City:

Stacy Aldstadt
Deputy General Manager
City of San Bernardino Municipal Water Dept.
300 North D Street
San Bernardino, CA 92418 [overnight delivery]
P.O. Box 710
San Bernardino, CA 92402 [U.S. Mail]

XXVII. EFFECTIVE DATE

130. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXVIII. RETENTION OF JURISDICTION

131. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Parties for the duration of the performance of the terms and provisions of

this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof. However, nothing in this Consent Decree shall prevent EPA from taking any action in accordance with the National Contingency Plan.

XXIX. APPENDICES

132. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the Newmark ROD.

"Appendix B" is the Muscoy ROD.

"Appendix C" is the description and/or map of the Site.

"Appendix D" is the SOW.

"Appendix E" is the proposed list of planned City treatment plants and transmission systems to expand the City's potable water delivery capacity.

"Appendix F" is the draft easement described in Section IX (Access/Institutional Controls).

"Appendix G" is a draft of the San Bernardino Pollution Legal Liability Clean-up Cost Cap Insurance Policy selected by the City for the investment and/or retention of the O&M Escrow, Construction Escrow and any other funds disbursed to the City for the performance of the Work or other items funded by this Consent Decree.

"Appendix H" is the draft ordinance for the Permitting Program described in

Section IX (Access and Institutional Controls).

"Appendix I" is the ESD.

"Appendix J" consists of the two protective orders described in Paragraph 125.

XXX. COMMUNITY RELATIONS

133. The City shall propose to EPA its participation in the community relations plan that has been developed by EPA. EPA will determine the appropriate role for the City under the plan. The City shall also cooperate with EPA and DTSC in providing information regarding the Work to the public. As requested by EPA or DTSC, the City shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA or DTSC to explain activities at or relating to the Site.

XXXI. MODIFICATION

134. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of the Lead Oversight Agency, with reasonable opportunity to comment by the Support Agency, and the Parties. All such modifications shall be made in writing.

135. Except as provided in Paragraph 17 (Modification of the SOW or Related Work Plans), no modifications shall be made to this Consent Decree and no material modifications shall be made to the SOW without written notification to and written approval of the United States, DTSC, the City and the Court. Such modifications shall be effective upon their approval by the Court. Modifications to the SOW that do not materially alter that document may be made by written agreement between the Lead

Oversight Agency and the City, with the concurrence of the Support Oversight Agency. Prior to providing their approval to any such modification, EPA and DTSC will provide each other with a reasonable opportunity to review and comment on the proposed modification.

136. Nothing in this Consent Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

137. Nothing in this Consent Decree shall be deemed to limit EPA's authority to adopt additional Explanations of Significant Differences, to amend the RODs, to issue additional RODs for the Newmark Groundwater Contamination Superfund Site, or to take any other action consistent with the NCP.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

138. This Consent Decree shall be lodged with the Court for a period of not less than 30 (thirty) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. The other Parties consent to the entry of this Consent Decree without further notice.

139. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation among any of the Parties.

XXXIII. SIGNATORIES/SERVICE

140. Each undersigned representative of the City, the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice, and the Deputy Attorney General for the California Department of Justice, certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

141. The City and State each hereby agree not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the other Parties to this Consent Decree in writing that it no longer supports entry of the Consent Decree.

142. The City and State shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. The City hereby agrees to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons.

XXXIV. FINAL JUDGMENT

143. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States, DTSC and the City. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS __ DAY OF _____, 2004.

_____
United States District Judge

THE UNDERSIGNED PARTY enters into this Consent Decree relating to the Newmark Groundwater Contamination Superfund Site.

FOR THE UNITED STATES OF AMERICA

8-5-04
Date

Tom Sansonetti

Thomas L. Sansonetti
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

8/5/04
Date

—5— by Martin F. McDermott

Cynthia S. Huber
Senior Attorney
General Litigation Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 663
Washington, D.C. 20044-0663
(202) 514-5273

8/5/2004
Date

Martin F. McDermott

Martin McDermott
Environmental Defense Section
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
(202) 514-4122

THE UNDERSIGNED PARTY enters into this Consent Decree relating to the Newmark Groundwater Contamination Superfund Site.

8-9-04
Date

Keith Takata

Keith Takata
Director, Superfund Division, Region 9
U.S. Environmental Protection Agency
75 Hawthorne St., SFD-1
San Francisco, CA 94105

8/9/04
Date

Marie M. Rongone

Marie M. Rongone
Senior Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne St., ORC-3
San Francisco, CA 94105
(415) 972-3891

THE UNDERSIGNED PARTY enters into this Consent Decree relating to the Newmark Groundwater Contamination Superfund Site.

FOR THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

7/2/04
Date

Thomas Cota, Chief
Southern California Cleanup Operations Branch
Cypress Office
5796 Corporate Avenue
Cypress, CA 90630

July 21, 2004
Date

Ann Rushton
Deputy Attorney General
Environment Section
California Department of Justice
300 South Spring Street
Los Angeles, CA 90013
(213) 897- 2608

CERTIFICATE OF SERVICE

I hereby certify that on August 10, 2004, a true and accurate copy of the foregoing Notice of Lodging of Consent Decree was served on the following counsel:

Russell V. Randle Patton Boggs, L.L.P. 2550 M Street, N.W. Washington, D.C. 20037-1350 202-457-5282	By: _X__Federal Express ___First Class U.S. Mail ___Hand Delivery
Thomas N. Jacobson Gresham, Savage, Nolan & Tilden 3750 University Ave. Suite 250 Riverside, CA 92501 951-684-2171	By: _X__Federal Express ___First Class U.S. Mail ___Hand Delivery
Ann Rushton Deputy Attorney General State of California Department of Justice 300 South Spring St. Los Angeles, CA 90013-1204 213-897-2608	By: _X__Federal Express ___First Class U.S. Mail ___Hand Delivery

Martin F. McDermott

THE UNDERSIGNED PARTY enters into this Consent Decree relating to the Newmark Groundwater Contamination Superfund Site.

FOR THE CITY OF SAN BERNARDINO [1]

As of
June 17, 2004
Date

Signature:
Name (print):
Title:
Address:

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Signature -S-
Address:
Name (print): Thomas N. Jacobson
Title: Attorney Gresham, Savage, Nolan & Tilden
Address: 3750 University Ave. Suite 250
Riverside CA
92501

Ph. Number: 951-684-2171

[1] EPA is requesting that the City provide this information so that the decree can be completed.

List of Appendices to the Consent Decree

Appendix A – Newmark ROD (copy included)

Appendix B – Muscoy ROD (copy included)

Appendix C – description and/or map of the Site – (copy included)

Appendix D – Statement of Work (copy included)

Appendix E – proposed list of planned City treatment plants and transmission systems to expand the City's potable water delivery capacity (copy included)

Appendix F – draft easement described in Section IX (Access/Institutional Controls) (copy included)

Appendix G – draft of the San Bernardino Pollution Legal Liability Clean-up Cost Cap Insurance Policy selected by the City for the investment and/or retention of the O&M Escrow, Construction Escrow and any other funds disbursed to the City for the performance of the Work or other items funded by this Consent Decree (currently being negotiated with AIG and the City; document to be provided by City)

Appendix H – draft ordinance for the Permitting Program described in Section IX (Access and Institutional Controls) (copy included)

Appendix I – Explanation of Significant Differences (not included; has not yet been signed by EPA)

Appendix J – protective orders described in Paragraph 125 (copies will be provided by City)

A

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NEWMARK 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

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RECORD OF DECISION

NEWMARK OPERABLE UNIT INTERIM REMEDY

PART I. DECLARATION

SITE NAME AND LOCATION

Newmark Groundwater Contamination Superfund Site
Newmark Operable Unit
San Bernardino, California

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Newmark Operable Unit, Newmark Groundwater Contamination Superfund site, chosen in accordance with CERCLA as amended by SARA and, to the extent practicable, the National Contingency Plan. This decision is based on the administrative record for this operable unit.

In a letter to EPA dated July 29, 1993 the State of California concurred with the selected remedy for the Newmark OU.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare or the environment.

DESCRIPTION OF THE REMEDY

EPA has selected an interim remedy for the Newmark plume of groundwater contamination in the Newmark Groundwater Contamination Superfund Site. This portion of the site cleanup is referred to as the Newmark Operable Unit (OU). The Newmark OU is an interim action focusing on contamination in the underground water supply in the Bunker Hill Basin of San Bernardino, north and east of the Shandin Hills (Figures 1 and 2). The portion of the groundwater contamination west of the Shandin Hills, called the Muscoy OU, will be addressed in a separate action. An OU is a discrete action that comprises an incremental step toward comprehensively addressing Superfund site problems. The remedy and all of the alternatives presented in the feasibility study were developed to meet the following specific objectives for the Newmark OU:

- To inhibit migration of groundwater contamination into clean portions of the aquifer;
- To limit additional contamination from continuing to flow into the Newmark OU plume area;

- To begin to remove contaminants from the groundwater plume for eventual restoration of the aquifer to beneficial uses (This is a long-term project objective rather than an immediate objective of the interim action.)

The remedy involves groundwater extraction (pumping) and treatment of 8,000 gallons per minute (gpm) in the vicinity of 14th Street, between Arrowhead and Waterman Avenues, at the leading edge of the contaminant plume, and an additional 4,000 gpm at the Newmark wellfield (near 48th Street and Little Mountain Drive) where the contamination enters the eastern part of the valley (Fig. 2). The exact number, location and other design specifics of new extraction wells will be determined during the remedial design phase of the project to inhibit the migration of the contaminant plume most effectively.

All the extracted contaminated groundwater shall be treated to remove VOCs by either of two proven treatment technologies: **granular activated carbon (GAC) filtration** or **air stripping**. EPA determined during the Feasibility Study (March 1993) that these treatment technologies are equally effective at removing VOCs and are similar in cost at this OU. Both technologies have been proven to be reliable in similar applications. It is acceptable to use one technology for the northern (Newmark wellfield) facility and the other at the southern treatment facility. As a result of comments received during the public comment period, EPA may use a modification of liquid phase GAC (Advanced Oxidation pretreatment) if this modification proves to be effective and economical during design phase testing and analysis. The VOC treatment technology which best meets the objectives of the remedy for the Newmark OU will be determined during the remedial design phase, when more detailed information is available to assess effectiveness and cost.

After treatment, the water shall meet drinking water standards (maximum contaminant levels or MCLs) for VOCs. If air stripping treatment is selected, air emissions shall be treated using the best available control technology (e.g., vapor phase GAC) to ensure that all air emissions meet applicable or relevant and appropriate requirements.

The treated water will be piped to the public water supply system for distribution. Groundwater monitoring wells will be installed and sampled regularly to help evaluate the effectiveness of the remedy.

If the public water supply system does not accept any or all of the treated water (possibly due to water supply needs), any remaining portion of water will be recharged into the aquifer via reinjection wells near the edge of the plume. The number, location and design of the reinjection wells will be determined during the remedial design phase to best meet the objectives of the remedy and meet applicable or relevant and appropriate requirements.

The total duration of the Newmark OU interim remedy will be 33 years, with the first three years for design and construction. EPA

will review this action every five years throughout this interim remedy period and again at the conclusion of this period.

The remedial action for the Newmark OU represents a discrete element in the overall long-term remediation of groundwater at the Newmark Groundwater Contamination Superfund Site. The objectives of this interim action (i.e. inhibiting migration of groundwater contamination to clean portions of the aquifer, controlling additional contamination from entering this portion of the aquifer, and beginning to remove contaminant mass from the aquifer in the Newmark Plume) would not be inconsistent with nor preclude implementation of any final, overall remedial action or actions selected by EPA in the future for the Newmark Groundwater Contamination Superfund Project.

EPA is the lead agency for this project and the Department of Toxic Substances Control of the State of California Environmental Protection Agency is the support agency.

DECLARATION

This interim action is protective of human health and the environment, complies with Federal and State applicable or relevant and appropriate requirements directly associated with this action and is cost effective. This action utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable, given the limited scope of the action. Because this action does not constitute the final remedy for the site, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed at the time of the final response action. Subsequent actions are planned to fully address the principal threats at these sites.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, EPA shall conduct a review, pursuant to CERCLA Section 121, 42 U.S.C. Section 9621, at least once every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Harry Seraii

John C. Wise
Acting Regional Administrator

8/4/93
Date

PART II. DECISION SUMMARY

This Decision Summary provides an overview of the Newmark OU interim remedy, including a description of the nature and extent of contamination to be addressed, and the remedial alternatives, the comparative analysis of the remedial alternatives, a description of the selected remedy and the rationale for remedy selection.

1.0 SITE LOCATION AND DESCRIPTION

The Newmark OU is located within the Bunker Hill Basin (also known as the Upper Santa Ana River Basin) in San Bernardino, California. The following sections present a basin description, regulatory history, and a summary of the Remedial Investigation and Feasibility Study (RI/FS) activities within the Newmark Superfund Site.

1.1 Description of the Bunker Hill Basin

The Newmark Groundwater Contamination affects a large portion of a 110 square mile aquifer in the San Bernardino Valley of southern California. (Figure 1). The aquifer, known as the Bunker Hill Basin, is bounded by the San Bernardino and San Gabriel Mountains to the north, the Crafton Hills and badlands on the southeast, and by a hydrogeologic barrier formed by the San Jacinto fault along the southwest. (Figure 2) Water flowing from all parts of the aquifer join in a confined 'artesian zone' before leaving the basin where the Santa Ana River crosses the San Jacinto faultline.

Coarse erosional material (alluvial and river channel deposits) have accumulated in the this area of the basin to depths of 400 to over 1900 feet, atop older formations that act as barriers to further vertical movement. A fold in one of these impermeable bottom formations forms the Shandin Hills (formerly called Bunker Hill in reference to military emplacements from the WWII era), which force groundwater flowing from the north and west to flow around either side rather than directly south toward the Santa Ana River.

Most of the western portion of the basin is an unconfined aquifer, with no substantial barriers to infiltration from the surface. In the lowest area of the basin (the south-central portion around the Santa Ana River), several extensive clay layers have formed an aquitard, overlying and capping the water-bearing sand and gravel aquifers. This confined portion of the aquifer produces tremendous supplies of water for nearby communities.

The aquifer receives rainfall and natural runoff from the surrounding mountains, collected floodwaters from rivers, creeks and washes, and water imported from outside the region that is spread over percolation basins. According to the San Bernardino Municipal Water District, the Bunker Hill Basin is capable of storing approximately 5 million acre-feet (1.6 trillion gallons)

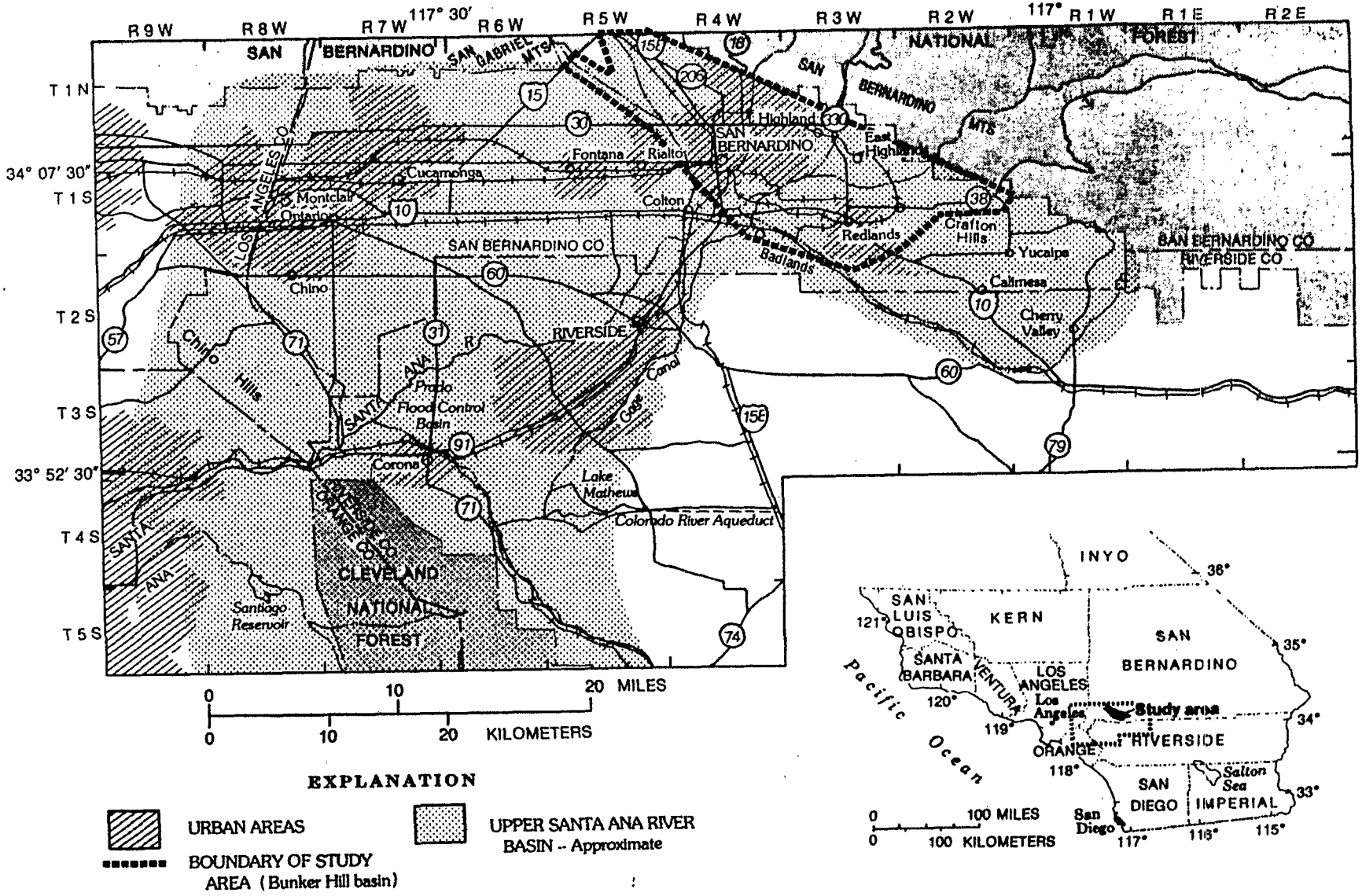
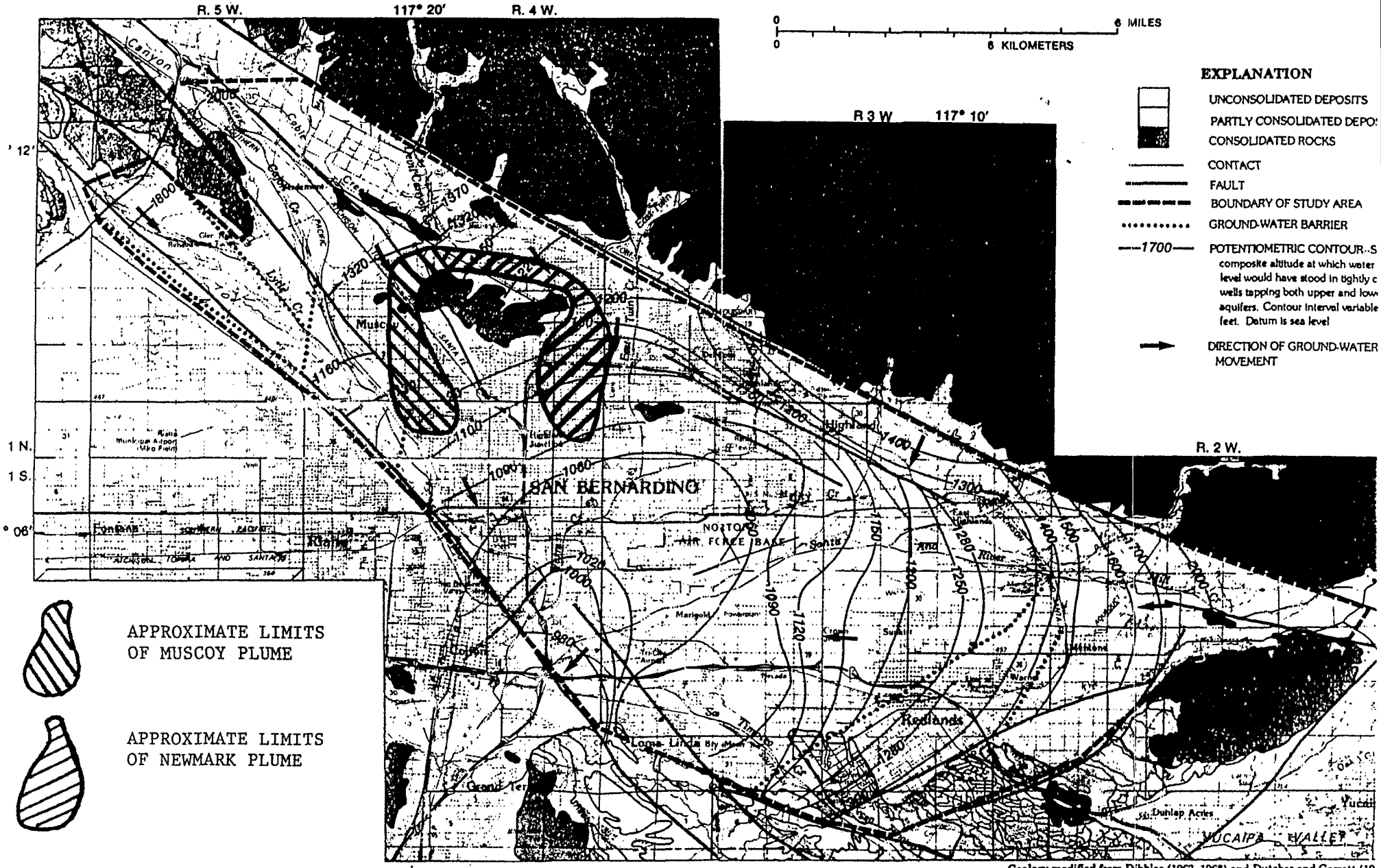


FIGURE 1.--Location of study area.



Geology modified from Dibblee (1963, 1968) and Dutcher and Garrett (19

FIGURE 2. --Altitude of potentiometric surface and direction of ground-water movement, summer 1986.

and producing 250,000 acre-feet (81 billion gallons) each year. Nearly a half-million residents of San Bernardino, Riverside and surrounding communities rely on this portion of the aquifer for at least part of their water supply.

The Newmark OU lies almost entirely within the city of San Bernardino. Residential and commercial use predominates throughout the OU, although some industrial development has been identified. Very little of the area remains undeveloped.

1.2 Description and Background of the Newmark OU

The solvents (tetrachloroethene, PCE, and trichloroethene, TCE) spreading from the Newmark Superfund site threaten approximately one-half of the Bunker Hill Basin.

The EPA placed the Newmark site on the National Priorities List (NPL) in March, 1989. At that time, EPA believed the eastern (Newmark) plume of contamination to be completely separate from the western (Muscoy) groundwater contamination. Results of earlier investigations identified a possible contaminant source (a disposal pit for waste liquids at a former airport) near the Newmark wellfield.

The EPA Remedial Investigation (RI) began in late 1990. In 1992 eight sets of monitoring wells were drilled and sampled in the Newmark OU, and nearby city and state wells were also sampled by EPA. PCE and TCE were the most prevalent contaminants in all the contaminated wells. Other VOCs have also been detected in trace quantities. Results from the RI showed that the originally suspected source of the Newmark plume was not currently a source of contamination. Additional well drilling in the summer of 1992 traced groundwater contamination through a previously undiscovered underground channel flowing from the western (Muscoy) side of the valley. The Newmark site was officially expanded in September, 1992 to include the Muscoy plume. EPA began additional RI studies for the Muscoy plume and finished a feasibility study (FS) for the Newmark OU which evaluated a range of cleanup alternatives for addressing the five mile long contaminated groundwater plume. The RI/FS report for the Newmark OU was finalized in March, 1993.

2.0 SITE HISTORY

In 1980, the California Department of Health Services (DHS) initiated a monitoring program in San Bernardino to test for the presence of industrial chemicals in the water from public supply wells. The results of initial tests and of subsequent testing revealed the presence of PCE and TCE contamination in large portions of the groundwater of the Bunker Hill Basin.

Fourteen wells operated by the city of San Bernardino Water Department in the North San Bernardino / Muscoy area were found to contain concentrations of PCE and TCE above the state and federal MCLs of 5 parts per billion (ppb) for both TCE and PCE. The solvents were found in wells scattered around the north, east and

west sides of the Shandin Hills. (Figure 3) The affected wells had supplied nearly 25 percent of the water for the city of San Bernardino. As of 1993, a total of thirteen public water supply wells have been contaminated by the solvents apparently spreading from the Newmark plume, and seven water supply wells have been affected in the area of the Muscoy plume.

Following investigations by the Santa Ana Regional Water Quality Control Board and California Department of Health Services (now the California EPA Department of Toxic Substances Control), the state provided over $6 million to construct three water treatment systems, with a fourth under construction, to protect the public water supply. After years of testing it became apparent that the solvents in the groundwater were continuing to flow south, threatening many more wells operated by San Bernardino, Riverside and other communities. The state requested federal involvement to address this regional problem.

It should be noted that the cities of San Bernardino, Riverside and other water agencies in the area closely monitor the quality of drinking water delivered to residents. The water served to residents meets all Federal and state drinking water requirements.

The state investigations published in 1986 and 1989 both suggested that the widespread contamination in northern San Bernardino probably resulted from numerous small, unidentified sources. The Shandin Hills and nearby hill formations were assumed to separate the eastern (Newmark area) aquifer from the western (Muscoy area) aquifer, making it unlikely that all 14 wells could have been contaminated from a single source.

Continued monitoring of existing water supply wells and monitoring wells constructed by the state established a record of contamination relatively uniform in composition and concentration throughout the area north and east of the Shandin Hills. This pattern strongly suggested a single plume in this area.

Aerial photographic analysis was completed by EPA's Environmental Monitoring Systems Laboratory in September, 1990. This analysis, along with interviews of witnesses, suggested that the primary source of contamination was a suspected solvent disposal pit ('cat pit') on the former site of the private San Bernardino Airport. This activity occurred from the late 1950's intermittently through the early 1970's. Several minor activities in different parts of the airport site were also identified as potential waste releases. No other sources could be identified between the disposal site and the closest uncontaminated wells upgradient. The plume from this single source would extend over four miles. The waste disposal pit was also within several hundred feet of the Newmark wellfield (four City of San Bernardino Water Department wells). These wells exhibited the highest concentration of contaminants measured in any wells in the area, nearly 200 $\mu g/l$ (parts per billion) of PCE.

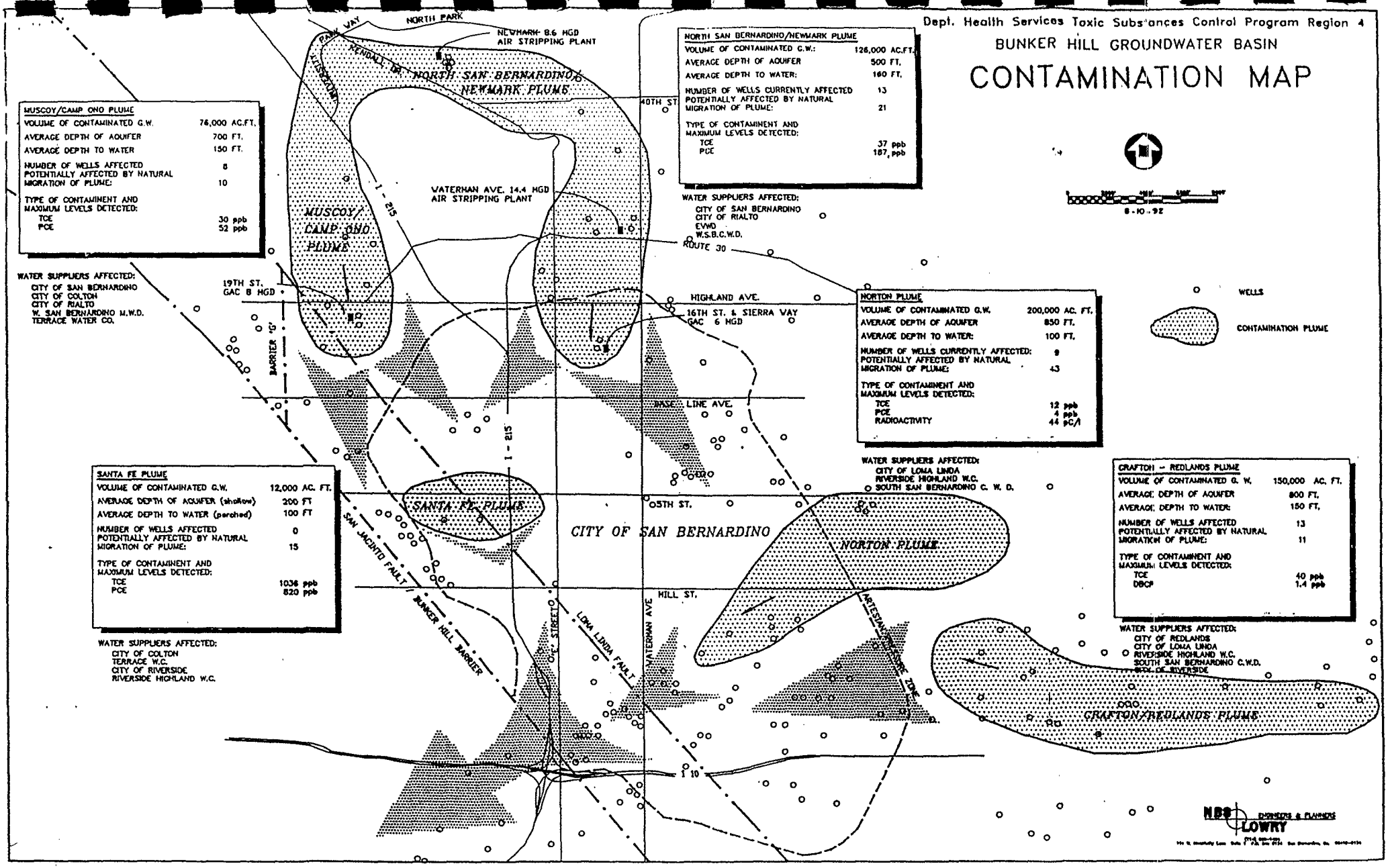


FIGURE 3: LOCATION OF PUBLIC WATER SUPPLY WELLS AND IDENTIFIED CONTAMINANT PLUMES IN THE BUNKER HILL GROUNDWATER BASIN

In 1984-85, the area near the "cat pit", which was later identified as the probable contaminant source, was developed into a residential community.

Based on information obtained during the Remedial Investigation, the San Bernardino Airport site is no longer suspected to be the source of the Newmark Plume. It is now believed that the principle source (or sources) lies on the west side of the Shandin Hills and likely contributes to both the Newmark and Muscoy Plumes.

While ongoing investigations attempt to identify the source, EPA determined that the Newmark plume could be addressed as an interim action (the Newmark OU).

3.0 ENFORCEMENT ACTIVITIES

The results of the Remedial Investigation and other investigations undertaken by EPA and state agencies indicate that the project lead for the Newmark OU will remain with EPA until a probable source is located.

Considerable effort was expended on a PRP search while the San Bernardino Airport site was suspected to be the source of the contamination. Results of the Remedial Investigation traced the source more than one mile upgradient of the suspected source. No residual contamination was found in the unsaturated zone or the upper portion of the aquifer immediately beneath former disposal pits. The airport site is no longer considered a likely source of the contamination.

The focus of the ongoing PRP search will be potential sources located to the northwest of the Shandin Hills. These potential sources include Camp Ono (a WWII-era army base decommissioned in 1947 and subsequently developed for residential and commercial/industrial use), a closed county landfill, and an area of industrial development. The Department of Defense was sent a copy of the Newmark Proposed Plan at the start of the public comment period, along with an information request letter concerning the operations at the former Camp Ono.

4.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA's preferred alternative, as well as four other alternatives were described in EPA's Proposed Plan for the Newmark OU (March 1993). The Proposed Plan was in the form of a fact sheet and was distributed to all parties on EPA's mailing list for the Newmark project. The original 30 day public comment period was extended to 6 weeks (45 days) after EPA received requests for extensions from members of the public. The public comment period closed on May 5, 1993. EPA received approximately 50 comments. These comments and EPA's responses to these comments are summarized in Part III (the Responsiveness Summary) of this ROD.

A press release to announce the release of the Proposed Plan was issued March 17, 1993. Notice of the public meeting as well as the availability of the Proposed Plan was published in the Inland Empire Sun on March 18, 1993. In addition, several newspaper articles were written about the remedial investigation, the feasibility study and the Proposed Plan for the Newmark OU including: Inland Empire Sun - March 18, 1993; Riverside Press-Enterprise - March 18, 1993. A map of the Newmark OU was provided in the Proposed Plan and the various newspaper articles published maps and described the area that would be impacted by the Newmark OU.

A public meeting was held in the City of San Bernardino Council Chambers on April 14, 1993, to discuss EPA's preferred alternative and the other alternatives. At this meeting EPA gave a brief presentation regarding the Proposed Plan, answered questions, and accepted comments from members of the public. This meeting was broadcast live on the local cable channel.

EPA expended considerable effort developing strong community relations. A Technical Advisory Committee has been successful in maintaining close communication with local and state agencies. For communication with the local community, three principle mechanisms have been employed: formal presentations (open houses, meetings with organizations and fact sheet distribution), contact with the print and electronic media and informal discussions with home-owners' associations and individuals.

The San Bernardino and Riverside papers have published a number of positive and well-researched articles about the project. Major television networks broadcast reports of the drilling operation in February, 1992. The Project Manager participated in a 90 minute call-in talk show on the public television station in August, 1992.

Invitations were accepted to speak at a city-wide Neighborhood Watch meeting and at a San Bernardino "town-hall" meeting sponsored by the California Water Education Foundation. Two open house meetings were held to introduce the field work in February, 1992, and another open house was held on-site for the community and press shortly after drilling began. Three fact sheets in addition to the Proposed Plan have been distributed.

Three different home-owners' associations accepted EPA's offer for informal discussions of the project. Drilling around these communities was greatly facilitated by open communication. Presentations were made to the staff and teachers at a local school, and the Project Manager taught the 5th grade class about groundwater and chemical pollution as it relates to the Newmark site.

5.0 SCOPE AND ROLE OF THE OPERABLE UNIT

The interim remedial action for the Newmark OU represents a discrete element in the overall long-term remediation of groundwater in the San Bernardino area. Since the source has not been identified, the final overall plan for the remediation of the entire Newmark Groundwater Contamination Site has not yet been determined. The Newmark plume constitutes a major portion of the contaminated aquifer and this remedy will be a significant step toward eventual remediation. EPA does not expect these objectives to be inconsistent with, nor preclude, any final action for the entire site.

The objectives of the Newmark OU are:

- To inhibit migration of groundwater contamination into clean portions of the aquifer;
- To limit additional contamination from continuing to flow into the Newmark OU plume area;
- To begin to remove contaminants from the groundwater plume for eventual restoration of the aquifer to beneficial uses (This is a long-term project objective rather than an immediate objective of the interim action.)

The analysis of the no-action option indicates that unless this action is implemented, the contamination will continue to spread to clean areas of the aquifer which are currently used as important sources of drinking water.

EPA is currently using the results of the Newmark OU remedial investigation in basinwide feasibility studies to address VOC contamination in the Muscoy OU and to investigate potential sources. As part of the Muscoy OU FS, EPA is revising and recalibrating the groundwater flow model for the entire site to incorporate the most recent data. When sufficient information is available on the contaminant source and transport from the source, EPA will review and evaluate various groundwater remediation options for the complete site. It is expected that the Newmark OU remedy will constitute an integral part of the complete remedy.

EPA will continue to monitor aquifer behavior and contaminant transport as part of this interim action. The information gathered will be important in the analysis of a remedy for the entire Newmark site.

6.0 SUMMARY OF NEWMARK OU SITE CHARACTERISTICS

Results of EPA's Remedial Investigation provided critical understanding in three general areas: groundwater flow characteristics, contaminant identification and concentration, and potential for exposure through the unsaturated zone.

The result that was least expected was that a significant flow of contaminated groundwater was entering the eastern (Newmark OU) side of the basin from the western portion (Muscoy OU). Most recharge to the Newmark OU part of the Bunker Hill Basin does originate along the San Bernardino Mountains to the north, and this source is not contaminated. Another important observation was that clay or silt layers that would inhibit vertical contaminant migration were not present in the monitoring well drilled near the leading edge of the plume. The contaminants cannot be expected to remain in an isolated vertical layer. A groundwater flow model was successfully developed to describe the aquifer behavior.

The contaminants identified were predominantly chlorinated solvents. Tetrachloroethene (PCE) was found in all contaminated wells at concentrations less than 40 parts per billion (ppb). Trichloroethene (TCE) was the next most common contaminant, and never exceeded 10 ppb. Other related solvents were identified at concentrations below drinking water standards. Chlorofluorocarbons (freons) were also observed. Monitoring wells were constructed to collect samples at two or more depths at each well location. Generally, the highest concentrations of contaminants were found in the deeper wells. Typically, a well near bedrock (about 500 feet deep) would have PCE levels of 10 to 20 ppb while the well in the upper part of the aquifer would have PCE less than 2 ppb. Monitoring well data compared quite closely with data from nearby water production wells.

Subsurface soil samples at the originally suspected source had no detectable levels of contaminants. Air samples from homes directly above the contaminant plume had no more volatile chemicals than samples from homes outside the plume area. Levels were not different from values observed in homes throughout the Los Angeles metropolitan area. These results confirmed that volatilization from the subsurface does not provide a measurable exposure pathway.

7.0 SUMMARY OF SITE RISKS

Baseline risk assessments are conducted at Superfund sites to fulfill one of the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP (40 CFR Part 300) requires development of a baseline risk assessment at sites listed on the National Priorities List (NPL) under CERCLA. The CERCLA process for baseline risk assessments is intended to address both human health and the environment. However, due to the nature of the contamination at the site and the highly urbanized setting of the Newmark OU, the focus of the baseline risk assessment was on human health issues, rather than environmental issues.

The objective of the baseline risk assessment for the Newmark OU was to evaluate the human health and environmental risks posed by the contaminated groundwater if it were to be used as a source of drinking water without treatment. The baseline risk assessment incorporated the water quality information generated during the RI field investigation and sampling program to estimate current and future human health and environmental risks.

The risk assessment was conducted in accordance with EPA guidance including: Guidance for Conducting Remedial Investigation and Feasibility Studies under CERCLA (USEPA, 1988), Risk Assessment Guidance for Superfund, Vol. I Health Evaluation Manual (Part A) and Vol. 2 Ecological Assessment (USEPA, 1989), The Exposure Factors Handbook (USEPA, 1989), and Risk Assessment Guidance for Superfund Human Health Risk Assessment, USEPA Region IX Recommendations (USEPA, 1989).

A risk assessment involves the qualitative and quantitative characterization of potential health effects of specific chemicals on individuals or populations. The risk assessment process comprises four basic steps: 1) hazard identification, 2) dose-response assessment, 3) exposure assessment, and 4) risk characterization. The purpose of each element is as follows:

- Hazard identification characterizes the potential threat to human health and the environment posed by the detected constituents.

- Dose response assessment critically examines the toxicological data used to determine the relationship between the experimentally administered animal dose and the predicted response (e.g., cancer incidence) in a receptor.

- Exposure assessment estimates the magnitude, frequency, and duration of human exposures to chemicals.

- Risk characterization estimates the incidence of or potential for an adverse health or environmental effect under the conditions of exposure defined in the exposure assessment.

Human Health Risk Assessment

Risk assessments estimate the possibility that additional occurrences of cancer will result from exposure to contamination. The background probability of developing cancer from all causes in California is approximately one in four (or 250,000 in a million). An excess cancer risk of 1 in a million means that a person exposed to a certain level of contamination would increase the risk of developing cancer from 250,000 in a million to 250,001 in a million as a result of the exposure. EPA considers excess cancer risks greater than 100 in a million to be unacceptable.

In preparing risk assessments, EPA uses very conservative assumptions that weigh in favor of protecting public health. For

example, EPA may assume that individuals consume two liters of drinking water from wells situated within a contaminant plume every day for a 30-year period, even though typical exposure to the chemical would be far less.

EPA included two potential exposure routes (ways the contamination gets into the body) in the risk assessment:

- drinking the groundwater during residential use; and
- inhaling the chemicals in groundwater as vapors during showering.

Skin contact with contaminated water was also considered but EPA found that it didn't pose a significant risk. Results of the RI indicated that direct exposure to volatile organic compounds (VOCs) from the soil or water 100 feet below ground was insignificant at this site.

Chemicals of potential concern in the Newmark OU used in the risk assessment calculations included: PCE, TCE, cis 1,2-dichloroethene (DCE), and six other VOCs detected in at least one well. EPA will continue to monitor the groundwater in the Newmark OU for any changes that would affect the risk analysis.

The results of the risk assessment indicated that the current contaminant levels in the aquifer of the Newmark OU would not meet state or Federal drinking water standards if this water were to be delivered directly to local residents, without being treated. However, the levels are currently below the concentrations that would pose an unacceptable risk to human health, as defined by CERCLA. If the groundwater were used as a drinking water source without treatment, the chance of developing cancer during a lifetime would increase by as much as 20 in a million. EPA is taking an action at the Newmark OU in order to meet the drinking water standards (MCLs) even though the risk levels do not exceed 100 in a million.

The baseline risk assessment for the Newmark OU is presented in the Remedial Investigation and Feasibility Study Report for the Newmark OU (March 1993).

Environmental Risk Assessment

Given the present developed condition of the site and the major exposure pathway consideration of contaminated groundwater, there was no expectation for significant impact to potential environmental receptors. Urbanization has already replaced habitat potential; therefore, no significant number of receptors appeared to be present. There appeared to be no apparent mechanism for exposure to environmental receptors from contaminated groundwater. Also, there was no indication that future site plans would reinstate habitat and thereby recreate a potential for environmental receptors in the future.

8.0 DESCRIPTION OF ALTERNATIVES

Development of Alternatives to Meet Project Objectives

Before developing a range of cleanup alternatives for evaluation, EPA identified the objectives of the interim cleanup for the Newmark OU. All of the alternatives were screened for: 1) effectiveness at protecting public health and the environment, 2) technical feasibility (implementability), and 3) cost. In addition, the alternatives were developed to meet the specific cleanup objectives for the Newmark OU described previously.

Summary of Cleanup Alternatives

Based on the results of the RI, EPA identified five cleanup alternatives for addressing groundwater contamination of the Newmark OU. Detailed descriptions of these alternatives are provided in the Newmark OU RI/FS Report (March 1993). Rather than including all potential combinations of extraction locations and amounts, the initial screening process identified the most efficient extraction scenario that would meet the stated objectives. The five alternatives were evaluated based on nine specific criteria: 1) Overall Protection of Human Health and the Environment, 2) Compliance with Applicable or Relevant and Appropriate Requirements (ARARs), 3) Long-term Effectiveness and Permanence, 4) Reduction of Toxicity, Mobility or Volume through Treatment, 5) Short-term Effectiveness, 6) Implementability, 7) Cost, 8) State Acceptance, and 9) Community Acceptance.

With the exception of the **Alternative 1 - No Action**, all of the alternatives involve the extraction of 4,000 gallons per minute (gpm) of groundwater near the Newmark wellfield and 8,000 gpm of groundwater near the leading edge of the plume (approximately at 14th Street between Arrowhead and Waterman Avenues) for a period of 30 years. Individual wells would pump from 800 to 2,000 gpm, the range for a typical city drinking water well.

A computer model was used to determine that these extraction rates would result in effective inhibition of plume migration and optimal contamination removal for this interim action. With the exception of **Alternative 1 - No Action**, all of the alternatives would involve the construction and operation of a VOC treatment system, construction and sampling of additional monitoring wells, and analysis of any changes in the current operations of nearby public water supply wells.

During the first three years after the ROD is signed, the remedy would go through the remedial design and initial implementation stages. EPA must plan, build the equipment and test it to make sure it functions properly.

ALTERNATIVE 1: No Action

This alternative serves as a baseline to compare other alternatives. This alternative is evaluated to determine the risks that would be posed to public health and the environment if no action were taken to treat or contain the contamination. The **No Action Alternative** would involve only groundwater monitoring; no additional cleanup activities would be conducted. The cost of constructing the necessary monitoring wells and sampling them over 30 years would be approximately $3.5 million (present net worth).

ALTERNATIVE 2: Extract/Treat(Granular Activated Carbon)/Public Water System

Extraction

Alternative 2 involves the extraction of 8,000 gpm of contaminated groundwater placed at the leading edge of the Newmark plume and extraction of 4,000 gpm within the plume near the Newmark wellfield. The extraction wells would be located to inhibit most effectively the migration of the contaminant plume.

Treatment

The extracted groundwater would be transmitted via underground piping to Granular Activated Carbon (GAC) treatment plants (two separate treatment plants, one for each set of extraction wells). (Note that Alternative 3, involving treatment by air stripping, is considered by EPA to be equivalent to Alternative 2, and may be substituted for all or part of Alternative 2 during the design phase of the project.)

Final Use of Treated Water

The treated water would meet all legal requirements for drinking water and would be piped to the public supply system for distribution. Groundwater monitoring wells would be installed to evaluate the effectiveness of the remedial action. Following approximately 2 to 3 years for design and construction, this system would operate for 30 years. Operation of nearby public water supply wells is not expected to interfere with this remedy, although any significant changes in operations would be analyzed to determine the effect on this cleanup action. EPA will conduct a review of the project effectiveness every five years.

ALTERNATIVE 3: Extract/Treat(Air Stripping with Emission Control)/Public Water System

Alternative 3 involves the same extraction system, final distribution and monitoring design as Alternative 2. Alternative 3 differs from Alternative 2 in the treatment of the extracted groundwater to remove VOCs to meet drinking water standards. In Alternative 3, the extracted contaminated water would be treated by air stripping with emission control to meet the South Coast Air Quality Management District's requirement for best available control technology. Currently, vapor-phase granular activated carbon meets this requirement, and EPA used this technology for

cost and effectiveness analysis. New emissions control technologies developed prior to the final design could be considered if they meet the air quality requirement. Air stripping is essentially equal to GAC (Alternative 2) in effectiveness, technical feasibility and the remaining criteria.

Alternative 4: Extract/Treat (Advanced Oxidation - Peroxide/Ozone)/ Public Water System

Alternative 4 involves the same extraction, end use and monitoring design as Alternative 2. The extracted water would be treated for VOCs using an advanced oxidation process that uses peroxide and ozone to destroy (oxidize) the contaminants (rather than transferring the contaminants to a carbon filter). The advanced oxidation process was the primary treatment method for this alternative. The treated water would meet all legal requirements for a drinking water supply and would be piped to a public distribution system. Groundwater monitoring wells would be installed to evaluate the effectiveness of the action.

ALTERNATIVE 5: Extract/Treat (GAC or Air Stripping)/Return to the Aquifer via Reinjection).

Alternative 5 involves the same extraction, treatment and monitoring designs as Alternative 2 (including the option to use either GAC or air stripping to treat the extracted water for VOCs). The water would be returned to the aquifer in reinjection wells downgradient from the extraction wells. The treated water would meet drinking water standards before being returned to the aquifer.

9.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

A comparative analysis of the alternatives against the nine evaluation criteria is presented in this section.

No Action versus the Nine Criteria. Clearly, Alternative 1 would not be effective in the short- and long-term in protecting human health and the environment as it does not provide for removing any contaminants from the aquifer, for inhibiting further downgradient contaminant plume migration, or for reducing the toxicity, mobility and volume of contaminants through treatment. Implementing the no-action alternative would be simple and inexpensive since it involves only groundwater monitoring. As indicated by the baseline risk assessment presented in the RI Report, Alternative 1 could pose both carcinogenic and non-carcinogenic risk if a person were exposed to the groundwater from the upper zone of the aquifer, although these risks are below the 100 in a million excess risk level (10^{-4}) which EPA considers generally unacceptable. The current contaminant level would not meet state or federal drinking water standards if this water were to be delivered directly to local residents without treatment. Loss of a valuable water resource from continued degradation of the aquifer is a major

concern for the State and the public.

Overall Protection of Human Health and the Environment, Short Term Effectiveness and Long Term Effectiveness.

Alternatives 2, 3, 4 and 5 have the same effectiveness in the short and long term in reducing the risk to human health and the environment by removing contaminants from the aquifer; by inhibiting further downgradient contaminant migration; and by reducing the toxicity, mobility and volume of contaminants in the aquifer.

Reduction of Toxicity, Mobility and Volume through Treatment. The VOC treatment technologies used in Alternatives 2, 3 and 5 (either air stripping with emission control (e.g., vapor-phase GAC adsorption) or liquid phase GAC adsorption) are technically feasible and effective in meeting ARARs for VOCs in the extracted and treated groundwater. Treatment of the extracted contaminated groundwater via air stripping with vapor-phase GAC adsorption or liquid phase GAC adsorption would reduce substantially the toxicity and mobility of contaminants in the aqueous phase. The adsorption of contaminants onto the GAC would reduce the volume of contaminated media. However, a substantially larger quantity of contaminated GAC media would be generated with either air stripping with vapor-phase GAC or liquid-phase GAC systems compared to perozone oxidation (which is a destructive technology) followed by either air stripping with vapor-phase GAC adsorption or liquid-phase GAC. This contaminated GAC would require disposal or regeneration. During the design phase, an alternative emission control technology will be tested to eliminate the need for vapor-phase GAC while meeting the Best Available Control Technology requirement.

Treatment of the extracted contaminated groundwater via perozone oxidation in Alternative 4 would destroy greater than 90 percent of the VOCs, and generate a smaller quantity of contaminated GAC media compared to the conventional technologies alone. VOC treatment using perozone oxidation has only been tested and applied in pilot-scale/limited applications, and limited O&M data are available. Concern has been expressed over the reliability of this innovative technology at large-scale application for drinking water supply treatment. Incomplete oxidation can lead to the formation of by-products such as formaldehyde which would also need to addressed. Coupled with the uncertainties associated with design, capital and operational costs and day-to-day reliability at a large scale, and finally the fact that a municipality will be receiving this water, all combine to make Alternative 4 less preferable than Alternatives 2, 3 and 5 which propose using liquid phase GAC or air stripping for VOC treatment.

As a result of comments received during the public comment period, EPA further evaluated the use of an advanced oxidation system as pretreatment for liquid-phase GAC. Additional research on perozone use and revised cost estimates based on a bench scale treatability study can be found in the following technical

memorandum: Analysis of "Hybrid" Advanced Oxidation Pretreatment/ Activated Carbon Alternative for the Newmark Operable Unit (June 25, 1993) included in the Administrative Record for the Newmark OU. Pretreatment with a destructive technology has the theoretical advantage of reducing contaminant mass while enhancing the operation of a reliable conventional technology. EPA may use this modification of liquid phase GAC if this modification proves to be effective and economical during design phase testing and analysis.

Compliance with ARARs. As discussed in the ARARs section (Section 10) of this ROD, since this remedial action is an interim action, there are no chemical-specific ARARs for aquifer cleanup for any of the alternatives. For Alternatives 2 through 5, the chemical-specific ARARs for the treated water from the VOC treatment plant at this site are Federal MCLs and more stringent State MCLs for VOCs. Alternatives 2, 3, and 5 are expected to meet these ARARs for the treated water. There is some uncertainty regarding the ability of Alternative 4 to meet these ARARs because perozone has not been used to treat such high concentrations of VOCs at such high flow rates. Therefore, there is the potential for not meeting MCLs unless the air stripping or liquid-phase GAC unit following the perozone system is a redundant treatment system (which would add substantially to the cost).

For the Alternatives that involve distribution of the treated water to a public water supply system (Alternatives 2, 3 and 4), secondary drinking water standards are ARARs. For water that will be served at the tap, all legal requirements will have to be met. In Alternative 5, the treated water will meet MCLs for VOCs prior to return to the aquifer at an on-site location.

Implementability. Technically and administratively, Alternatives 2, 3, and 5 could be implemented. The technologies considered for groundwater monitoring, extraction, and conveyance are proven and have been applied extensively. For Alternative 5, the availability of an appropriate on-site location for reinjection of extracted and treated groundwater would need to be addressed.

State and Public Acceptance. Based on comments received during the public comment period, the public generally expressed support for Alternatives 2 through 5, although strong reservations were expressed about alternative 4. EPA received comments from the City of San Bernardino Water Department, two other water agencies in the area, and members of the San Bernardino community specifically in support of Alternatives 2 and 3. Comments received during the public comment period along with EPA responses are presented in Part III of this ROD, the Responsiveness Summary. In a letter dated July 29, 1993, the State (Cal-EPA) concurred with EPA's selected remedy for the Newmark OU.

Cost. The estimated total present worth of Alternatives 2, 3 and 5 ranges from $47,900,000 to $49,900,000. The total present worth cost for Alternative 4 is $61,000,000. For alternatives 2, 3 and 4, some of these costs are expected to be offset by the water supply agencies which accept the treated water. These overall project costs do not take into account the value of utilizing the

groundwater resource directly as opposed to recharging the water to the aquifer to be eventually pumped to the surface again prior to use (Alternative 5).

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. Examples of this type of ARAR are ambient water quality criteria and drinking water standards.

Location-Specific ARARs. Location-specific requirements set restrictions on certain types of activities based on site characteristics. Federal and state location-specific ARARs are restrictions placed on the concentration of a contaminant or the activities to be conducted because they are in a specific location. Examples of special locations possibly requiring ARARs may include flood plains, wetlands, historic places, and sensitive ecosystems or habitats.

Action-Specific ARARs. Action-specific requirements are technology- or activity-based requirements which are triggered by the type of remedial activities under consideration. Examples are Resource, Conservation and Recovery Act (RCRA) regulations for waste treatment, storage or disposal.

Neither CERCLA nor the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (400 C.F.R. Part 300) 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 Applicable or Relevant and Appropriate Requirements (ARARs) that apply to this site.

10.1 Chemical-Specific ARARs

10.1.1 Federal Drinking Water Standards

Section 1412 of the Safe Drinking Water Act (SDWA), 42 U.S.C. S300g-1, "National Water Regulations"; National Primary Drinking Water Regulations, 40 CFR Part 141.

EPA has established Maximum Contaminant Levels (MCLs) (40 CFR Part 141) under the Safe Drinking Water Act (SDWA) to protect public health from contaminants that may be found in drinking water sources. These requirements are applicable at the tap for water provided directly to 25 or more people or which will be supplied to 15 or more service connections. The MCLs are applicable to any water that would be served as drinking water. Under NCP Section 300.430(f)(5), remedial actions must generally attain MCLs and non-zero Maximum Contaminant Level Goals (MCLGs) for remedial actions

10.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section discusses Applicable or Relevant and Appropriate requirements (ARARs) for the Newmark OU. Under Section 121(d)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (collectively, CERCLA), 42 U.S.C. § 9621(d) remedial actions must 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.

Pursuant to Section 121(d) of CERCLA, the on-site portion of a remedial action selected for a Superfund site must comply with all ARARs. Any portion of a remedial action which takes place off-site must comply with all laws legally applicable at the time of the off-site activity occurs, both administrative and substantive.

An ARAR may be either "applicable", or "relevant and appropriate", but not both. According to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300), "applicable" and "relevant and appropriate" are defined 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, standard 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.

Chemical-Specific ARARs. Chemical-specific ARARs are health- or

where the groundwater is currently or potentially a source of drinking water.

The groundwater at the Newmark OU is a potential source of drinking water. However, since the Newmark OU remedial action is an interim action, chemical-specific cleanup requirements for the aquifer such as attaining MCLs and non-zero MCLGs, which would be ARARs for a final remedy, are not ARARs for this interim action. (See NCP, 55 Fed. Reg. 8755.) Nevertheless, EPA has determined that for the treatment plant effluent from the Newmark OU, the Federal Maximum Contaminant Levels (MCLs) for VOCs and any more stringent State of California MCLs for VOCs are relevant and appropriate and must be attained regardless of the end use or discharge method for the treated water.

For the treated water which will be put into the public water supply, all legal requirements for drinking water in existence at the time that the water is served will have to be met because EPA considers serving of the water to the public (at the tap) to be off-site. Since these are not ARARs, these requirements are not "frozen" as of the date of the ROD. Rather, they can change over time as new laws and regulations applicable to drinking water change. See NCP, 55 Fed. Reg. 8758 (March 8, 1990).

10.1.2 State Drinking Water Standards

California Safe Drinking Water Act, Health and Safety Code, Division 5, Part 1, Chapter 7, §4010 et seq., California Domestic Water Quality Monitoring regulations, CCR Title 22, Division 4, Chapter 15, §64401 et seq.

California has also established drinking water standards for sources of public drinking water, under the California Safe Drinking Water Act of 1976, Health and Safety Code Sections 4010.1(b) and 4026(c). California has promulgated MCLs for primary VOCs. 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 Newmark OU interim remedy. The VOCs for which there are more stringent State standards include: benzene; carbon tetrachloride; 1,2-dichloroethane (1,2-DCA); 1,1-dichloroethene (1,1-DCE); cis-1,2-DCE; trans-1,2-DCE; and xylene. 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-DCA; 1,1,2,2-tetrachloroethane; and 1,1,2-trichloroethane.

Water served as drinking water is required to meet MCLs at the tap, not MCLGs. Therefore, EPA would generally not expect a future change in an MCLG to affect the use of treated groundwater as a drinking water source. The cumulative hazard index is also not an ARAR. However, EPA does retain the authority to require changes in the remedy if necessary to protect human health and the environment, including changes to previously selected ARARS. See

40 C.F.R. Sections 300.430(f)(1)(ii)(B)(1) and 300.430(f)(5)(iii)(C). If EPA receives new information indicating the remedy is not protective of public health and the environment, EPA would review the remedy and make any changes necessary to ensure protectiveness.

EPA has also determined that the monitoring requirements found in CCR Title 22 Sections 64421-64445.2 are relevant and appropriate for any treated water which will be delivered to a public water distribution system. However, the selection of these sections as ARARs involves only the requirements that specific monitoring be performed. It would not include any administrative requirements (such as reporting requirements) and would also not include meeting substantive standards set within these sections since no such standards have been identified by the State as being more stringent than Federal requirements. For the off-site portion of this remedy, including serving of the treated water, all applicable requirements would have to be satisfied including the monitoring requirements in CCR Title 22 Sections 64421-64445.2.

Accordingly, the chemical-specific standards for the groundwater extracted and treated under the Newmark OU interim remedy are the current Federal or State MCLs for VOCs, whichever is more stringent.

10.2 Location-Specific ARARs

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

10.3 Action-Specific ARARs

10.3.1 Clean Air Act, 42 U.S.C. §7401 et seq.

Rules and Regulations of the South Coast Air Quality Management District

The Newmark OU alternative treatment of VOCs by air stripping, whereby the volatiles are emitted to the atmosphere, triggers action- specific ARARs with respect to air quality.

The Clean Air Act regulates air emissions to protect human health and the environment, and is the enabling statute for air quality programs and standards. The substantive requirements of programs provided under the Clean Air Act 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, comprising Rules 1401, on new source review of carcinogenic air contaminants is applicable for the Newmark OU. SCAQMD Rule 1401 also 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 Newmark OU because 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 ARARs for the Newmark OU.

The SCAQMD also has rules to limit the visible emissions from a point source (Rule 401), which prohibits discharge of material that is odorous or causes injury, nuisance or annoyance to the public (Rule 402), and limits down-wind particulate concentrations (Rule 403). EPA has determined that these rules are also ARARs for the Newmark OU interim remedy.

10.3.2 Water Quality Standards for Reinjection and Discharges of Treated Water to Surface Waters or Land

Federal Standards

The Safe Drinking Water Act provides Federal authority over injection wells. The Federal Underground Injection Control Plan is codified in Part 144 of 40 C.F.R and prohibits injection wells such as those that would be located at the Site 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 Newmark OU treated water that is reinjected into the aquifer.

The Resource Conservation and Recovery Act (RCRA) Section 3020 is also an action-specific ARAR. 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 Standards

Reinjection to Groundwater

For any reinjection to the basin, including spreading, or discharges to surface water or land that occur on-site, the reinjected or discharged water must meet all action-specific ARARs for such reinjection or discharge. The ARAR applicable to the reinjected water (Alternative 5) is:

- The Santa Ana Regional Water Quality Control Board's Water Quality Control Plan for the Santa Ana River (and specific Bunker Hill Sub-basins), which incorporates State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California." Resolution No. 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.

Temporary Discharges to Surface Water

EPA anticipates that there may be short-term discharges of treated water to the flood control channel or storm drains during the initial operation of the VOC treatment plant and on certain other limited occasions. The ARAR for any treated water 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 SARWQCB. In establishing effluent limitations for such discharges, the SARWQCB considers the Water Quality Control Plan for the Santa Ana River Basin, Bunker Hill Sub-basins (the "Basin Plan"), which incorporates Resolution 68-16, the Inland Surface Water Plan and Temperature Plan for Surface Waters, and the best available technology economically achievable (BAT). See, Cal. Water Code § 13263.

Since the RWQCB did not identify specific substantive discharge requirements or technology standards for such temporary discharges, EPA has reviewed the Basin Plan (with related documents) and considered BAT and has made certain determinations for the short-term discharges to surface waters. In order to comply with this ARAR, any groundwater that will be discharged, on a short-term basis, to surface waters on-site must be treated to meet Federal MCLs or State MCLs for VOCs, whichever is more stringent.

10.3.3 Secondary Drinking Water Quality Standards

The State of California's Secondary Drinking Water Standards (SDWS) which are more stringent than the Federal Secondary Drinking Water Standards shall be ARARs for the Newmark OU if the final use option involves serving treated groundwater as drinking water. 22 CCR §64471. The California SDWS are selected as ARARs because they

are promulgated State standards and are relevant and appropriate to the action of supplying the treated water to a public water supplier. Although California SDWS are not applicable to non-public water system suppliers, the California SDWS are relevant and appropriate since the treated water under this action would be put into the public drinking water system. Since the Federal SWDS are not enforceable limits and are intended as guidelines only, they are not ARARs for this action. Furthermore, since the State SDWS are more stringent than the Federal SDWS, EPA has not selected the Federal SDWS as requirements for this action. 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. If the treated water is recharged or (temporarily) discharged to the flood control channel, the water will not be required to meet State SDWS.

The Safe Drinking Water Act provides Federal authority over injection wells. The Federal Underground Injection Control Plan is codified in Part 144 of 40 C.F.R and prohibits injection wells such as those that would be located at the Site 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 Newmark OU treated water that is reinjected into the groundwater on the Newmark site.

10.3.4 Resource Conservation and Recovery Act (RCRA) and Hazardous Solid Waste Amendment (HSWA) Standards, 42 U.S.C. §§6901-6987.

RCRA, passed by Congress in 1976 and amended by the Hazardous and Solid Waste Amendments of 1984, contains several provisions that are ARARs for the Newmark OU. 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 regulations in the California Code of Regulations (CCR), Title 22, Division 4.5, Environmental Health Standards for the management of Hazardous Wastes (hereinafter the State HWCA Regulations), are now cited as ARARs instead of the Federal RCRA Regulations.

Since the source of the contaminants in the groundwater is unclear, the contaminated groundwater is not a listed RCRA waste. However, the contaminants are sufficiently similar to RCRA wastes that EPA has determined that portions of the State's HWCA Regulations are relevant and appropriate. Specifically, the substantive requirements of the following general hazardous waste facility standards are relevant and appropriate to the VOC treatment plant for Alternatives 2 through 5: Section 66264.14 (security requirements), Section 66264.15 (location standards) and Section 66264.25 (precipitation standards).

In addition, an air stripper or GAC contactor would qualify as a RCRA miscellaneous unit if the contaminated water constitutes

RCRA hazardous waste. EPA has determined that the substantive requirements for miscellaneous units set forth in Sections 66264.601 -.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, the air stripper or GAC contactor appear to qualify as a miscellaneous unit, and 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.

The land disposal restrictions (LDR), 22 CCR Section 66268 are relevant and appropriate to discharges of contaminated or treated groundwater to land. The remedial alternatives presented do not include land disposal of untreated groundwater. Because of the uncertainty in the levels of contamination and volumes of water to be derived from monitoring and extraction wells at this site, these waters must be treated to meet Federal and State MCLs for VOCs, whichever is more stringent, prior to discharge to land. By meeting the Federal and State MCLs for VOCs before reinjection, Alternative 5 will satisfy the RCRA LDRs.

The container storage requirements in 22 CCR Sections 66264.170 -.178 are relevant and appropriate for the storage of contaminated groundwater over 90 days.

On-site storage or disposal of the spent carbon from the treatment system could trigger the State HWCA requirements for storage and disposal if the spent carbon contains sufficient quantities of hazardous constituents that cause the spent carbon to be classified as a characteristic hazardous waste. If the spent carbon is determined to be a hazardous waste under HWCA (Sections 66261 and 66262), the requirements for handling such waste set forth in Sections 66262 and 66268 are applicable.

Certain other portions of the State's HWCA's 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.

10.3.5 California Water Well Standards.

Substantive standards for construction of public water supply wells have been published by the State as the California Water Well Standards. 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 remedy involves delivery of the treated water to the public supply system, EPA has determined that the 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 remedy is dependent upon the well locations. Additionally, wells constructed solely for treatment and reinjection with no delivery to the public supply system would not be subject to these water well construction standards.

10.4 Summary of ARARs for the Newmark OU Interim Remedy

EPA has determined a number of chemical-, and action-specific ARARs for the Newmark OU interim remedy. All of the alternatives that involve groundwater extraction and treatment could achieve the chemical-specific treatment standards for the groundwater at the point of delivery. However, Alternative 4 which uses an advanced oxidation process is a less certain technology than liquid-phase GAC adsorption or air stripping for such a large volume of water and therefore is somewhat less likely to achieve the chemical-specific ARARs.

Requirements of nonenvironmental laws, such as California OSHA regulations (8 CCR 5192) are not considered as ARARs and all such requirements applicable at the time of the activity would have to be satisfied.

11.0 THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, EPA has determined that Alternative 2: Extraction, Treatment of VOCs by liquid phase GAC (or air stripping with Best Available Control Technology for emissions), and Conveyance to a public water distribution system, in combination with Alternative 5 (as a contingency): Extraction, Treatment of VOCs, and Recharge to the aquifer, is the most appropriate interim remedy for the Newmark OU.

Alternative 2 involves groundwater extraction (pumping) of 8,000 gallons per minute (gpm) in the vicinity of 14th Street, between Arrowhead and Waterman Avenues, at the leading edge of the contaminant plume, and an additional 4,000 gpm at the Newmark wellfield (near 48th Street and Little Mountain Drive) where the contamination enters the eastern part of the valley. Various locations and scenarios for extraction wells and rates of extraction are proposed in the FS report for the Newmark OU; however, all design decisions for this interim remedy will be made during the remedial design phase. During the remedial design phase the locations proposed for extraction wells and scenarios for rates of extraction per individual well may be selected or new ones may be selected. The exact number, location and other design specifics of new extraction wells will be determined during the remedial design phase of the project to inhibit the migration of the contaminant plume most effectively. Wherever appropriate, existing water production wells will be utilized for the remedy, and new wells will be constructed as necessary, as discussed in the Newmark OU FS Report.

All the extracted contaminated groundwater shall be treated to remove VOCs by either of two proven treatment technologies: **granular activated carbon (GAC) filtration** or **air stripping**. EPA determined during the Feasibility Study (March 1993) that these treatment technologies are equally effective at removing VOCs and are similar in cost at this OU. Both technologies have been proven to be reliable in similar applications. It is acceptable to use one technology for the northern (Newmark wellfield) facility and the other at the southern treatment facility. Existing treatment facilities (e.g., the air stripping towers at the Newmark wellfield) may be modified and incorporated into the remedy as appropriate. As a result of comments received during the public comment period, EPA may use a modification of liquid phase GAC (Advanced Oxidation pretreatment) if this modification proves to be effective and economical during design phase testing and analysis. The VOC treatment technology which best meets the objectives of the remedy for the Newmark OU will be determined during the remedial design phase, when more detailed information is available to assess effectiveness and cost.

The treated water exiting the treatment plant shall meet all MCLs and secondary drinking water standards. If air stripping treatment is selected, air emissions shall be treated using the best available control technology (e.g., vapor phase GAC or an acceptable innovative technology) to ensure that all air emissions

meet ARARs.

The treated water will be piped to the public water supply system for distribution. Groundwater monitoring wells will be installed and sampled regularly to help evaluate the effectiveness of the remedy. More specifically, groundwater monitoring will be conducted no less frequently than quarterly to obtain information needed to: 1) evaluate influent and effluent water quality, 2) determine and evaluate the capture zone of the extraction wells, 3) evaluate the vertical and lateral (including downgradient) migration of contaminants, 4) (if the contingency alternative is implemented) to evaluate the effectiveness of the recharge well system and its impact on the remedy and 5) to monitor any other factors associated with the effectiveness of the interim remedy determined to be necessary during remedial design. Monitoring frequency may be decreased to less than quarterly if EPA determines that conditions warrant such a decrease.

EPA has selected Alternative 5 as a contingency if the public water supply system does not accept any or all of the treated water (possibly due to water supply needs). Any remaining portion of water will be recharged into the aquifer via reinjection wells near the edge of the plume. The number, location and design of the reinjection wells will be determined during the remedial design phase to best meet the objectives of the remedy and meet applicable or relevant and appropriate requirements. With the exception of the need to meet secondary MCLs and final use of the treated water, Alternative 5 is identical to Alternative 2 above.

The total duration of the Newmark OU interim remedy will be 33 years, with the first three years for design and construction. EPA will review this action every five years throughout this interim remedy period and again at the conclusion of this period.

The VOC treatment plant of the Newmark OU interim remedy (whether it be Alternative 2, Alternative 5 or a combination thereof) shall be designed and operated so as to prevent the unknowing entry, and minimize the possible effect of unauthorized entry, of persons or livestock into the active portion of the facility. A perimeter fence shall be erected around the VOC treatment plant if an adequate fence or other existing security system is not already in place at the plant site. This fence should be in place prior to initiation of the remedial action and should remain in place throughout the duration of the remedy. The VOC treatment plant shall also be designed and operated so as to prevent releases of contaminated groundwater from the plant.

The selected remedy for the Newmark OU meets all of EPA's nine evaluation criteria. The selected remedy is equally effective as the other alternatives in the short-term and long term reduction of risk to human health and the environment by removing contaminants from the aquifer, by inhibiting further downgradient migration of the contaminant plume, and by reducing the toxicity, mobility and volume of contaminants in the aquifer.

The VOC treatment technologies selected (liquid phase GAC or

air stripping with best available control technology for emissions) are technically feasible and proven effective at meeting ARARs for VOCs in the treated groundwater.

Alternative 2, in combination with Alternative 5, could be implemented, both technically and administratively.

In a letter dated July 29, 1993, the State concurred with EPA's selected remedy. EPA received several public comments during the public comment period, the majority of which expressed support for EPA's preferred alternative. These comments, along with EPA's responses are presented in Part III of this ROD, the Responsiveness Summary.

The selected remedy is protective of human health and the environment, meets ARARs, and provides beneficial uses (distribution to a public water supply and/or recharge) for the treated water. The selected remedy is cost-effective. The estimated cost of Alternative 2 has a total present worth of $49,900,000, which is in the middle of the range for all five alternatives. The estimated total cost of Alternative 5 is $48,100,000.

12.0 STATUTORY DETERMINATIONS

As required under Section 121 of CERCLA, the selected interim remedial action is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the interim remedial action, and is cost effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment to reduce toxicity, mobility, and volume as a principal element.

The selected interim remedial action is protective of human health and the environment in that it removes significant VOC contaminant mass from the upper zones of the aquifer and inhibiting further downgradient and vertical migration of contaminated groundwater.

The VOC treatment technologies selected (liquid phase GAC or air stripping with best available control technology for emissions) are technically feasible and proven effective at meeting ARARs for VOCs in the treated groundwater and the air.

The selected remedy permanently and significantly reduces the toxicity, mobility and volume of hazardous substances in the aquifer as well as the extracted groundwater.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, EPA shall conduct a review, pursuant to CERCLA Section 121, 42 U.S.C. Section 9621, at least once every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

13.0 DOCUMENTATION OF SIGNIFICANT CHANGES

The only significant change to the Newmark OU interim remedy proposed in the Proposed Plan fact sheet dated March, 1993, involves the possible use of a modification to the liquid phase GAC treatment technology.

As a result of comments received during the public comment period, EPA further evaluated the use of an advanced oxidation system as pretreatment for liquid-phase GAC. Additional research on system effectiveness and revised cost estimates based vendor reports can be found in the following technical memorandum: Analysis of "Hybrid" Advanced Oxidation Pretreatment / Activated Carbon Alternative for the Newmark Operable Unit (June 25, 1993) included in the Administrative Record for the Newmark OU. Pretreatment with a destructive technology has the theoretical advantage of reducing contaminant mass while enhancing the operation of a reliable conventional technology. EPA may use this modification of liquid phase GAC if this modification proves to be effective and economical during design phase testing and analysis.

The impact of this potential change is that the reliability of the conventional liquid phase GAC technology is retained and some desirable destruction of contaminants is realized. Since this option would only be a modification of the conventional technology, the advanced oxidation system would not need to be designed to achieve full treatment of the VOCs, reducing the cost of the innovative component of the treatment. The cost of operation of the liquid phase GAC would also be reduced, offsetting a portion of the increased capital costs.

PART III. RESPONSIVENESS SUMMARY

For Public Comments received during the Public Comment Period for the Newmark Operable Unit Interim Remedy at the Newmark Groundwater Contamination Superfund Site San Bernardino, California

EXECUTIVE SUMMARY

This Responsiveness Summary addresses comments received from the public, State agencies, and local agencies on EPA's proposed interim cleanup plan for the Newmark OU. Comments from the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) on the RI/FS report and the draft Proposed Plan for the Newmark OU were received by EPA prior to issuing the Proposed Plan and initiating the public comment period. DTSC's comments and EPA's responses are available for review in the Administrative Record for the Newmark OU and are not included in this responsiveness summary.

EPA held a 45-day public comment period on the RI and FS reports, Proposed Plan and other Newmark OU administrative record documents between March 22, 1993, and May 5, 1993. A public meeting was held in San Bernardino on April 14, 1993. Approximately 25 representatives of the community, local agencies, and EPA attended the meeting and the meeting was broadcast live on a local cable channel. EPA staff made a presentation on the Newmark OU alternatives, including EPA's preferred alternative, and answered questions. A transcript of the meeting is included in the Administrative Record for the Newmark OU.

EPA received questions and comments orally from six members of the public during the April 14, 1993, public meeting.

EPA also received seven letters containing comments from interested community members, the San Bernardino Water Department, the City of Rialto Utilities Department, the East Valley Water District, and the California Department of Health Services, Environmental Health. These letters are included in the Newmark OU Administrative Record.

All but one of the commenters were generally supportive of most aspects of Preferred Alternative presented in the proposed plan. A number of comments expressed strong approval of the preferred alternative. A committee of water supply agencies expressed a willingness to cooperate in the remedy (specifically the acceptance of treated water by the public supply system), with issues to be resolved during subsequent design phase.

Although there was general agreement that the reliability of conventional treatment technologies was desirable, many commenters were concerned about disposal of spent carbon. As a result of comments received during the public comment period, EPA has undertaken a study of a modification of GAC treatment which would

oxidize a large proportion of the contaminants before the water enters the carbon system. EPA may use this enhanced liquid phase GAC (with Advanced Oxidation pretreatment) if this modification proves to be effective and economical during design phase testing and analysis.

One commenter recommended that the proposed action at the Newmark OU be postponed until further investigation could support justification of the project.

RESPONSIVENESS SUMMARY

for PUBLIC COMMENTS RECEIVED from

March 22 through May 5, 1993

ON THE PROPOSED PLAN FOR THE

NEWMARK OPERABLE UNIT INTERIM REMEDIAL ACTION

AT THE NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE,

SAN BERNARDINO, CALIFORNIA

This document summarizes and responds to all significant comments received during the public comment period (45 days) on EPA's Proposed Plan for the Newmark Operable Unit (OU) of the Newmark Groundwater Contamination Superfund Site in San Bernardino, California. This summary is divided into two parts. Part I provides a summary of the major issues raised in written comments contained in seven letters received by EPA during the comment period. Part II summarizes the questions and comments made during the public meeting on the Proposed Plan held in San Bernardino on April 14, 1993. Since the distinction between questions and formal comments was not made completely clear at the public meeting, all questions and comments will be included in this responsiveness summary. Most of the questions received at the public meeting were addressed during the meeting, and a brief synopsis of EPA's response with any needed clarification is presented in this Responsiveness Summary.

Copies of all the written comments received by EPA are included in the Newmark OU Administrative Record, available for review at the information repositories for the Newmark Superfund Site. The transcript of the public meeting, including all the questions, comments and responses made during the meeting, is also available at the information repositories.

The comments from each source are grouped together and the commenter is identified at the start of the series of comments or questions.

RESPONSIVENESS SUMMARY - PART I

WRITTEN COMMENTS

1) Commenters (San Bernardino Water Department and committee of nine interested water supply agencies) recommend further study of administrative and technical (facility) details for conveyance of treated water to public water supply agencies.

EPA response: EPA agrees that these issues should be addressed in the design phase of this project. Cooperation from the water

agencies in identification of critical technical and administrative areas is greatly appreciated. It should be noted that the EPA recognizes that this stage of the project is still preliminary and conceptual. EPA's analysis presented in the Feasibility Study and supported by a report prepared for the City of San Bernardino Water Department, concluded that conveyance of treated water from this project to public water supply agencies is a feasible alternative. However, since many important details remain, such as those expressed in this comment, a contingency for final use of the treated water is included in this decision.

2) Commenters recommend further study of costs associated with acceptance of water by public agencies.

EPA response: This issue has not been formally addressed in the RI/FS. Negotiations during the remedial design phase with the agencies accepting the water will require more detailed information. The cost analyses in the FS have not assumed that the agencies accepting the water would bear any of the pumping or treatment costs, to allow a consistent basis for comparison of the costs of the various alternatives. EPA intends that a Feasibility Study should be sufficiently detailed to allow for informed decision making and selection of a proposed plan. More detailed analyses of the selected remedy occur after the public comment period and during the Remedial Design phase.

3) Commenters recommend further study of water rights issues.

EPA response: This issue will be addressed in the design phase. (Also see discussion in the ARARs section, Section 10, of this document.) Formal and informal discussions with water agencies have led EPA to conclude that the agencies which might accept the water are likely to have sufficient rights to the water. The final analysis of this issue depends on the results of negotiations to be held during the design phase.

4) Commenters recommend further study of water quality issues, particularly Total Dissolved Solids (TDS).

EPA response: EPA has been collecting and will continue to collect data on the dissolved solids content of the groundwater near the proposed extraction locations. This information will be considered in negotiations with the agencies which might accept the treated water. We understand that excessive TDS may limit the ability of a number of these agencies to accept water from this project.

5) Commenters express willingness of San Bernardino Water Department to cooperate, pending study of impacts on the Department's distribution system.

EPA response: EPA is grateful for the continued support and cooperation of the San Bernardino Water Department in this project.

6) Commenters express support of project from nine local water supply agencies.

EPA response: The active participation of local water supply agencies in the Newmark RI/FS is gratefully acknowledged. Support of the proposed alternative by the community is an important criterion in selection of the remedy for this Operable Unit.

7) Commenter (East Valley Water District) supports project and intends to negotiate with EPA to accept water.

EPA response: (See response to previous comment, # 6, above)

8) Commenter (City of Rialto Water Utilities) supports the project, preferring delivery to public supply agencies to recharge.

EPA response: EPA is grateful for this expression of support. Recharge to the aquifer will only be considered as a contingency in the event that acceptance by water supply agencies cannot be negotiated. EPA expects that these negotiations will be successful.

9) Commenter (Eric Piehl, College Park Place Homeowners Assn.) expresses appreciation for EPA community involvement and useful information.

EPA response: EPA gratefully acknowledges the patience and active involvement of the community during the RI/FS. The information provided during the project is intended to encourage this involvement, and this information is itself a response to the community's interests.

10) Commenter recommends more rapid action.

EPA response: Reaction to a hazardous chemical release must balance a need for rapid response with careful data gathering and analyses. During this project, EPA has attempted to move the process along as quickly as possible and will continue to seek opportunities to streamline the process.

11) Commenter supports emission control at the Newmark facility.

EPA response: If air stripping is the most efficient and economical treatment method at the Newmark facility, all emissions control regulations will be met. EPA has determined that regulations of the South Coast Air Quality Management District (see Section 10 of this document) will be complied with at this project.

12) Commenter recommends continuing efforts to identify the source of contamination.

EPA response: In September of 1992, EPA initiated an RI/FS to address the source identification. Sample collection and analysis from the few existing wells in the area (called the Muscoy Operable Unit) has been completed recently. Additional observation wells will be necessary, and EPA expects to construct these in the next few months. Preliminary results of this investigation will be made public as soon as possible.

13) Commenter recommends EPA action on Muscoy Plume and other plumes in the area.

EPA response: As discussed for Comment 12, EPA has already started to address the Muscoy Plume (the Muscoy OU of the Newmark Superfund project). Preliminary groundwater flow modelling is nearing completion for the Muscoy plume, and EPA will use much of the information gathered during the Newmark OU to accelerate the process for Muscoy.

EPA does not have direct authority to respond to other releases of contaminants (outside the Superfund site) until that specific site is determined to be a National Priority (currently about 1200 sites nationwide), unless there is an imminent threat to human health or the environment. EPA can attempt to influence the action of state and local authorities by sharing technical information and by open discussion with officials and the community. Additionally, if the contamination from any source threatens the effectiveness of the remedy selected for a Superfund site, EPA has the authority to require an appropriate response.

It appears that EPA's activities at the Newmark site has increased public awareness of other plumes in the basin.

14) Commenter supports alternative 2 (liquid phase GAC) for new treatment facilities and alternative 3 (air stripping) for the existing system at the Newmark wellfield.

EPA response: Comments of support from the community are greatly appreciated. Both alternatives 2 and 3 have been selected as remedies for the Newmark OU. While it appears that a modification of the existing air stripping towers would be the most rapid and economical alternative at the Newmark wellfield, results of a treatability study for emissions control could make liquid phase GAC more attractive over the lifetime of the project. Conversely, extremely positive results of emission control technology tests could actually make air stripping preferable to GAC for the new facility. However, the current information would support the preferences of this commenter.

15) Commenter requests additional information on the health effects of PCE and TCE.

EPA response: A summary of current knowledge of health effects has been received from ATSDR and is included in the record for this project. We apologize that this information was not readily available at the public meeting for the proposed plan. The information about the human health risks that was presented at the meeting is consistent with the summary from ATSDR. EPA does not expect that this additional information would alter community acceptance of the project. This information will be made available at the information repositories in San Bernardino (the County library at 104 West Fourth Street and the Municipal Water District office at 1350 South 'E' Street).

16) Commenter recommends study of current emissions at air stripping towers.

EPA response: EPA will meet the standards for emission control established by the South Coast Air Quality Management District if air stripping is incorporated into the EPA action. The current air stripping units in the Newmark area are part of an action undertaken by the State of California in cooperation with local agencies. It is clear to EPA that emission controls will be installed at these units, although there have been delays due to design difficulties. EPA has been informed that the state is overseeing monitoring of emission levels in the area around the units. Consequently, EPA does not intend to conduct its own study of stripping tower emissions. The effectiveness of emission controls on any EPA stripping towers will be carefully monitored.

17) Commenter supports continued coordination with state and local agencies.

EPA response: Advice and information from various state and local agencies have been quite valuable to this project. EPA intends to maintain this close coordination, including the continuation of the Technical Advisory Committee.

18) Commenter requests extension of comment period (for comments gathered at April 25th Environmental Fair).

EPA response: The comment period was extended to May 5 as a result of requests from the community.

19) Commenter expresses concern over limited distribution of treated water due to water agency facilities and policies.

EPA response: Protection of human health is EPA's overriding concern in this project. It has been determined that water which meets the established drinking water standards will be protective of human health. If local water supply agencies accept the treated water from this project, the point at which the water is conveyed to the water supply agencies (essentially at the end of the treatment system) will be considered "off-site". Off-site actions must meet all applicable regulations at the time of the activity. Your comment will be brought to the attention of the water supply agencies which negotiate to accept the water.

20) Commenter recommends consideration of direct use of imported water rather than recharge to a contaminated aquifer.

EPA response: Unless water import and recharge actions threaten the effectiveness of the Superfund remedy, EPA has no direct authority over such activities. Recharge of imported water provides important storage capacity and reduces the need for expensive transmission pipelines. These critical advantages of a groundwater aquifer increases the importance of protection and cleanup of this contaminated aquifer.

21) Commenter (Gillem Lucas, Air and Water Technologies Corp.) notes that changing air quality regulations will impact emission control analysis of alternative 3.

EPA response: Regulations that are determined to be Applicable or Relevant and Appropriate "freeze" at the time the ROD is signed. If EPA receives new information that the standards met by the remedy are not protective of public health and the environment, EPA would review the remedy and make any changes necessary to ensure protectiveness.

22) Commenter recommends re-analysis of treatment design by another consultant (some innovative combinations have been overlooked).

EPA response: As a result of comments from the public, EPA has analyzed a modification of the liquid phase GAC treatment alternative which would incorporate an innovative advanced oxidation pretreatment. This modification will receive additional study during the design phase. EPA actively seeks technical as well as non-technical input from the community during the public comment period and throughout the RI/FS process.

EPA's ability to enter into contracts is restricted by Federal procurement regulations. The performance of the consultants used on all Superfund projects is regularly scrutinized.

23) Commenter (Diana Lee, California DHS, Environmental Health) recommends evaluation of hazards from current emissions at stripping towers.

EPA response: (See response to Comment #16 above.)

24) Commenter recommends formal survey for private wells in plume area.

EPA response: No formal documentation of EPA's extensive search for existing private wells has been published. Neither EPA, the various state agencies involved, nor local agencies have succeeded in locating any wells other than those noted in the RI/FS. Efforts taken by EPA include: 1) Identification of all wells registered with the state (and San Bernardino County which has been delegated authority for well registration), 2) Review of searches by Cal EPA-DTSC and the Regional Water Quality Control Board during the 1980's, 3) Close communication with local water supply agencies, 4) Repeated requests for information from the public made during numerous public meetings and in interviews with print and electronic media, 5) Review of historical aerial photos for land use and land development patterns, 6) Analysis of a 1945 report/map locating all wells known at the time (this is entered in the administrative record and available at the repositories). Aside from an infeasible door-to-door search, the effort to locate private wells has been exhaustive. EPA will continue to take every effort to locate private wells in the area of the plume, and will conduct a similar search for wells in the Muscoy area.

25) Commenter (Bret Raines) asserts that water supply wells do not provide adequate data for risk assessment.

EPA response: EPA has acknowledged in the RI that the use of water quality data from water production wells (in addition to data from

wells designed solely for water quality monitoring) increases the uncertainty of the calculated risk values. Use of these data (sampled, analyzed and validated by EPA) was justified by a number of considerations, including: 1) Careful analysis of the lithology (geologic structure) at nearby monitoring wells showed no barrier to vertical flow in the contaminated area; 2) The values from production wells corresponded with the highest values from nearby monitoring wells both at the Newmark wellfield and the Electric Avenue(monitoring)/Leroy(production) well area; 3) The history of contaminant levels in production wells at the leading edge of the plume indicates recent arrival of contaminants, and relatively low concentrations would be expected; 4) Values from production wells would tend to be underestimates. The decision to take this action would not be affected even if the VOC concentration were greater and the calculated risk levels were higher.

26) Commenter states that radionuclide buildup in GAC and radon emissions from stripping tower was inadequately addressed in proposed plan.

EPA response: A recent EPA analysis of this issue form the geologically similar San Fernando Valley Superfund sites has been included in the Administrative record for the Newmark OU. There is potential for buildup of short half-life radionuclides in GAC units which will be readily addressed with relatively minor design considerations.

27) Commenter notes that numerical cleanup standards are not explicitly established.

EPA response: Cleanup standards for the aquifer are not established in an interim action ROD. Treatment standards for VOCs in the extracted water are explicitly established at the MCL or more stringent state drinking water standards.

28) Commenter suggests that if injection wells are outside the plume, state anti-degradation regulations would not be met.

EPA response: Alternative 5, the contingency for reinjection if negotiations with water supply agencies fail, would seek to reinject treated water near the edge of the plume, although not necessarily at the most downgradient edge. EPA has not identified the location of reinjection wells which would meet these desired criteria with certainty, although the eastern edge of the plume was used in the FS for the sake of analysis. The state anti-degradation regulations (State Water Board Resolution 68-16) is an ARAR for this remedy and as such will be complied with if the reinjection contingency is necessary. If the injection wells must be located in an area that is clearly off-site, the action must comply with all legal regulations at the time of the activity.

29) Commenter believes that "Approved RI" format was not followed. (Presumably referring to EPA RI guidance documents.)

EPA response: The Newmark RI/FS has been consistent with EPA policies and guidance. Use of guidance is subject to site specific

considerations and are not absolutely prescriptive. The Newmark RI/FS process was streamlined whenever possible without compromising the decision selection, in agreement with current EPA policy.

30) Commenter feels that inadequate data was collected to support model assumptions.

EPA response: The flow model used for the limited purposes of the Newmark RI/FS met accepted standards of calibration and verification. This project was quite fortunate to be able to subject the analysis to scrutiny by local and national experts in hydrogeology. The general behavior of the EPA model was consistent with the conceptual understanding of these experts and with independent efforts to model the basin. Additional data will be considered as it becomes available, and the model will be revised as necessary. However, EPA is satisfied with the model as an analytical tool for this phase of the project.

31) Commenter feels that the ARARs review is inadequate.

EPA response: The ARARs review for federal regulations compares favorably with the thoroughness of ARARs reviews for other recent California groundwater Superfund sites. It is the responsibility of the state to identify and justify potential state ARARs. The state's analysis for Newmark OU ARARs was quite thorough.

32) Commenter expresses opinion that Newmark project is inconsistent with other Superfund sites in the state, particularly sites at which USEPA is not the lead.

EPA response: The decision-making process and the remedy selected for the Newmark OU is quite similar to other recent groundwater contamination Superfund sites in southern California and alluvial basin sites in Arizona. EPA staff for the San Fernando Valley, San Gabriel Valley and Indian Bend Wash (Arizona) sites have provided invaluable advice and consultation to the Newmark project.

33) Commenter recommends further investigation prior to any action.

EPA response: Aside from this commenter, state and public comments are supportive of rapid implementation of the selected remedy for the Newmark OU. EPA has conducted a thorough technical and administrative analysis of the Newmark project and has determined that sufficient information is available to support the selected remedy.

RESPONSIVENESS SUMMARY - PART II

Questions and comments from Public meeting held April 14, 1993

Jeff Wright

1) Requests two week extension to public comment period.

EPA response: This request was granted. (See response to Comment #18 in Part I above.)

2) Expresses concern over air stripping without emission control.

EPA response: EPA agrees with the concern expressed and will comply with South Coast Air Quality Management District emission regulations if air stripping is implemented. (See response to Comment #11 in Part I above.)

3) Questions effectiveness of Carbon Filtration (liquid GAC).

EPA response: This technology has been used for treating water supplies contaminated with PCE and TCE throughout the country for many years, and is considered quite reliable. Currently, several GAC treatment systems are operating satisfactorily in the San Bernardino area to treat contaminated public water supply.

4) How often is carbon changed?

EPA response: The carbon is changed when its adsorption capability declines and it cannot provide the desired treatment of the water. The major factors affecting the time for changing the carbon are the concentration of the incoming water and the flow rate of the water through the carbon. The system is carefully monitored, and the carbon is changed before there can be any compromise in the effectiveness of the treatment.

EPA estimates that the carbon would need to be changed approximately every nine months at the rates and concentrations assumed in the Feasibility Study. Current operations in San Bernardino (treating lower concentrations) have required a single change of carbon after nearly two years.

5) Concern over disposal of spent carbon, transfer of contamination to another medium (carbon), and eventual incineration.

EPA response: EPA has decided to pursue a modification of the conventional treatment technologies (which do not destroy or recycle the contaminants) which would chemically destroy a large percentage of the contaminants. This innovative modification will need to be tested during the design phase. Additionally, the state and local agencies have had recent success in testing a method to recapture contaminants from the emissions of air strippers. EPA will comply with the Best Available Control Technology (BACT) requirement for air stripper emissions, and expects that this new technology will become the BACT for this project.

6) Supports remedy that destroys or recycles contaminants.

EPA response: See response to previous comment, #6 in Part II, above.

John Stevens

7) Would like more information on health effects of PCE and TCE, and particularly long term exposure effects.

EPA response: See response to Comment #15, in Part I above.

8) Questions protectiveness of 5 parts per billion (ppb) of PCE and TCE in the treated drinking water.

EPA response: Using assumptions that would tend to overestimate the risk, EPA has calculated that meeting the federal and state drinking water standards for PCE and TCE (both established at 5 ppb) would bring the carcinogenic risk from drinking water into the range of one in a million. This is within the level defined as "acceptable". The actual treatment levels achieved will be closely monitored and the information will be available to the public.

9) Questions whether effects in San Bernardino have been studied.

EPA response: The incidence of cancer in San Bernardino and other communities is monitored in a Cancer Registry, which are reviewed by state and local public health agencies and by national health agencies where Superfund sites are involved. Results of this monitoring effort have not shed any light on effects of this contamination. It is difficult to detect a definite trend of increased cancer incidence in a community without much more data than has been collected to date, and it is even more difficult to relate cancer incidence with a possible cause (such as contaminated water).

10) Comments that information on toxicological effects should be made widely available to San Bernardino residents.

EPA response: See response to Comment #15 in Part I above, and response to Comment #8 in Part II.

Tim Ayr

11) Would like more information about the source of contamination (particularly Camp Ono).

EPA response: See response to Comment #12 in Part I above.

12) Is there any information about unregistered wells?

EPA response: See response to Comment #24 in Part I above.

13) Is there a short-term health threshold for PCE and TCE?

EPA response: Most short-term health thresholds for these potential

carcinogens have been established for concentrations in the air rather than in drinking water.

The U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, published concentrations that are "Immediately dangerous to Life or Health" at 500 parts per million for PCE and 1000 ppm for TCE. Permissible Exposure Limits, which are not to be exceeded during any 8-hour work shift, have been established by OSHA at 25 ppm for PCE and 50 ppm for TCE. EPA has calculated Removal Action Levels (levels for which a 7 year exposure in drinking water would not present an unacceptable risk) for PCE at 70 parts per billion and for TCE at 300 parts per billion.

14) Would PCE and TCE be vertically distributed in the aquifer?

EPA response: When these compounds are not dissolved in water, both would tend to sink since they are more dense than water. When either PCE or TCE are released into the soil above the groundwater, the upper portion of the groundwater would be contaminated first, and then deeper parts of the aquifer will be affected as the contaminants sink deeper. Eventually (after many years) the PCE and TCE might be expected to form a pool at the bottom of the aquifer. Once the contaminants are dissolved in the water (a fairly slow process) the contaminated water would tend to spread laterally, rather than vertically, unless pumping or recharge caused a vertical gradient.

15) How fast is the contamination moving?

EPA response: The leading edge of the contaminant plume may be moving as fast as the water is moving in the aquifer. EPA has estimated that the groundwater velocity ranges from about 180 feet per year (0.51 ft/day) near the Newmark Wells, to 573 ft/year just east of Little Mountain, and about 310 ft/year in the lower two-thirds of the plume. (See Section 6 of the Remedial Investigation Report)

16) Are there other contaminants besides PCE and TCE? Would chemical mixtures form new contaminants?

EPA response: EPA has detected a number of other compounds related to PCE and TCE, which may be expected in these solvent mixtures from the original manufacturing process or the pattern of solvent use and disposal. None of the compounds were detected in exceptionally high concentrations. (See the RI Report.) There does not appear to be evidence of reactions occurring from the mixing of these compounds or other potential waste chemicals.

17) Is the water served in San Bernardino safe to drink?

EPA response: See response to Comment #8 in Part II above.
Eric Piehl

18) Is there a threat to residents living above the plume?

EPA response: EPA's investigations have not shown a measurable

exposure of the groundwater contaminants to the population living directly above the groundwater contaminant plume at the Newmark site.

19) Is disclosure of the project required when selling a house above the plume?

EPA response: There are certain State of California disclosure requirements for conditions which would affect property values. A real estate agent or attorney should be able to advise how these regulations apply in San Bernardino. The size of the Newmark plume would mean that a large portion of San Bernardino (and perhaps neighboring communities outside the city limits) are within or near the Superfund site, even though the exposure threat is minimal (see previous response).

20) Recommends emission control of Newmark air stripping towers.

EPA response: See response to Comment #11 in Part I above.

21) How often is carbon (liquid GAC) changed?

EPA response: See response to Comment #4 in Part II above.

22) How is spent carbon disposed?

EPA response: There are a number of ways that carbon is dealt with after it has exhausted its ability to treat contaminated water. The "spent carbon" is often treated at very high temperatures to burn off the contaminants while regenerating the carbon. Another method is to burn the carbon and the contaminants together (often as a fuel source for power generation). The City of San Bernardino has used this method recently, shipping the used carbon to Kansas City. Another common and currently legal option is to dispose of the carbon in a licensed landfill.

23) Are other chemicals formed during incineration of spent carbon?

EPA response: If the incineration is conducted properly, formation of chemical by-products should be negligible.

24) Will water treatment systems clean up water to better than MCLs?

EPA response: See response to Comment #8 in Part II above.

25) Expresses concern over limited distribution of treated water due to water agency facilities and policies.

EPA response: See response to Comment #19 in Part I above.

26) Recommends consideration of direct use of imported water rather than recharge to a contaminated aquifer.

EPA response: See response to Comment #20 in Part I above.

Helen Kopczynski

27) What storage facilities will be required for treated water while deciding whether to reinject or convey to public supply?

EPA response: The decision to reinject or not will be made before the system is constructed, and no storage facility will be required.

28) Which water supply system will receive the treated water?

EPA response: There have been no commitments made by EPA or any water supply agency. EPA's current expectations are that a large portion of the treated water would be accepted by the San Bernardino Water Department, with the remainder by several other local agencies in the San Bernardino area. See the letters from these agencies referred to in Comments #1 through 8 in Part I above.

29) Have these treatment systems been used before in public water supply situations?

EPA response: See response to Comment #3 in Part II above.

30) Operation and location of injection wells is unclear.

EPA response: The general potential location of injection wells was suggested in the Feasibility Study Report. It must be noted that the exact location of any of the facilities that may be constructed will depend on additional information to be gathered during the design phase of the project. Some important considerations for location of injection wells are discussed in the response to Comment #28 in Part I above.

31) Locations for all the proposed actions are not clearly explained.

EPA response: As discussed in the previous response, EPA suggested some potential locations for facilities. More precise locations will be dependent on additional information to be gathered during the design phase. Since gathering such information is time-consuming and costly, EPA seeks public comment on the range of alternatives considered before selecting which remedy (or set of remedies) to continue into the design phase.

32) Operating costs for the remedies seems high.

EPA response: The Newmark Superfund site is an enormously large site with vast quantities of water involved. Additionally, the project is likely to be in operation for 30 years or more. The cost to society of the loss of this resource (the aquifer in the San Bernardino Valley) is much greater than the cost of this project, without consideration of the possible health risks of the spreading contaminant plume.

EPA's cost estimates are not precise since the final design contains a number of uncertainties. The analyses to develop the

costs have been quite thorough given these limitations. (See the Feasibility Study report for the detailed analyses.)

Among the factors which may change the operating costs are efficiencies which may be realized by allowing the local water departments to operate the system. EPA is also expecting that the value of the treated water can be agreed upon in negotiations with the water departments, and a portion of this value reimbursed to the cleanup project (either directly or indirectly).

33) Cost for this OU should be spent on source identification and control.

EPA response: EPA agrees that source identification and control is an essential goal and has committed a substantial budget to these tasks. Initiating the Newmark OU interim action is not expected to interfere with progress on the source investigation.

Sharon Coffelt

34) Is the contamination that is entering the Newmark OU area from the west flowing around the hills, between the hills or through the hills?

EPA response: The flow of contaminated groundwater has been traced to the gap between Wiggins Hill to the north (Wiggins is the name of the hill north of the intersection of Kendall and University Parkway) and Shandin Hills (Little Mountain) to the south. The hills themselves are formed from material that is not expected to permit significant water flow.

35) Will the natural hot water from parts of this aquifer impact the project?

EPA response: The contaminants are not expected to reach the parts of the aquifer where natural thermal water exists. Both PCE and TCE are relatively stable, with boiling points around 200° F.

36) EPA has provided helpful information.

EPA response: EPA is grateful for comments from the community. See response to Comment #9 in Part I above.

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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

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RECORD OF DECISION

MUSCOY PLUME OPERABLE UNIT INTERIM REMEDY

PART I. DECLARATION

SITE NAME AND LOCATION

Newmark Groundwater Contamination Superfund Site
Muscoy Plume Operable Unit
San Bernardino, California

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Muscoy Plume Operable Unit, Newmark Groundwater Contamination Superfund site, chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §§9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan or NCP), 40 CFR Part 300. This decision is based on the administrative record for this operable unit.

In a letter to EPA dated March 21, 1995 the State of California, through the California Environmental Protection Agency's (Cal-EPA) Department of Toxic Substances Control (DTSC) concurred with the selected remedy for the Muscoy Plume Operable Unit.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare or the environment.

DESCRIPTION OF THE REMEDY

EPA has selected an interim remedy for the Muscoy plume of groundwater contamination in the Newmark Groundwater Contamination Superfund Site. This portion of the site cleanup is referred to as the Muscoy Plume Operable Unit (OU). An OU is a discrete action that comprises an incremental step toward comprehensively addressing Superfund site problems. The Muscoy Plume OU is an interim action focusing on contamination in the underground water supply in the Bunker Hill Basin of San Bernardino, west of the Shandin Hills (Figures 1 and 2). The portion of the groundwater contamination north and east of the Shandin Hills, called the Newmark OU, was addressed in a separate action (Newmark OU Record of Decision, August 4, 1993). The selected remedy and all of the alternatives presented in the feasibility study were developed to meet the following specific objectives for the Muscoy Plume OU:

- To inhibit migration of groundwater contamination into clean portions of the aquifer;
- To protect downgradient municipal supply wells south and southwest of the Shandin Hills;
- To begin to remove contaminants from the groundwater plume for eventual restoration of the aquifer to beneficial uses. (This is a long-term project objective rather than an immediate objective of the interim action.)

The remedy involves groundwater extraction (pumping) and treatment of 6,200 gallons per minute (gpm) in San Bernardino at the leading edge of the contaminant plume (Fig. 2), which is approximately between Highland Avenue and Base Line Street, west of Interstate 215 and east of Medical Center Drive. The exact number, location and other design specifics of the extraction wells will be determined during the remedial design phase of the project to inhibit the migration of the contaminant plume most effectively.

All the extracted contaminated groundwater shall be treated to remove Volatile Organic Compounds (VOCs) by either of two proven treatment technologies: **granular activated carbon (GAC) filtration** or **air stripping**. EPA determined during the Feasibility Study (December 1994) that these treatment technologies are equally effective at removing VOCs and are similar in cost at this OU. Both technologies have been proven to be reliable in similar applications. The VOC treatment technology which best meets the objectives of the remedy for the Muscoy Plume OU will be determined during the remedial design phase, when more detailed information is available to assess effectiveness and cost.

After treatment, the water shall meet all applicable or relevant and appropriate drinking water standards for VOCs (See Table 2). If air stripping treatment is selected, air emissions shall be treated using the best available control technology (e.g., vapor phase GAC) to ensure that all air emissions meet applicable or relevant and appropriate requirements.

The treated water will be transferred to a public water supply agency for distribution. Groundwater monitoring wells will be installed and sampled regularly to help evaluate the effectiveness of the remedy.

If the public water supply agency does not accept any or all of the treated water (possibly due to water supply needs), any remaining portion of water will be recharged into the aquifer via reinjection wells near the edge of the plume. The number, location and design of the reinjection wells will be determined during the remedial design phase to best meet the objectives of the remedy and meet applicable or relevant and appropriate requirements.

The total duration of the Muscoy Plume OU interim remedy will be approximately 33 years, with the first three years for design and construction. EPA will review this action every five years throughout this interim remedy period and again at the conclusion of this period to ensure that the remedy continues to be protective of human health and the environment.

The remedial action for the Muscoy Plume OU represents a discrete element in the overall long-term remediation of groundwater at the Newmark Groundwater Contamination Superfund Site. The objectives of this interim action (i.e., inhibiting migration of groundwater contamination to clean portions of the aquifer, protecting downgradient municipal supply wells south and

southwest of the Shandin Hills and beginning to remove contaminant mass from the aquifer in the Muscoy plume) are not inconsistent with and will not preclude implementation of any final, overall remedial action or actions selected by EPA in the future for the Newmark Groundwater Contamination Superfund Site.

EPA is the lead agency for this project and the Department of Toxic Substances Control of the State of California Environmental Protection Agency is the support agency.

DECLARATION

This interim action is protective of human health and the environment, complies with federal and state applicable or relevant and appropriate requirements directly associated with this action and is cost effective. This action utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable, given the limited scope of the action. Because this action does not constitute the final remedy for the site, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed at the time of the final response action. Subsequent actions are planned to fully address the principal threats at this site.

Because this interim remedy will result in hazardous substances remaining on-site above health-based levels, EPA shall conduct a review, pursuant to CERCLA Section 121, 42 U.S.C. Section 9621, at least once every five years after commencement of remedial action to ensure that the interim remedy continues to provide adequate protection of human health and the environment.

Keith A. Takata — 3-24-95

Keith A. Takata
Deputy Director for Superfund
Hazardous Waste Management Division

Date

PART II. DECISION SUMMARY

This Decision Summary provides an overview of the Muscoy Plume OU interim remedy, including a description of the nature and extent of contamination to be addressed, the remedial alternatives, the comparative analysis of the remedial alternatives, a description of the selected remedy and the rationale for remedy selection.

1. SITE LOCATION AND DESCRIPTION

The Muscoy Plume OU is located within the Bunker Hill Basin (also known as the Upper Santa Ana River Basin) in San Bernardino, California. The following sections present a basin description, regulatory history, and a summary of the Remedial Investigation and Feasibility Study (RI/FS) activities within the Newmark Groundwater Contamination Superfund Site (hereinafter referred to as the Newmark Superfund Site).

1.1 Description of the Bunker Hill Basin

The groundwater contamination at the Newmark Superfund Site affects a large portion of a 110 square mile aquifer in the San Bernardino Valley of southern California. (Figure 1). The aquifer, known as the Bunker Hill Basin, is bounded by the San Bernardino and San Gabriel Mountains to the north, the Crafton Hills and badlands on the southeast, and by a hydrogeologic barrier formed by the San Jacinto fault along the southwest. (Figure 2) Waters flowing from all parts of the aquifer join in a confined "artesian zone" before leaving the basin where the Santa Ana River crosses the San Jacinto faultline.

The groundwater in this aquifer is a valuable resource, currently serving nearly a half-million residents of San Bernardino, Riverside and surrounding communities. According to the San Bernardino Valley Municipal Water District, the Bunker Hill Basin aquifer is capable of storing approximately 1.6 trillion gallons and producing 81 billion gallons each year.

Coarse erosional material (alluvial and river channel deposits) have accumulated in the this area of the basin to depths of 400 to over 1900 feet, atop bedrock formations that act as barriers to further vertical movement. The Shandin Hills, created by an upward fold in these impermeable bedrock formations, forces groundwater flowing from the north and west to flow around either side of the hills rather than directly south toward the Santa Ana River.

Most of the western portion of the basin is an unconfined aquifer, with no substantial barriers to infiltration from the surface. In the lowest area of the basin (the south-central portion around the Santa Ana River), several extensive clay layers have formed an aquitard, overlying and capping the water-bearing sand and gravel aquifers. This confined portion of the aquifer produces a large supply of water for nearby communities. The aquifer receives rainfall and natural runoff from the surrounding mountains, collected floodwater from rivers, creeks and washes, and water imported from outside the region that is spread over percolation basins.

The Muscoy plume encompasses a portion of the Bunker Hill aquifer located beneath the western portion of the city of San Bernardino and an unincorporated part of San Bernardino County known as the Muscoy community. Residential and commercial use predominates throughout the Newmark Superfund Site. Very little of the area remains undeveloped.

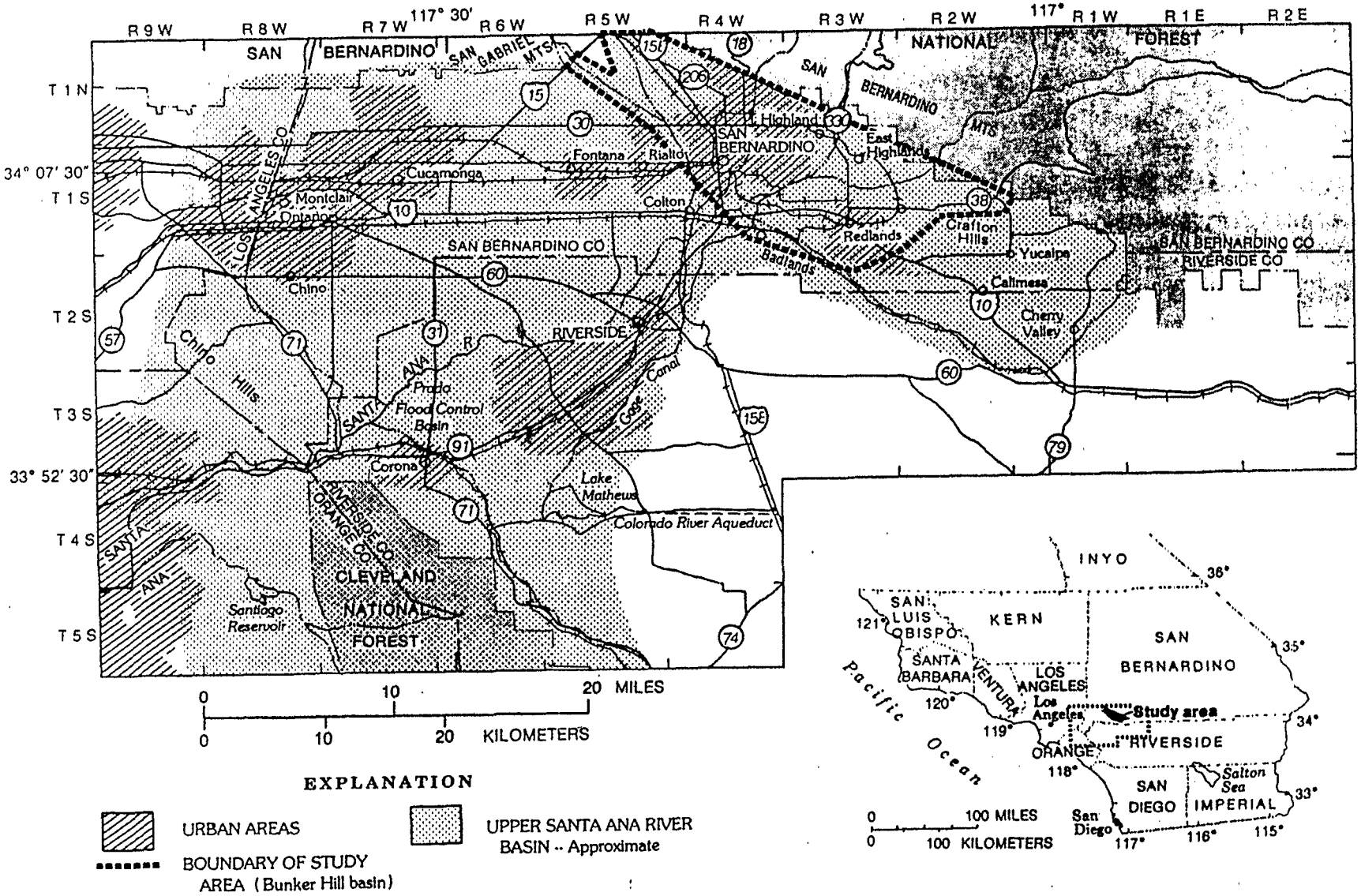


FIGURE 1. Location of Bunker Hill Groundwater Basin, Upper Santa Ana River Valley San Bernardino, California

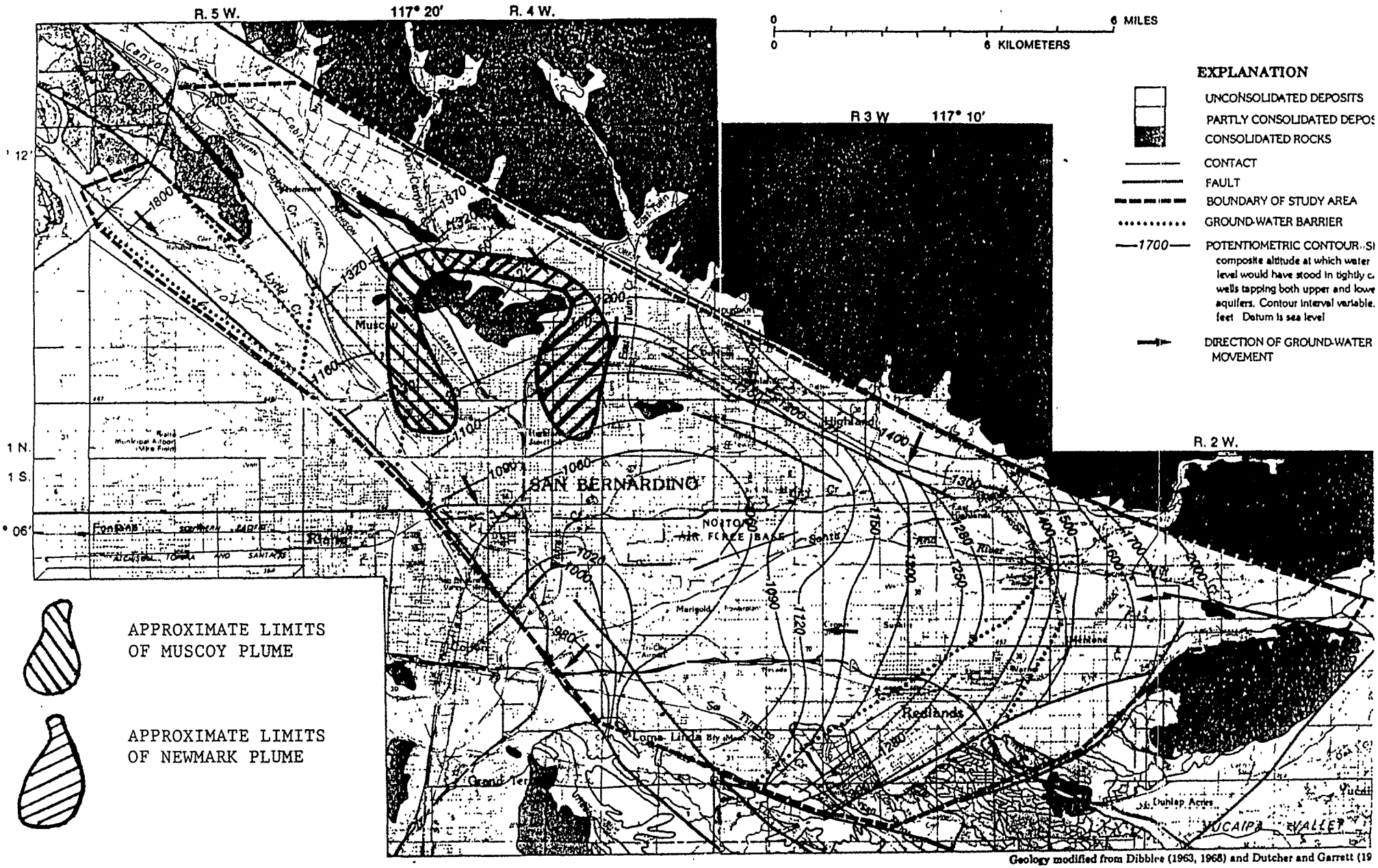


FIGURE 2. Altitude of Groundwater Surface and Direction of Groundwater Flow (1986)

1.2 Description and Background of the Newmark Superfund Site

The primary contaminants of concern at the Newmark Superfund Site are the solvents **perchloroethylene (PCE) and trichloroethylene (TCE)**, which are widely used in a variety of industries, including dry cleaning, metal plating, and machinery degreasing. These organic solvents are in a class of chemicals, known as volatile organic compounds (VOCs), which evaporate (volatilize) readily at room temperature. If large enough amounts of PCE and TCE are spilled or leaked onto the ground, these chemicals can reach the aquifer where they will slowly dissolve into groundwater. As the contaminated water flows away from the source, a plume of contaminated water can spread many miles downstream. Wells within the plume will be pumping contaminated water.

As of 1995, PCE and TCE in concentrations exceeding the drinking water standards of 5 micrograms per liter (parts per billion) have been detected in 20 public water supply wells in northern San Bernardino. The pattern of contamination, defined by sampling monitoring wells and water supply wells throughout the Newmark Superfund Site (see Figure 3), indicates that a release or releases occurred in northwest San Bernardino (approximately in the area of a former military depot known as the San Bernardino Engineering Depot or Camp Ono), and that contaminants have spread more than five miles toward the Santa Ana river to the southeast. A major outcrop of relatively impermeable bedrock (the Shandin Hills) splits the plume of contaminated groundwater into an eastern branch (the Newmark plume) and a western branch (the Muscoy plume). EPA is addressing the leading edges of the plume as two separate Operable Units. The identification, characterization and remediation of the source of contamination will constitute a third Operable Unit. The RI/FS report for the Newmark OU was finalized in March, 1993, and EPA's Regional Administrator signed a Record of Decision for the Newmark OU interim remedy on August 4, 1993. The Newmark OU Remedial Design was initiated in September, 1993, and is expected to be completed in early 1995.

1.3 Description and Background of the Muscoy Plume Operable Unit

The Muscoy Plume OU encompasses a portion of the Bunker Hill Basin aquifer beneath the northern portion of the city of San Bernardino and an unincorporated portion of San Bernardino County known as the Muscoy community. The Muscoy plume is the western lobe of the Newmark Superfund Site groundwater contamination. This contamination has migrated south of Highland Avenue in San Bernardino along a flow path roughly parallel to the Cajon Wash. The Cajon Wash, a major recharge zone of the Bunker Hill groundwater basin, prevents the contaminants from migrating further west and tends to push the contaminants toward the east. The Shandin Hills bedrock outcrop limits the eastern flow of the Muscoy plume. The leading edge of the Muscoy plume arrived at San Bernardino's 19th Street wells in the mid to late 1980's but has not yet reached the wells at 10th Street, approximately one mile to the southeast. At an estimated flow rate of 300 to 500 feet per year, contaminated groundwater would require ten to twenty years to migrate from the 19th Street wells to the 10th Street wellfields.

The EPA placed the Newmark site on the National Priorities List (NPL) in March, 1989. At that time, EPA believed the eastern (Newmark) plume of contamination to be completely separate from the western (Muscoy) plume of groundwater contamination.

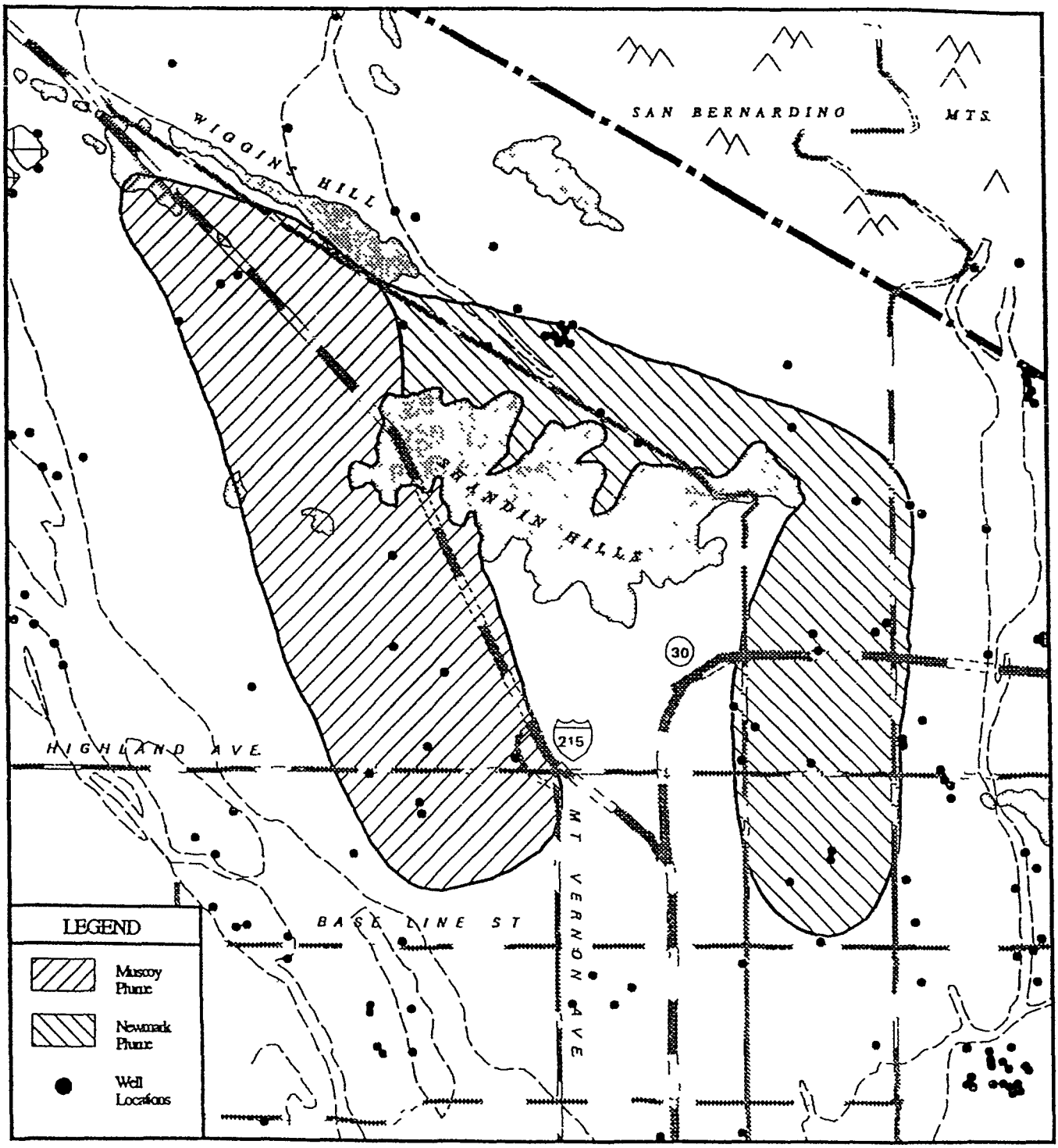


FIGURE 3. Extent of Groundwater Contamination and Well Locations, Newmark Superfund Site - Newmark and Muscoy Plumes

The EPA Remedial Investigation (RI) began in late 1990, focusing entirely on the Newmark plume. Results from the RI showed that the originally suspected source of the Newmark plume (a disposal pit for waste liquids from a former airport) was not the source of the contamination. Additional well drilling in the summer of 1992 traced the groundwater contamination back through a previously undiscovered underground channel flowing from the western (Muscoy) side of the valley. EPA expanded the Newmark Superfund Site Remedial Investigation in September, 1992 to include the Muscoy plume.

Due to EPA's experience with the Newmark plume and to the availability of over ten years of water quality data from state and local groundwater investigations in San Bernardino, EPA was able to expedite the Remedial Investigation of the Muscoy Plume OU. In 1992 all available wells in the vicinity of the Muscoy plume were sampled by EPA. PCE and TCE were the most prevalent contaminants in all of the contaminated wells. Other VOCs were also detected in trace quantities. These results were consistent with water quality samples analyzed by state and local authorities since 1980.

In 1993, EPA recognized that sufficient information had been collected to develop interim action alternatives to control the spread of the Muscoy plume while proceeding with field work to identify the source. The Muscoy Plume OU has the limited objectives of addressing migration at the leading edge of the plume while EPA continues to investigate the source of the contamination. The RI/FS Report for the Muscoy Plume OU was finalized in December, 1994.

2. SITE HISTORY

In 1980, the California Department of Health Services (DHS) initiated a monitoring program in San Bernardino to test for the presence of industrial chemicals in the water from public supply wells. The results of initial tests and of subsequent testing revealed the presence of PCE and TCE contamination in large portions of the groundwater of the Bunker Hill Basin.

Fourteen wells operated by the city of San Bernardino Water Department in the North San Bernardino / Muscoy area were found to contain concentrations of PCE and TCE above the state and federal MCLs of 5 parts per billion (ppb) for both TCE and PCE. The solvents were found in wells scattered around the north, east and west sides of the Shandin Hills. (Figure 3) The affected wells had supplied nearly 25 percent of the water for the city of San Bernardino. As of 1995, a total of thirteen public water supply wells have been contaminated by the solvents in the Newmark plume, and seven water supply wells have been affected in the Muscoy plume.

The cities of San Bernardino, Riverside and other water agencies in the area closely monitor the quality of drinking water delivered to residents. These entities have taken the necessary steps to ensure that the water served to residents meets all federal and state drinking water requirements.

Following investigations by the Santa Ana Regional Water Quality Control Board and California Department of Health Services (now the California EPA Department of Toxic Substances Control), the state provided over $6 million to construct four water treatment systems to protect the public water supply. After years of testing it became apparent that the solvents in the groundwater were continuing to flow south, threatening many more wells operated by San

Bernardino, Riverside and other communities. The state requested federal involvement to address this regional problem.

The state investigations published in 1986 and 1989 both suggested that the widespread contamination in northern San Bernardino probably resulted from numerous small, unidentified sources. The Shandin Hills and nearby hill formations were assumed to separate the eastern (Newmark area) aquifer from the western (Muscoy area) aquifer, making it unlikely that all 14 wells could have been contaminated from a single source. However, continued monitoring of existing water supply wells and monitoring wells constructed by the state established a record of contamination relatively uniform in composition and concentration throughout the area north and east of the Shandin Hills. This pattern strongly suggested a single plume in this area.

Aerial photographic analysis of the Newmark Superfund Site was completed by EPA's Environmental Monitoring Systems Laboratory in September, 1990. This analysis, along with interviews of witnesses, suggested that the primary source of contamination was a suspected solvent disposal pit ("cat pit") on the former site of the private San Bernardino Airport. Waste oil and solvents were disposed of at this site from the late 1950's intermittently through the early 1970's. Several minor activities in different parts of the airport site were also identified as potential waste releases. No other sources could be identified between the disposal site and the closest uncontaminated wells upgradient. The waste disposal pit was also within several hundred feet of the Newmark wellfield (four City of San Bernardino Water Department wells). These wells exhibited the highest concentration of contaminants measured in any wells in the area, nearly 200 µg/l (parts per billion) of PCE.

Based on information obtained during the Remedial Investigation, the San Bernardino Airport site is no longer suspected to be the source of the Newmark plume. It is now believed that the principle source (or sources) lies on the west side of the Shandin Hills and is the likely origin of both the Newmark and Muscoy plumes.

While ongoing investigations attempt to definitively identify the source, EPA determined that the continuing migration of the Muscoy plume could be inhibited through an interim remedial action (the Muscoy Plume OU).

3. ENFORCEMENT ACTIVITIES

The results of the Remedial Investigation and other investigations undertaken by EPA and state agencies indicate that the project lead for the Muscoy Plume OU will remain with EPA.

As explained above, the disposal pits at the former San Bernardino Airport site were originally suspected to be the source of the contamination. Considerable effort was expended on a search for Potentially Responsible Parties (PRPs) while the airport site disposal pits were the suspected source. However, results of the Remedial Investigation reveal that the source of the contamination is more than one mile upgradient of the originally suspected source. No residual contamination was found in the unsaturated zone or the upper portion of the aquifer immediately beneath former disposal pits. The airport site is no longer considered a likely source of the contamination.

The current focus of the PRP search is on the potential sources located to the northwest of the Shandin Hills. These potential sources include the San Bernardino Engineering Depot (a WWII-era army base decommissioned in 1947, commonly known as Camp Ono), a closed county landfill (the Cajon landfill), and subsequent industrial activities at the site of the former Camp Ono.

EPA formally requested detailed information from the Department of Defense (DoD) concerning the operations at the former Camp Ono in 1993 and again in 1994. A partial reply to the earlier request was received November, 1993. In this response, the DoD noted that solvents had been used and disposed of at the base. The designated DoD representative reported that research into EPA's 1994 information request has commenced. The Department of Defense was notified of its potential liability in a General Notice letter sent on December 22, 1993. EPA and DoD (through the Army Corps of Engineers) have been communicating regularly regarding the Newmark Superfund Site throughout 1994. On December 16, 1994, the designated representative of the Department of Defense was sent a copy of the Muscoy Plume Proposed Plan, with a transmittal letter stating that the Muscoy Plume OU was the second OU of the Newmark Superfund Site. EPA noted that the previous General Notice letter sent on December 22, 1993, notified DoD of potential liability for the entire Newmark Superfund Site.

4. HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA's preferred remedial alternative, as well as four other alternatives were described in EPA's Proposed Plan for the Muscoy Plume OU (December 1994). The Proposed Plan was in the form of a fact sheet and was distributed to all parties (approximately 700) on EPA's mailing list for the Newmark project. The public comment period was extended to more than 5 weeks (38 days) to compensate for the holiday period in December. EPA received no requests for extensions from members of the public. The public comment period closed on January 20, 1995. EPA received approximately 16 comments, with a large proportion relating to source characterization rather than control of the Muscoy plume. These comments and EPA's responses to these comments are summarized in Part III (the Responsiveness Summary) of this ROD.

A press release to announce the release of the Proposed Plan was issued December 16, 1994. The press release and the Proposed Plan Fact Sheet announced that a public meeting to discuss and receive comments on the Muscoy Plume Proposed Plan was scheduled for January 10, 1995. Notice of the public meeting as well as the availability of the Proposed Plan was published in the Inland Empire Sun on December 14, 1994. In addition, several newspaper articles were written about the Remedial Investigation, the Feasibility Study and the Proposed Plan for the Muscoy Plume OU. A map of the Muscoy Plume OU was provided in the Proposed Plan and the above-referenced newspaper articles published maps and described the area that would be impacted by the Muscoy Plume OU.

A public meeting was held in the City of San Bernardino Council Chambers on January 10, 1995, to discuss EPA's preferred alternative and the other alternatives. At this meeting EPA gave a brief presentation regarding the Proposed Plan, answered questions, and accepted comments from members of the public. This meeting was broadcast live on the local cable channel.

EPA expended considerable effort developing strong community relations. A Technical Advisory Committee has been successful in maintaining close communication with local and state agencies. For communication with the local community, three principle mechanisms have been employed: formal presentations (open houses, meetings with organizations and fact sheet distribution), contact with the print and electronic media, and informal discussions with home-owners' associations and individuals.

Three different home-owners' associations, the Muscoy Municipal Advisory Council and several water supply agencies accepted EPA's offer for informal discussions of the project. Drilling around these communities was greatly facilitated by open communication, including distribution of four fact sheets. Presentations were made to the staff and teachers at a local school, and the Project Manager taught the 5th grade class about groundwater and chemical pollution as it relates to the project.

5. SCOPE AND ROLE OF THE OPERABLE UNIT

The interim remedial action for the Muscoy Plume OU represents a discrete element in the overall long-term remediation of groundwater contamination in the San Bernardino area. Since the source of the contamination has not been definitively identified, the final overall plan for the remediation of the entire Newmark Groundwater Contamination Site has not yet been determined. The Muscoy plume constitutes a major portion of the contaminated aquifer and the Muscoy Plume OU interim remedial action will be a significant step toward eventual remediation. EPA does not expect the objectives of this interim action to be inconsistent with, or preclude, any final action for the entire site.

The objectives of the Muscoy Plume OU are:

- To inhibit migration of groundwater contamination into clean portions of the aquifer;
- To protect downgradient municipal supply wells south and southwest of the Shandin Hills;
- To begin to remove contaminants from the groundwater plume for eventual restoration of the aquifer to beneficial uses. (This is a long-term project objective rather than an immediate objective of the interim action.)

The analysis of the No Action option indicates that unless this action is implemented, the contamination will continue to spread to clean areas of the aquifer which are currently important sources of drinking water.

When sufficient information is available on the contaminant source and transport from the source, EPA will review and evaluate various groundwater remediation options for the entire Newmark Superfund Site. It is expected that the Muscoy Plume OU remedy will constitute an integral part of the final remedy.

EPA will continue to monitor aquifer behavior and contaminant transport as part of this interim action. The information gathered will be important in the analysis of a remedy for the entire Newmark Superfund Site.

Table 1. Maximum Concentrations of Volatile Organic Compounds Detected (above 0.5 µg/l detection limit) in Wells in the Muscoy Plume

Compound	Maximum Concentration (µg/l)
1,1 Dichloroethane (DCA)	0.8
cis-1,2-Dichloroethene (DCE)	6
Trichloroethene (TCE)	6
Tetrachloroethene (PCE)	27
Dichlorodifluoromethane (Freon 12)	28
Trichlorofluoromethane (Freon 11)	4

6. SUMMARY OF MUSCOY PLUME OU SITE CHARACTERISTICS

EPA's Remedial Investigation provided critical understanding in three general areas: groundwater flow characteristics, contaminant identification and concentration, and potential routes of exposure.

The Remedial Investigation confirmed that most recharge to the Muscoy Plume OU part of the Bunker Hill Basin originates along the San Bernardino and San Gabriel Mountains to the north via the Cajon Wash along the west. Drinking water wells north and west of the site show that this source is not contaminated. Another important observation was that clay or silt layers that would inhibit vertical contaminant migration were not present in wells near the leading edge of the plume. This indicates that contaminants at any depth in the aquifer would not be prevented from entering water supply wells in the area, regardless of the depth of the water supply well. A groundwater flow model was successfully developed to describe the aquifer behavior and proved to be a useful tool in developing remedial alternatives.

The contaminants identified were predominantly chlorinated solvents. (Table 1) Tetrachloroethene (PCE) was found in all contaminated wells at concentrations less than 30 parts per billion (ppb). Trichloroethene (TCE) was the next most common contaminant, and never exceeded 10 ppb. Other related contaminants of concern, cis-1,2-dichloroethene (DCE) and 1,1-dichloroethane (DCA), were identified at concentrations below drinking water standards. Chlorofluorocarbons (freons) were also detected.

Analysis of potential exposure routes during the Remedial Investigation concluded that the only measurable exposure to the VOCs would be through untreated domestic water supply. Several state and EPA investigations failed to identify VOC contamination at the surface or within ten feet of the soil surface anywhere at the Newmark Superfund Site. Consequently, direct contact with VOC's via surface soil is not a possible exposure route. Further EPA investigations examined the potential for volatile chemicals to enter residences through the soil. Direct in-home measurements confirmed EPA calculations that this also is not a possible exposure route. Exposure through untreated domestic water supply is discussed thoroughly in the Site Risk section below.

7. SUMMARY OF SITE RISKS

Baseline risk assessments are conducted at Superfund sites to fulfill one of the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP (40 CFR Part 300) requires development of a baseline risk assessment at sites listed on the National Priorities List (NPL) under CERCLA. The CERCLA process for baseline risk assessments is intended to address both human health and the environment. However, due to the nature of the contamination at the site and the highly urbanized setting of the Muscoy Plume OU, the focus of the baseline risk assessment was on human health issues rather than environmental issues.

The objective of the baseline risk assessment for the Muscoy Plume OU was to evaluate the human health and environmental risks posed by the contaminated groundwater if it were to be used as a source of drinking water without treatment. The baseline risk assessment

incorporated the water quality information generated during the RI field investigation and sampling program to estimate current and future human health and environmental risks.

The risk assessment was conducted in accordance with EPA guidance including: Guidance for Conducting Remedial Investigation and Feasibility Studies under CERCLA (USEPA, 1988), Risk Assessment Guidance for Superfund, Vol. I Health Evaluation Manual (Part A) and Vol. 2 Ecological Assessment (USEPA, 1989), The Exposure Factors Handbook (USEPA, 1989), and Risk Assessment Guidance for Superfund Human Health Risk Assessment, USEPA Region IX Recommendations (USEPA, 1989).

A risk assessment involves the qualitative and quantitative characterization of potential health effects of specific chemicals on individuals or populations. The risk assessment process comprises four basic steps: 1) hazard identification, 2) dose-response assessment, 3) exposure assessment, and 4) risk characterization. The purpose of each element is as follows:

- Hazard identification characterizes the potential threat to human health and the environment posed by the detected constituents.

- Dose response assessment critically examines the toxicological data used to determine the relationship between the experimentally administered animal dose and the predicted response (e.g., cancer incidence) in a receptor.

- Exposure assessment estimates the magnitude, frequency, and duration of human exposures to chemicals.

- Risk characterization estimates the incidence of or potential for an adverse health or environmental effect under the conditions of exposure defined in the exposure assessment.

Human Health Risk Assessment

The potential for non-carcinogenic health effects was estimated by calculating a hazard index for the sum of all the compounds of potential concern in the Muscoy plume. The health index compares the levels of contaminants in the groundwater with levels that could cause an adverse non-cancer health effect. If the total hazard index reaches 1.0 or above, there may be a concern for potential health risks. The hazard index for the Muscoy Plume OU was less than 0.5, which indicated that non-carcinogenic health effects are negligible.

The risk assessment also estimated the possibility that additional occurrences of cancer will result from exposure to contamination. The background probability of developing cancer from all causes in California is approximately one in four (or 250,000 in a million). An excess cancer risk of 1 in a million means that a person exposed to a certain level of contamination would increase the risk of developing cancer from 250,000 in a million to 250,001 in a million as a result of the exposure. EPA considers excess cancer risks greater than 100 in a million to be unacceptable.

In preparing risk assessments, EPA uses very conservative assumptions that weigh in favor of protecting public health. For example, EPA may assume that individuals consume two liters

of drinking water from wells situated within a contaminant plume every day for a 30-year period, even though typical exposure to the chemical would be far less.

EPA included two potential exposure routes (ways the contamination gets into the body) in the risk assessment:

- drinking the groundwater during residential use; and
- inhaling the chemicals in groundwater as vapors during showering.

Skin contact with contaminated water was also considered but EPA found that it did not pose a significant risk. Results of the RI indicated that direct exposure to volatile organic compounds (VOCs) from surface soil or from water 100 feet below ground was insignificant at this site (see Section 6.0 - Summary of Site Characteristics).

Chemicals of potential concern in the Muscoy Plume OU used in the risk assessment calculations included: PCE, TCE, cis-1,2-Dichloroethene (DCE), and other VOCs detected in at least one well. EPA will continue to monitor the groundwater in the Muscoy Plume OU for any changes that would affect the risk analysis.

The results of the risk assessment indicated that the current contaminant levels in the aquifer of the Muscoy Plume OU would not meet state or federal drinking water standards if this water were to be delivered directly to local residents, without being treated. However, the levels are currently below the concentrations that would pose an unacceptable risk to human health, as defined by CERCLA. If the groundwater were used as a drinking water source without treatment, the chance of developing cancer during a lifetime would increase by as much as 50 in a million. EPA is taking an action at the Muscoy Plume OU in order to meet the drinking water standards (MCLs) even though the risk levels do not exceed 100 in a million.

The baseline risk assessment for the Muscoy Plume OU is presented in the Remedial Investigation and Feasibility Study Report for the Muscoy Plume OU (December 1994).

Environmental Risk Assessment

Given the present developed condition of the site and the major exposure pathway consideration of contaminated groundwater, there was no expectation for significant impact to potential environmental receptors. Urbanization has already replaced habitat potential; therefore, no significant number of receptors appeared to be present. There appeared to be no apparent mechanism for exposure to environmental receptors from contaminated groundwater. Also, there was no indication that future site plans would reinstate habitat and thereby recreate a potential for environmental receptors in the future.

8. DESCRIPTION OF ALTERNATIVES

Development of Alternatives to Meet Project Objectives

Before developing a range of cleanup alternatives for evaluation, EPA identified the objectives of the interim cleanup for the Muscoy Plume OU. All of the alternatives were screened for: 1) effectiveness at protecting human health and the environment, 2) technical feasibility (implementability), and 3) cost. In addition, the alternatives were developed to meet the specific cleanup objectives for the Muscoy Plume OU described previously.

Based on the results of the RI, EPA identified five cleanup alternatives for addressing groundwater contamination of the Muscoy Plume OU. Detailed descriptions of these alternatives are provided in the Muscoy Plume OU RI/FS Report (December, 1994). Rather than including all potential combinations of extraction locations and amounts, the initial screening process identified the most efficient extraction scenario that would meet our objectives. The five alternatives were evaluated based on nine specific criteria: 1) Overall Protection of Human Health and the Environment, 2) Compliance with Applicable or Relevant and Appropriate Requirements (ARARs), 3) Long-term Effectiveness and Permanence, 4) Reduction of Toxicity, Mobility or Volume through Treatment, 5) Short-term Effectiveness, 6) Implementability, 7) Cost, 8) State Acceptance, and 9) Community Acceptance.

With the exception of the **Alternative 1 - No Action**, all of the alternatives involve the extraction of an estimated 6,200 gallons per minute (gpm) of groundwater near the leading edge of the plume for a period of 30 years. The actual design capacity of the extraction and treatment facilities will be determined during the Remedial Design phase based on the latest refined groundwater information and modeling. The RI/FS Report analysis indicated that the final extraction rate is expected to be within the range of 5,000 gpm to 7,000 gpm. Individual wells would pump from 800 to 2,000 gpm, the range for a typical city drinking water well.

A computer model was used to determine that these extraction rates would result in effective inhibition of plume migration and optimal contamination removal for this interim action. With the exception of **Alternative 1 - No Action**, all of the alternatives would involve the construction and operation of a VOC treatment system, construction and sampling of additional monitoring wells, and analysis of any changes in the current operations of nearby public water supply wells.

During the first three years after issuance of the ROD, the remedy would proceed to the remedial design and initial implementation stages. EPA must plan, build the equipment and test it to make sure it functions properly.

ALTERNATIVE 1: No Action

This alternative serves as a baseline to compare other alternatives. This alternative is evaluated to determine the risks that would be posed to public health and the environment if no action were taken to treat or contain the contamination. The **No Action Alternative** would involve only groundwater monitoring; no additional cleanup activities would be conducted. The cost of constructing the necessary monitoring wells and sampling them over 30 years would be approximately $2.2 million (present net worth).

ALTERNATIVE 2: Extract/Treat(Granular Activated Carbon)/Public Water Agency

Extraction

Alternative 2 involves the extraction of an estimated 6,200 gpm of contaminated groundwater placed at the leading edge of the Muscoy plume. The actual design capacity of the extraction and treatment facilities will be determined during the Remedial Design phase based on the latest refined groundwater information and modeling. The extraction wells would be located to inhibit most effectively the migration of the contaminant plume.

Treatment

The extracted groundwater would be transmitted via underground piping to a Granular Activated Carbon (GAC) treatment plant. EPA assumed that an entirely new treatment plant would be constructed near the extraction system and near a major distribution system pipeline. It may be possible to use an existing treatment plant site with construction of pipeline to the plant and from the plant to the distribution pipeline. Note that Alternative 3, involving treatment by air stripping, is considered by EPA to be equivalent to Alternative 2, and may be substituted for all or part of Alternative 2 during the design phase of the project.

Transfer of Treated Water

The treated water would meet all applicable or relevant and appropriate drinking water standards for VOCs and would be piped to a public water supply agency for distribution. Groundwater monitoring wells would be installed to evaluate the effectiveness of the remedial action. Following approximately 2 to 3 years for design and construction, this system would operate for 30 years. Operation of nearby public water supply wells are not expected to interfere with this remedy, although any significant changes in operations would be analyzed to determine the effect on this cleanup action. EPA will conduct a formal assessment of the project effectiveness every five years.

The present net worth cost of Alternative 2, including capital costs and thirty years of operation and maintenance, is estimated at $26,000,000.

ALTERNATIVE 3: Extract/Treat(Air Stripping with Emission Control)/Public Water Agency

Alternative 3 involves the same extraction system, transfer of treated water to a public water agency and monitoring design as Alternative 2. Alternative 3 differs from Alternative 2 in the treatment of the extracted groundwater to remove VOCs to meet applicable or relevant and appropriate drinking water standards for VOCs. In Alternative 3, the extracted contaminated water would be treated by air stripping with emission control to meet the South Coast Air Quality Management District's requirement for best available control technology. Currently, vapor-phase granular activated carbon meets this requirement, and EPA used this technology for cost and effectiveness analysis. New emissions control technologies developed prior to the final design could be considered if they meet the air quality requirement. Air stripping is essentially equal to GAC (Alternative 2) in effectiveness, technical feasibility and the remaining criteria.

The present net worth cost of Alternative 3, including capital costs and thirty years of operation and maintenance, is estimated at $21,500,000.

ALTERNATIVE 4: Extract/Treat (Advanced Oxidation - Peroxide/Ozone)/ Public Water Agency

Alternative 4 involves the same extraction, transfer of treated water to a public water agency and monitoring design as Alternative 2. The extracted water would be treated for VOCs using an advanced oxidation process that uses peroxide and ozone to destroy (oxidize) the contaminants (rather than transferring the contaminants to a carbon filter). The treated water would meet all applicable or relevant and appropriate drinking water standards for VOCs and would be piped to a public water supply agency. Groundwater monitoring wells would be installed to evaluate the effectiveness of the action.

The present net worth cost of Alternative 4, including capital costs and thirty years of operation and maintenance, is estimated at $32,000,000.

ALTERNATIVE 5: Extract/Treat (GAC or Air Stripping)/Return to the Aquifer via Reinjection.

Alternative 5 involves the same extraction, treatment and monitoring designs as Alternative 2 (including the option to use either GAC or air stripping to treat the extracted water for VOCs). The water would be returned to the aquifer in reinjection wells downgradient from the extraction wells. The treated water would meet state reinjection standards before being returned to the aquifer.

The present net worth cost of Alternative 5, including capital costs and thirty years of operation and maintenance, is estimated at $30,800,000.

9. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

A comparative analysis of the alternatives against the nine evaluation criteria set forth in the NCP at 40 CFR 300.430 (e)(9)(iii) is presented in this section.

No Action versus the Nine Criteria. Clearly, Alternative 1 would not be effective in the short- and long-term in protecting human health and the environment as it does not provide for removing any contaminants from the aquifer, for inhibiting further downgradient contaminant plume migration, or for reducing the toxicity, mobility and volume of contaminants through treatment. Implementing the no-action alternative would be simple and inexpensive since it involves only groundwater monitoring. As indicated by the baseline risk assessment presented in the RI Report, Alternative 1 could pose carcinogenic risk if a person were exposed to the untreated groundwater through the domestic water supply, although the risk is below the 100 in a million excess risk level (10^{-4}) which EPA considers generally unacceptable. The current contaminant level would not meet state or federal drinking water standards if this water were to be delivered directly to local residents without treatment. Loss of a valuable water resource from continued degradation of the aquifer is a major concern for the state and the public.

Overall Protection of Human Health and the Environment, Short Term Effectiveness and Long Term Effectiveness. Alternatives 2, 3, 4 and 5 have the same effectiveness in the short and long term in reducing the risk to human health and the environment by removing contaminants from the aquifer, by inhibiting further downgradient contaminant migration, and by reducing the toxicity, mobility and volume of contaminants in the aquifer.

Reduction of Toxicity, Mobility and Volume through Treatment. The VOC treatment technologies used in Alternatives 2, 3 and 5 (either air stripping with emission control (e.g., vapor-phase GAC adsorption) or liquid phase GAC adsorption) are technically feasible and effective in meeting ARARs for VOCs in the extracted and treated groundwater. Treatment of the extracted contaminated groundwater via air stripping with vapor-phase GAC adsorption or via liquid phase GAC adsorption would reduce substantially the toxicity and mobility of contaminants in the aqueous phase. The adsorption of contaminants onto the GAC would reduce the volume of contaminated media. However, a substantially larger quantity of contaminated GAC media would be generated with either air stripping with vapor-phase GAC or liquid-phase GAC systems compared to perozone oxidation (which is a destructive technology) followed by either air stripping with vapor-phase GAC adsorption or liquid-phase GAC. This contaminated GAC would require disposal or regeneration. During the design phase, an alternative emission control technology will be tested to eliminate the need for vapor-phase GAC while meeting the Best Available Control Technology requirement.

Treatment of the extracted contaminated groundwater via perozone oxidation in Alternative 4 would destroy greater than 90 percent of the VOCs, and generate a smaller quantity of contaminated GAC media compared to the conventional technologies alone. VOC treatment using perozone oxidation has only been tested and applied in pilot-scale/limited applications, and limited O&M data are available. Concern has been expressed over the day-to-day reliability of this innovative technology at large-scale application for drinking water supply treatment. Incomplete oxidation can lead to the formation of by-products such as formaldehyde which would also need to addressed. The reliability concerns for large-scale applications, coupled with the uncertainties associated with design, capital and operational costs and with the fact that a public water supply agency will be receiving the treated water, all combine to make Alternative 4 less preferable than Alternatives 2, 3 and 5 which propose using liquid phase GAC or air stripping for VOC treatment.

Compliance with ARARs. As discussed in the ARARs section (Section 10) of this ROD, since this remedial action is an interim action, there are no chemical-specific ARARs for aquifer cleanup for any of the alternatives. For Alternatives 2 through 4, the chemical-specific ARARs for the treated water from the VOC treatment plant at this site are the federal and state drinking water standards for VOCs set forth in Table 2. Alternative 5 must meet the standards set forth in Table 2 as well as state reinjection standards. Alternatives 2, 3, and 5 are expected to meet these ARARs for the treated water. There is some uncertainty regarding the ability of Alternative 4 to meet these ARARs because perozone has not been used to treat such high concentrations of VOCs at such high flow rates. Therefore, there is the potential for not meeting chemical-specific ARARs unless the air stripping or liquid-phase GAC unit following the perozone system is a redundant treatment system (which would add substantially to the cost).

Implementability. Technically and administratively, Alternatives 2, 3, and 5 could be implemented, although the cooperation of a public water supply agency would be required for implementation of Alternatives 2 and 3. The technologies considered for groundwater monitoring, extraction, and conveyance are proven and have been applied extensively. For Alternative 5, the availability of an appropriate on-site location for reinjection of extracted and treated groundwater would need to be addressed.

State and Public Acceptance. Based on comments received during the public comment period, the public generally expressed support for Alternatives 2 through 5, although reservations were expressed about alternatives 3, 4 and 5. EPA received comments from water agencies in the area specifically in support of the end use aspects of alternatives 2 and 3. Comments received during the public comment period along with EPA responses are presented in Part III of this ROD, the Responsiveness Summary. In a letter dated March 21, 1995, the State of California (Cal-EPA) concurred with EPA's selected remedy for the Muscoy Plume OU.

Cost. The estimated total present worth of Alternatives 2, 3 and 5 ranges from $21,500,000 to $30,800,000. The total present worth cost for Alternative 4 is $32,000,000. For alternatives 2, 3 and 4, some of these costs are expected to be offset by the water supply agencies which accept the treated water. These overall project costs do not take into account the value of utilizing the groundwater resource directly as opposed to recharging the water to the aquifer to be eventually pumped to the surface again prior to use (Alternative 5).

The GAC treatment system already operating at the San Bernardino Municipal Water Department's facility at 19th Street and California Avenue may be incorporated into this action and would provide significant cost savings. Construction of pipeline to a distribution system capable of accepting the full volume of treated water would be required.

Selected Remedy.

EPA's comparative analysis of the remedial alternatives against the nine evaluation criteria concluded that Alternative 2 (extraction, treatment by GAC and transfer to public water supply agency) most fully meets the nine criteria. Accordingly, EPA has selected Alternative 2 as the interim remedial action for the Muscoy Plume OU. Alternative 3, involving treatment by air stripping, is considered by EPA to be equivalent to Alternative 2, and may be substituted for all or part of Alternative 2 during the design phase of the project. In addition, EPA recognizes the need for cooperation from a public water supply agency to implement alternatives 2 or 3. Consequently, EPA selects Alternative 5 (extraction, treatment and reinjection into the aquifer) as a contingency if water supply agencies are unable to accept all of the treated water. Section 11 of the ROD provides a detailed discussion of the major components of the selected remedy.

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 (µg/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 Muscoy 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 Muscoy 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.

11. THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, EPA has determined that Alternative 2: extraction, treatment of VOCs by liquid phase GAC (or air stripping with best available control technology for emissions), and conveyance to a public water supply agency, is the most appropriate interim remedy for the Muscoy Plume OU. If the public water supply agency does not accept any or all of the treated water, then Alternative 5: extraction, treatment of VOCs, and recharge to the aquifer, will be implemented.

Alternative 2 involves groundwater extraction (pumping) of approximately 6,200 gallons per minute (gpm) near the leading edge of the plume for a period of 30 years. The actual design capacity of the extraction and treatment facilities will be determined during the Remedial Design phase based on refined groundwater information and modeling. The RI/FS Report analysis indicated that the final extraction rate is expected to be within the range of 5,000 gpm to 7,000 gpm. Individual wells would pump from 800 to 2,000 gpm, the range for a typical city drinking water well. During the remedial design phase the locations proposed for extraction wells and scenarios for rates of extraction per individual well may be selected or new ones may be selected. The exact number, location and other design specifics of new extraction wells will be determined during the remedial design phase of the project to inhibit the migration of the contaminant plume most effectively.

All the extracted contaminated groundwater shall be treated to remove VOCs by either of two proven treatment technologies: **granular activated carbon (GAC) filtration** or **air stripping**. EPA determined during the Feasibility Study (December 1994) that these treatment technologies are equally effective at removing VOCs and are similar in cost at this OU. Both technologies have been proven to be reliable in similar applications. Existing treatment facilities (e.g., the GAC treatment system at the 19th Street wellfield) may be modified and incorporated into the remedy as appropriate. The VOC treatment technology which best meets the objectives of the remedy for the Muscoy Plume OU will be determined during the remedial design phase, when more detailed information is available to assess effectiveness and cost.

The treated water exiting the treatment plant shall meet all applicable or relevant and appropriate MCLs, non-zero MCLGs and secondary drinking water standards. If air stripping treatment is selected, air emissions shall be treated using the best available control technology (e.g., vapor phase GAC or an acceptable innovative technology) to ensure that all air emissions meet ARARs.

The treated water will be piped to the public water supply agency for distribution. Construction of pipeline to a distribution system capable of accepting the full volume of treated water would be required. It may be possible to use an existing treatment plant site with construction of pipeline to the plant and from the plant to the distribution pipeline.

Groundwater monitoring wells will be installed and sampled regularly to help evaluate the effectiveness of the remedy. More specifically, groundwater monitoring will be conducted no less frequently than quarterly to obtain information needed to: 1) evaluate influent and effluent water quality, 2) determine and evaluate the capture zone of the extraction wells, 3) evaluate the vertical and lateral (including downgradient) migration of contaminants, 4) (if the contingency

alternative is implemented) to evaluate the effectiveness of the recharge well system and its impact on the remedy and 5) to monitor any other factors associated with the effectiveness of the interim remedy determined to be necessary during remedial design. Monitoring frequency may be decreased to less than quarterly if EPA determines that conditions warrant such a decrease.

EPA has selected Alternative 5 as a contingency if the public water supply agency does not accept any or all of the treated water (possibly due to water supply needs). Any remaining portion of water will be recharged into the aquifer via reinjection wells near the edge of the plume. The number, location and design of the reinjection wells will be determined during the remedial design phase to best meet the objectives of the remedy and meet applicable or relevant and appropriate requirements. With the exception of the need to meet state reinjection standards and final use of the treated water, the extraction, treatment and monitoring components of Alternative 5 are identical to Alternative 2 above.

The total duration of the Muscoy Plume OU interim remedy will be approximately 33 years, with the first three years for design and construction. EPA will review this action every five years throughout this interim remedy period and again at the conclusion of this period.

The VOC treatment plant of the Muscoy Plume OU interim remedy (whether it be Alternative 2, Alternative 5 or a combination thereof) shall be designed and operated so as to prevent the unknowing entry, and minimize the possible effect of unauthorized entry, of persons or livestock into the active portion of the facility. A perimeter fence shall be erected around the VOC treatment plant if an adequate fence or other existing security system is not already in place at the plant site. This fence should be in place prior to initiation of the remedial action and should remain in place throughout the duration of the remedy. The VOC treatment plant shall also be designed and operated so as to prevent releases of contaminated groundwater from the plant.

The selected remedy for the Muscoy Plume OU meets all of EPA's nine evaluation criteria. The selected remedy is equally effective as the other alternatives in the short-term and long term reduction of risk to human health and the environment by removing contaminants from the aquifer, by inhibiting further downgradient migration of the contaminant plume, and by reducing the toxicity, mobility and volume of contaminants in the aquifer.

The VOC treatment technologies selected (liquid phase GAC or air stripping with best available control technology for emissions) are technically feasible and proven effective at meeting ARARs for VOCs in the treated groundwater.

Alternative 2, in combination with Alternative 5, could be implemented, both technically and administratively.

In a letter dated March 21, 1995, the State of California concurred with EPA's selected remedy. EPA received several public comments during the public comment period, the majority of which generally expressed support for Alternatives 2 through 5, although reservations were expressed about alternatives 3, 4 and 5. EPA received comments from water agencies in the area specifically in support of the end use aspects of alternatives 2 and 3. These comments, along with EPA's responses are presented in Part III of this ROD, the Responsiveness Summary.

The selected remedy is protective of human health and the environment, meets ARARs, and provides beneficial uses (distribution to a public water supply agency and/or recharge) for the treated water. The selected remedy is cost-effective. The estimated cost of Alternative 2 has a total present worth of $26,000,000, which is in the middle of the range for all five alternatives. The estimated total cost of Alternative 5 is $30,800,000.

12. STATUTORY DETERMINATIONS

As required under Section 121 of CERCLA, the selected interim remedial action is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the interim remedial action, and is cost effective. The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment to reduce toxicity, mobility, and volume as a principal element.

The selected interim remedial action is protective of human health and the environment in that it removes significant VOC contaminant mass from the upper zones of the aquifer and inhibiting further downgradient and vertical migration of contaminated groundwater.

The VOC treatment technologies selected (liquid phase GAC or air stripping with best available control technology for emissions) are technically feasible and proven effective at meeting ARARs for VOCs in the treated groundwater and the air.

The selected remedy permanently and significantly reduces the toxicity, mobility and volume of hazardous substances in the aquifer as well as the extracted groundwater.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, EPA shall conduct a review, pursuant to CERCLA Section 121, 42 U.S.C. Section 9621, at least once every five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

13. DOCUMENTATION OF SIGNIFICANT CHANGES

No significant changes to EPA's preferred alternative resulted from comments received during the public comment period.

PART III. RESPONSIVENESS SUMMARY

For PUBLIC COMMENTS RECEIVED from

DECEMBER 14, 1994, through JANUARY 20, 1995

ON THE PROPOSED PLAN FOR THE

MUSCOY PLUME OPERABLE UNIT INTERIM REMEDIAL ACTION

AT THE NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE,

SAN BERNARDINO, CALIFORNIA

This section summarizes and responds to all significant comments received during the public comment period (38 days) on EPA's proposed interim cleanup plan for the Muscoy Plume Operable Unit of the Newmark Groundwater Contamination Superfund Site in San Bernardino, California. This summary is divided into two parts. Part 1 provides a summary of the major issues raised in written comments contained in three letters received by EPA during the comment period. Part 2 summarizes the questions and comments made during the public meeting on the Proposed Plan held in San Bernardino on January 10, 1995. Copies of all the written comments received by EPA are included in the Muscoy Plume OU Administrative Record, available for review at the information repositories for the Newmark Superfund Site. The transcript of the public meeting, including all the questions and comments made during the meeting, is also available at the information repositories.

1. WRITTEN COMMENTS

1) Commenter (San Bernardino Valley Water Conservation District) emphasizes that, "..it is imperative that the Muscoy plume, as well as the other contaminant plumes, be cleaned up as rapidly as possible." Commenter provides estimate of water in storage in the basin an estimate of volume contaminated.

EPA response: EPA appreciates this expression of support for the interim action at the Muscoy plume. Reaction to a hazardous chemical release must balance the need for rapid response with careful data gathering and analyses. During this project, EPA has maintained a bias toward timely action (such as the Muscoy Plume Interim Action) and will continue to seek opportunities to streamline the process.

2) Commenter recommends consideration of spreading the treated water in an existing gravel pit in the Lytle Creek area as an alternative to reinjection. Commenter notes that reinjection is a

costly alternative.

EPA response: Recharge of treated water to the aquifer will only be considered as a contingency in the event that acceptance by water supply agencies cannot be negotiated. EPA expects that these negotiations will be successful. The Feasibility Study did not identify existing gravel pits suitable for spreading (recharging) water all year round at the volumes necessary to meet the objectives of the Muscoy Plume OU.

3) Commenter (California Regional Water Quality Control Board, Santa Ana Region) expresses support for Alternatives 2 and 3 (Extraction and treatment using Granular Activated Carbon or air-stripping technology). Commenter also emphasizes the importance of protecting downgradient water supply wells.

EPA response: EPA appreciates the careful review and expression of support.

4) Commenter (West San Bernardino Valley Water District) expresses interest in accepting treated water from the cleanup project at a reasonable price if all federal and state water quality requirements are met. This letter was forwarded from the City of San Bernardino Municipal Water Department which is coordinating local water supply agency negotiations to accept treated water from the Newmark Superfund Site interim remedial actions.

EPA response: The active participation of local water supply agencies in the Muscoy Plume OU and the Newmark Superfund Site in general is respectfully acknowledged. Support of the proposed alternative by the water supply agencies of the community is important in the selection of the remedy for this Operable Unit.

2. COMMENTS FROM PUBLIC MEETING HELD JANUARY 10, 1995

Lee Brandt (written and oral comment)

5) Commenter notes that he had played around Camp Ono (potential source area) as a child and has developed serious health problems. Commenter recommends public notice be given to people who played in the area that they were exposed to carcinogens.

EPA response: This comment is about the source and does not directly address the Muscoy Plume interim action. The State of California and EPA searched extensively for surface contamination throughout the potential source area but did not detect any remaining VOCs. Since the contaminants of concern are quite volatile, it would be unusual to detect any significant surface contamination even a year or two after the release. Our analyses do not indicate any current exposure except through untreated groundwater, and the state and local water supply agencies prevent untreated contaminated water from entering the water supply system. Your suggestion about addressing past exposures has been forwarded to the Agency for Toxic Substances and Disease Registry (ATSDR). They have been requested to contact you directly.

Jeff Wright

6) Commenter objects to operation of existing air-stripping towers (at Newmark OU) without emission control systems in light of possible restrictions on backyard barbecues in the region as a result of air quality issues.

EPA response: This comment is indirectly pertinent to the Muscoy Plume OU, in that air-strippers are considered a possible treatment technology for the contaminated groundwater. EPA has committed to meeting the South Coast Air Quality Management District's emission control requirements if this technology is used. The existing air-stripping towers at the Newmark and Waterman wellfields in San Bernardino meet the applicable air quality requirements. Studies conducted by the City of San Bernardino have concluded that current emissions do not pose a health hazard. The comparison of risk from the untreated air emissions versus the risk from partially combusted charcoal from all of the backyard barbecues in San Bernardino is an issue beyond the scope of this Superfund project.

7) Commenter suggests that permitting of the Newmark air-strippers without emission control systems is a breakdown of the environmental regulatory process.

EPA response: As noted above, the existing treatment systems in San Bernardino meet the applicable air quality requirements. Studies conducted by the City of San Bernardino have concluded that current emissions do not pose a health hazard. EPA has committed to meeting the South Coast Air Quality Management District's emission control requirements if the air-stripping technology is used.

8) Commenter feels that regulators have been incapable of preventing the San Bernardino aquifer from being contaminated by two or more Superfund sites.

EPA response: Aquifers like the one beneath San Bernardino are vulnerable to releases of contaminants to the soil surface. It is important to recognize that contamination of the aquifer is believed to have originated more than 20 years ago, from sources that are not likely to reoccur given current regulation of hazardous substances.

Frank Vera

9) The commenter notes that it is misleading to have separate names for the Newmark and Muscoy Plume OUs, when the problem is actually the Camp Ono Contaminant Plume.

EPA response: Operable units are discrete actions that comprise incremental steps toward a comprehensive solution for the entire site. Despite the complexity of the Newmark Superfund Site geology and the difficulties inherent in investigating groundwater contamination 500 feet beneath an urban area, EPA was able to show that the Newmark plume and the Muscoy plume originate from the same area. It has not been established which of several potential sources are responsible for the contamination, and it would be premature to declare this the Camp Ono site.

10) The commenter feels that EPA has made their presentation as if EPA were doing the public a favor when EPA is actually required by law to address the contamination. In addition the

commenter believes that there has not been sufficient effort to uncover the real sources (Manhattan Project, Ethyl Corporation, Kaiser Steel, Culligan Zeolite).

EPA response: The record is clear that EPA is responding to the Newmark site in accordance with the requirements of the CERCLA statute and the National Contingency Plan (NCP) regulations. All the potential sources mentioned as well as many others have been considered by EPA. After analysis of the information gathered to this point, EPA has decided not to pursue the sources mentioned since the nature of chemical usage, location, time frame of operation or a combination of these factors are not consistent with the location and nature of the Newmark Superfund Site groundwater contamination. For example, the Ethyl Corporation facility was located near the leading edge of the Muscoy plume and the pattern of contamination shows that the plume originated miles to the northwest of this facility.

11) The commenter asserts that the source is the former military base (Camp Ono) and the federal government should be cleaning it up. The commenter further states that the source is actually a major military complex that wraps all around the Shandin Hills and includes a former Naval hospital northeast of the Shandin Hills.

EPA response: EPA's investigation into the source (the Source OU) is focusing on the general area of the former San Bernardino Engineering Depot (Camp Ono), although other origins cannot be ruled out. The pattern of contamination is not consistent with releases from potential sources north and east of the Shandin Hills. The pattern of contamination is also inconsistent with releases from the WWII incendiary manufacturing operation southeast of Camp Ono (often referred to as the "bomb plant").

12) The commenter feels that more emphasis must be paid to a secret pre-Manhattan (nuclear weapons) military project at the "Bomb Plant Complex".

EPA response: The San Bernardino Engineering Depot (Camp Ono) was an operation of the Corps of Engineers and the Quartermaster Corps during WWII on land leased from private parties. EPA has no credible evidence that any secret research went on there. All the wells in the area show the same low levels of naturally occurring radiation, including wells several miles upgradient of the depot and in portions of the basin hydrologically isolated from any potential influence from the depot.

13) The commenter is concerned that the groundwater had been contaminated and people were exposed to hazardous chemicals for 30 to 40 years because the bomb plant complex was kept secret.

EPA response: State and local water supply agencies responded immediately when the groundwater contamination (by VOCs) was discovered as part of a statewide Department of Health Services initiative to test groundwater for unexpected solvents. The state's investigation at that time discovered contamination in a number of other basins unrelated to military bases. See previous responses concerning past exposures (Comment #5) and evidence of military operations (Comments #9, 11 and 12).

John Stevens

14) The commenter feels that EPA has not taken radioactive contamination seriously, since the Newmark Superfund Site contamination seems like the same problem as Norton Air Force Base which does have radiation problems and chlorinated solvents together.

EPA response: (See response to Comments #11 and 12 above)

15) The commenter expresses doubt and frustration that the VOC contaminant levels reported in the EPA Remedial Investigation Report and related sampling reports are in parts per million rather than parts per billion. The commenter is concerned that the true concentrations are in parts per million and that these levels would cause problems with adequate treatment. The commenter reasons that EPA would not be proposing an action if the contaminants were really in the parts per billion since, "...then it wouldn't be a real problem."

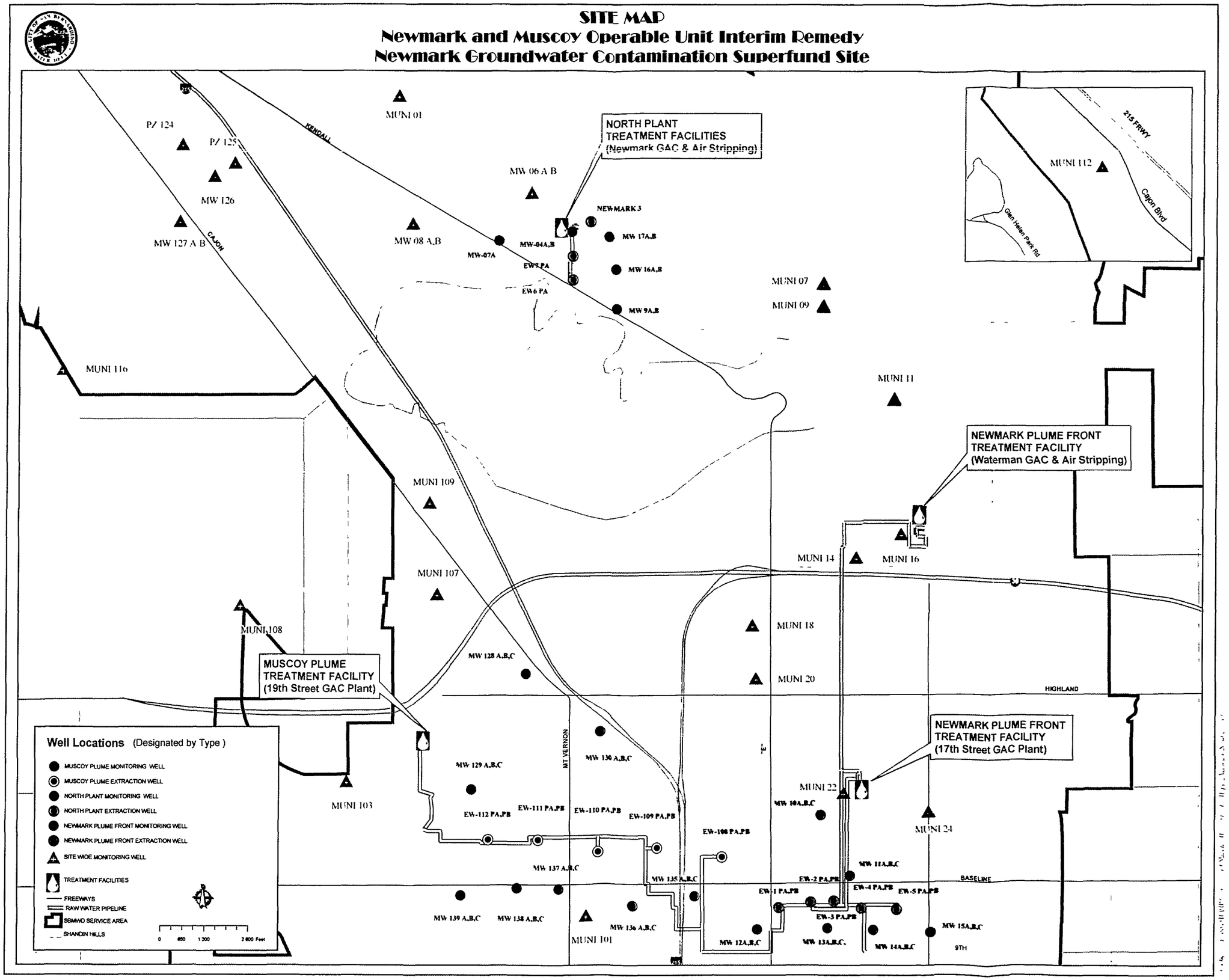
EPA response: All EPA documents show that the contaminant levels of VOCs at the Newmark Superfund Site have been in the microgram per liter (parts per billion) range. Drinking water standards for both PCE and TCE are 5 micrograms per liter (parts per billion). EPA is concerned about contamination at this level and is responding to this release in order to meet the drinking water standards.

16) The commenter insists that more effort needs to be expended on explaining what was really going on at the 2700 acre complex at Camp Ono. He suggests that uranium tetrachloride was produced at the base, and that the nearby Ethyl Corporation was involved in producing tetrachlorides and ethylene as well as deuterium needed for nuclear activities.

EPA response: EPA is conducting a thorough subsurface investigation in the Camp Ono area. EPA is continuing to work with the Department of Defense to provide a more detailed account of activities at the former depot. The history of the San Bernardino Engineering Depot is available in the Administrative Record. The Army leased 1600 acres and all leases ended by 1947. See previous responses concerning radioactivity (Comment #12) and involvement of other facilities in the area (Comment #11).

C

SITE MAP
Newmark and Muscoy Operable Unit Interim Remedy
Newmark Groundwater Contamination Superfund Site



D

Appendix D

NEWMARK AND MUSCOY OPERABLE UNITS STATEMENT OF WORK

I. General Provisions

A. Definitions: Terms used in this Statement of Work, if defined in the Consent Decree, shall have the meaning assigned to them in the Consent Decree. The "Facilities" shall mean the Newmark and Muscoy Operable Units extraction, transmission and granular activated carbon treatment systems installed or adopted as part of the Interim Remedy, and shall include the extraction wells, pipelines and appurtenances for both Operable Units, and the treatment plants described as follows: (1) for the Newmark Operable Unit: the North Plant Treatment Facilities, and the Newmark Plume Front Treatment Facilities (also referred to as the South Plant), including the Waterman and 17th Street Treatment Plant, and; (2) for the Muscoy Operable Unit: the 19th Street Treatment Plant, which, as of the date of entry of the Consent Decree, is under construction.

B. Warranty: EPA has exercised its best efforts to include in this Statement of Work all activities necessary to fulfill the Operation and Maintenance ("O&M") requirements for the Newmark and Muscoy Operable Units, and for the Site-Wide Monitoring. However, nothing in this Statement of Work or any deliverable approved by the Lead Oversight Agency or the Support Oversight Agency pursuant hereto constitutes a warranty or representation, either express or implied, by the United States or the State of California Department of Toxic Substances Control ("DTSC") that compliance with this document and/or deliverables approved

pursuant to this document will result in the achievement of the Performance Standards as defined in the Consent Decree (Section IV). Nothing in this Statement of Work or deliverables approved pursuantly hereto shall be deemed to limit EPA's rights pursuant to Paragraph 103 of Section XXI (Covenants by the United States and DTSC) of the Consent Decree.

C. Site Description: See Paragraph 4 of the Consent Decree (Site Definition).

D. Lead Oversight Agency Approval: Lead Oversight Agency approval of any submittal by the City, or any person who will perform Work on behalf of the City within the context of the Consent Decree, including but not limited to, plans, specifications, reports, and contractors, is administrative in nature and designed to allow the City to proceed. The City acknowledges and agrees that EPA's approval of deliverables does not constitute a warranty or representation, as discussed in Paragraph B above. Submittal by the City of a required document to the Oversight Agencies shall constitute notice to these agencies of the information contained in the submittal. EPA is the Lead Oversight Agency for review and approval of all initial plans and reports that establish requirements for or will govern Site activities, including the Reconstructed Newmark Groundwater Flow Model. All subsequent plans or report modifications that would change the requirements of a previously approved plan or report shall require EPA concurrence. The reconstructed groundwater model updates shall be approved by DTSC with EPA concurrence, or vice versa, depending on which Agency has the Lead Oversight responsibility at the time.

E. Reporting Period: The Reporting Period is defined in Section X, Paragraph 37 of the Consent Decree.

F. System Operation and Maintenance Requirements: The requirements for system

operation, maintenance and monitoring are to be specified in the O&M manuals for the Newmark and Muscoy OUs. These requirements shall be included in the O&M Plan to be submitted by the City pursuant to Section II.B.4 of this Statement of Work. The O&M Plan may be periodically updated by the City, as the need arises. In all cases the City shall operate consistently with the California Constitution, Article 10, and its DHS permit. Provided, however, that should the City allege that its obligations under its DHS permit or the California Constitution prevent the City from conducting the O&M otherwise in accordance with the requirements of the Consent Decree and this Statement of Work, EPA shall have the right to take over the work in accordance with Paragraph 110 of the Consent Decree.

II. Schedule

A. Dates: The schedule of deliverables for this Statement of Work is presented in Attachment 1 and shall be referred to as the Work Schedule. Delay by the Lead Oversight Agency in reviewing a deliverable shall not constitute a violation of the Consent Decree by the United States or DTSC, as the case may be. Once the City receives any required Lead Oversight Agency approval, comments, or other authorization or direction to proceed with the next item of work, the City is required to submit the specified deliverable within the time frame set forth in the work schedule, calculated starting from the date of receipt of the appropriate Lead Oversight Agency approval, comments or other authorization or direction to proceed. See Consent Decree, Section XI (EPA Approval of Plans and Other Submissions).

B. Items:

1. Designation of Project Coordinators: Unless already submitted to EPA and DTSC in writing, within 20 days of the entry of the Consent Decree, the City shall submit to EPA

and DTSC, in writing, the name, title, address and telephone number, and qualifications of its proposed Project Coordinator, which may include the General Manager or Deputy General Manager of the Water Department. See Consent Decree, Section XII (Project Coordinators).

2. Progress Reports: The City shall provide written progress reports to the Lead or Support Oversight Agency as specified in the schedule in the Consent Decree, Section X (Reporting Requirements). The City shall include in the Progress Reports any data that the City generated or acquired as required by the Consent Decree for the period between the last Progress Report and the current Progress Report, as well as any required information generated prior to the submittal of the last Progress Report, but not included in that Progress Report. These Progress Reports shall be submitted to the Lead and Support Oversight Agency as specified in accordance with Section X (Reporting Requirements), Paragraph 37 of the Consent Decree. The City shall alert the Lead Oversight Agency within the same working day or three calendar days, whichever is shorter, if evaluation of any data indicates that a potential violation of any of the performance criteria described in Section III.F has occurred.

a) Progress Reports for the Newmark and Muscoy Facilities: Beginning the month immediately following entry of the Consent Decree, the City shall submit Progress Reports for the Newmark OU Facilities. The City shall subsequently add the Muscoy OU Facilities to Progress Reports once O&M is turned over to the City. The Progress Reports shall include at a minimum all items specified in Section X (Reporting Requirements), Paragraph 37 of the Consent Decree, and:

i) A narrative describing any noteworthy accomplishments or problems encountered at the Facilities during the Reporting Period (including, but not limited to,

the implementation of process improvements; routine maintenance, maintenance days claimed and credits used (see Section III.B of this Statement of Work); and a summary of any deviations from the operational requirements of the Consent Decree, the cause of such deviations, and the steps taken to mitigate such circumstances;

ii) The System Operation Date and the current year of O&M;

iii) The quantity of water pumped by each Newmark/Muscoy extraction well;

iv) After the O&M period begins for the Muscoy OU, a compliance calculation showing that average monthly flow rates are consistent with extraction well requirements provided in Section III.B.1 and III.B.2 of this Statement of Work for the North Plant extraction well network, the Newmark Plume Front extraction well network, and Muscoy Plume extraction well network, factoring in appropriate maintenance allowances or gallonage credits as provided in Section III.B.3 of this Statement of Work and extraction well pumping limits as described in Section III.B.2 of this Statement of Work. A summary of Target Extraction Rates shall also be provided, with the dates of Lead Oversight Agency approval and rationale when the Target Extraction rates are below the Design Extraction Rates.

v) After the beginning of the Muscoy O&M, the cumulative quantity of water pumped toward extraction requirements provided in Section III.B of this Statement of Work for each year of O&M for the North Plant extraction well network, Newmark Plume Front extraction (South Plant) well network, and the Muscoy Plume extraction well network, factoring in appropriate maintenance periods or gallonage credits as provided in Section III.B.3 of this Statement of Work;

vi) The concentrations of VOCs at each extraction well and in the treatment plants' influent and effluent, including the contaminants identified in the Newmark OU and Muscoy OU RODs, as well as the Constituents of Concern ("CoCs") and the VOCs to be sampled pursuant to the State of California Department of Health Services Water Supply Permit (effective December 30, 1999) for the City of San Bernardino ("Water Supply Permit"), (listed in Attachment 9 of the Water Supply Permit);

vii) An estimate of the mass of VOCs removed for the Reporting Period and the cumulative mass of VOCs removed since the System Operation Date; and

viii) After completion of applicable QA/QC requirements, the results of any sampling, test, or data mentioned above or otherwise required by the Consent Decree or this Statement of Work. The report of these results shall be prepared and submitted by the City pursuant to Section VIII (Quality Assurance, Sampling, and Data Analysis) of the Consent Decree.

The Progress Reports for the Newmark and Muscoy Operable Units may be combined once O&M of the Muscoy Operable Unit is transferred to the City.

b) Other Reporting:

i) The Lead Oversight Agency may require the City to report verbally or in writing the requirements of Section II.B.2 of this Statement of Work more frequently than in the Progress Reports.

ii) The Lead Oversight Agency may require the City to report additional relevant information, as necessary, in the Progress Reports or separately.

iii) The City shall submit to the Lead Oversight Agency two

copies or summaries of compliance data submitted monthly or otherwise to the California Department of Health Services ("DHS").

3. **O&M Plans:** The City shall submit O&M Plan(s) for the Newmark and Muscoy Facilities pursuant to the requirements of this Statement of Work. These O&M Plans shall include all O&M activities pursuant to this Statement of Work to be performed on all portions of the Facilities to ensure that the Facilities continue to run according to specification, and where appropriate, will incorporate or refer to O&M activities already outlined in the EPA O&M document ("Draft Operations and Maintenance Manual, Newmark Operable Unit Treatment Systems"). The Newmark OU O&M plan shall be submitted in accordance with the schedule specified in Attachment 1. The Muscoy OU O&M plan shall be prepared and submitted after the Muscoy Plume extraction well network and the 19th Street Plant Facilities are declared operational and functional, in accordance with the schedule specified in Attachment 1.

a) The O&M Plans shall include detailed descriptions, including drawings, of the Facilities; manufacturer specifications for the Facilities and equipment; easily understood, stepwise standard operating procedures for the Facilities at all appropriate flow rates; startup and shutdown procedures for all Facilities; a detailed description of manual and electronic control systems; and any other elements pertaining to efficient and safe operation of the Facilities.

b) The O&M Plans shall describe in detail the routine maintenance activities to be performed on each element of the Facilities; a schedule for these routine maintenance activities; a schedule of visual inspection of the Facilities; a schedule of equipment overhauling per manufacturers' specifications; a description and schedule of cleaning and back

flushing; detailed chemical handling procedures; and any other elements pertaining to efficient and safe maintenance of the Facilities.

c) The O&M Plans for the Facilities shall incorporate by reference the City's Staffing Plan, Health and Safety Plan, Operational Sampling and Analysis Plan, Quality Assurance Project Plan, and Contingency Plan.

d) The O&M Plans for the Facilities in conjunction with the Staffing Plan shall delineate clear lines of responsibility for performing the activities referenced within the plans, especially with respect to emergency shut downs and implementation of the Contingency Plan if it becomes necessary.

e) The O&M Plans shall include a list of "trouble shooting" procedures for various operations, and identify an inventory of parts with long lead times or critical to maintain normal operations.

f) In that the Muscoy Plume extraction well network will not be on-line at the time the O&M plan for Newmark is prepared, the Muscoy O&M plan may include modifications to some operating conditions for the Newmark Plume Front and Muscoy Plume extraction well networks as a whole to reflect the design of the current system.

4. Health and Safety Plan: Unless already submitted to EPA pursuant to the Cooperative Agreement, the City shall submit Health and Safety Plans to the Lead Oversight Agency that describe the minimum health, safety, and emergency response requirements for the O&M activities at the Newmark and Muscoy Facilities, respectively. These plans shall be prepared in accordance with U.S. Occupational Health and Safety Administration ("OSHA") requirements and any other applicable requirements.

5. Operational Sampling and Analysis Plan: The City shall submit to the Lead Oversight Agency an Operational Sampling and Analysis Plan ("OSAP") for the Facilities that defines the data gathering methods to be used during O&M. The OSAP shall be designed and implemented so as to provide sufficient information to enable the Lead Oversight Agency to determine the effectiveness of the Work the City is required to perform and whether the Facilities are meeting the Performance Standards defined in Section IV of the Consent Decree. The OSAP shall include sampling methods and schedules for all VOCs required to be sampled during O&M, consistent with the Water Supply Permit, the Newmark and Muscoy OU Interim RODs and this Statement of Work. The OSAP also shall include the analytical method for the VOCs samples (Method 524.2 or equivalent) and identify the QA/QC sampling schedules.

To address the requirements of Section VIII (Quality Assurance, Sampling, and Data Analysis) of the Consent Decree, at a minimum, the OSAP shall include a description of the City's role in the implementation of the Consent Decree and its responsibilities for sampling under the Consent Decree, a description of the sampling points and who takes samples, standard operating procedures ("SOPs") for sampling, the laboratory's analytical SOPs (includes quality control and corrective actions, preservation of samples, etc.), and target detection limits versus maximum contaminant levels. The OSAP shall describe and require the development and maintenance of a database of these sampling data according to the EPA requirements outlined in the document: "Definitions for the Minimum Set of Data Elements for Groundwater Quality (EPA813B92002)."

The OSAP shall include a description of the data analysis protocol that will be used to evaluate compliance with contaminant level performance criteria and flow performance criteria

described in Section III.F.1 and III.F.2 of this Statement of Work. In that the Muscoy Plume extraction well network will not be on-line at the time the OSAP is prepared, an addendum to the OSAP may be required to modify data analysis procedures and performance criteria for evaluating flow performance consistent with the provisions in Section III.F for the Newmark Plume Front and Muscoy Plume extraction well networks as a whole.

6. Contingency Plan: The City shall submit to the Lead Oversight Agency a Contingency Plan which is written for the locally affected population in the event of an accident or emergency at the Site. The Contingency Plan shall incorporate an Air Monitoring Plan and a Spill Prevention, Control, and Countermeasures Plan. The following is a suggested and non-exclusive list of items that shall be considered for inclusion in the Contingency Plan:

a) Name of the person responsible for responding in the event of an emergency incident;

b) List of key contacts in the local community and the State and Federal agencies to be involved in the cleanup, as well as local emergency squads and hospitals with phone numbers and addresses;

c) First aid and medical information, including names of personnel trained in first aid, a clearly marked map with the location of medical facilities and all necessary emergency phone numbers for fire, rescue, and local hazardous material teams;

d) An air monitoring plan to assure that the VOC treatment system for the Facilities is meeting the substantive requirements of the South Coast Air Quality Management District ("SCAQMD"). This air monitoring plan should include an evaluation demonstrating that VOC air emissions are below the threshold such that SCAQMD monitoring would not be

required, or if and when such monitoring would be required by SCAQMD, the plan should include the trigger concentration for implementation of the air monitoring plan, and a description of air monitoring implementation which may include personnel monitoring, and on-site and/or off-site area monitoring; and

e) A Spill Prevention, Control, and Countermeasures Plan which shall specify actions to be taken in the event of spills from materials handling and/or transportation. The plan shall describe methods, means and facilities required to prevent contamination of soil, water, atmosphere, and uncontaminated structures, equipment, or material. It shall specify provisions for equipment and personnel to perform emergency measures required to contain any spillage; to remove and properly dispose of any material that becomes contaminated due to spills; and to decontaminate affected structures, equipment, or material.

7. Baseline Mitigation Plan: The City shall submit to the Lead Oversight Agency a Baseline Mitigation Plan outlining potential responses in the case that contaminant performance and/or flow performance criteria as outlined in Sections III.F.1 and III.F.2 of this Statement of Work are exceeded and trigger Non-Routine O&M measures. The Baseline Mitigation Plan will provide a starting point for preparation of a scenario-specific Mitigation Plan if at some point implementation of a mitigation plan for Non-Routine O&M measures becomes necessary. The Baseline Mitigation Plan shall be generic in content, and, for example, shall include a basic structure for a phased approach to increasing extraction rates, a description of reporting intervals and requirements, and a list of key contact personnel. The Baseline Mitigation Plan shall also include procedures for performing a cost benefit analysis of potential Non-Routine O&M operation scenarios that will be used to guide selection of the appropriate

Non-Routine O&M mitigation measure. The Baseline Mitigation Plan will include an inventory of all available treatment systems for both the Newmark and Muscoy OUs, conveyance systems, and distribution options that may be mobilized during Non-Routine O&M, and that will be considered when developing a scenario-specific mitigation plan.

8. Time Line and Schedule: Unless already submitted to EPA pursuant to the Cooperative Agreement, the City shall submit to the Lead Oversight Agency a fifty-year Time Line and Schedule for each treatment system (Newmark and Muscoy) beginning in October 1, 2000 for Newmark, and at the start of O&M for Muscoy that shall list the major milestones to be accomplished in order for the City to efficiently perform long-term O&M of the Facilities. The Time Line and Schedule shall include the items listed in the Work Schedule, and also intermediate milestone activities (such as carbon changes, or equipment change out, etc.) and any other items relevant to orderly implementation of O&M activities. The identification in the Time Line and Schedule of intermediate milestones, which are defined as those milestones not specified in the Work Schedule, is solely for planning purposes. Any failure by the City to meet the Time Line and Schedule's intermediate milestones shall not be deemed in and of itself a violation of the Consent Decree.

9. System Operation Date: The System Operation Dates for the Newmark and Muscoy Operable Units are defined as the first day each of the respective Operable Units is determined by EPA to be operational and functional as provided in the Consent Decree. In the case of the Newmark Operable Unit, the date is October 1, 2000.

C. Other Items:

1. Pre-Certification Inspection of O&M: At the end of the time period for

which the City is required to perform O&M activities at each Operable Unit pursuant to the Consent Decree, the City shall schedule and conduct a pre-certification inspection as specified by the Consent Decree. EPA shall conduct a final review of records and inspection of the Facilities. The inspection shall be a necessary part of certification of completion of the Work in accordance with Paragraph 57 of the Consent Decree.

2. O&M Completion Report: Pursuant to Paragraph 57 of the Consent Decree, the City shall submit a report for each Operable Unit certifying that all O&M activities have been fully performed. The report shall include documentation (e.g., test results) substantiating that the relevant Performance Standards have been met. The report shall be a necessary part of certification of completion of the Work in accordance with Paragraph 57 of the Consent Decree.

3. Determination of Decommissioning/Dismantling of Newmark Facilities: Reimbursement for decommissioning or dismantling of Facilities shall be governed by Section VI, Paragraph 14.a.(2) of the Consent Decree. If the City elects to decommission Facilities at the end of Work, then at least ninety (90) days before such decommissioning, the City shall submit to the Lead Oversight Agency and Support Oversight Agency a statement as to whether all or a portion of the Facilities shall be decommissioned or dismantled, together with the timetable and estimated costs for such work. If the City decides to cease production, then the City shall notify EPA and DTSC, and either Agency can initiate the process of decommissioning or dismantling. If EPA or DTSC is initiating the process, the City shall have a reasonable opportunity for review and comment.

4. Submittals: The City shall submit two (2) copies of each deliverable to the Lead Oversight Agency's Project Coordinator designated in Section XXVI (Notices and

Submissions) of the Consent Decree, one copy each to the Lead Oversight Agency's designated remedial action oversight contractor, the Support Oversight Agency, DHS, and RWQCB, and one copy of each deliverable transmittal letter to the EPA Office of Regional Counsel and to DTSC's Counsel as designated in the Consent Decree, Section XXVI (Notices and Submissions). With the consent of the receiving agency, an electronic copy of the deliverable may be substituted.

III. Operation of Newmark/Muscoy Operable Units

A. Period of Operation and Maintenance: The City shall perform O&M activities on the Facilities as required under Section VI (Performance of the Work by the City) of the Consent Decree and this Statement of Work, for the period specified under Section XIV, Paragraph 57.a of the Consent Decree. O&M for each Operable Unit shall commence on the System Operation Date for each Operable Unit.

B. Extraction Requirements:

1. Definition of Extraction Rate Terms: The "Maximum Routine Extraction Rate" requirements are defined as the maximum extraction rates at which the City will be required to operate the extraction well networks under the terms of Routine O&M. The "Design Extraction Rate" is defined as the Newmark Groundwater Flow Model-derived flow rate used as the design basis for each extraction well network. The "Target Extraction Rate" requirements are defined as the flow rates that can vary up to the Maximum Routine Extraction Rates prescribed with the intention of meeting the performance criteria established in Section III.F of this Statement of Work. Target Extraction Rates can be modified pursuant to the terms of this Statement of Work, subject to Lead Oversight Agency approval. The Maximum Routine

Extraction Rates and Target Extraction Rates will include adjustments for maintenance allowances as described in Section III.B.3 of this Statement of Work. The "Non-Routine Extraction Rates" are defined as extraction rates at which the City may be required to operate the Newmark Plume Front and/or Muscoy Plume extraction well networks that are in excess of the Maximum Routine Extraction Rates during periods of Transition Phase Operations or Non-Routine O&M operations.

2. Extraction Requirements: The design flow rates specifications for the extraction wells and treatment plants from the Newmark OU RD and the Muscoy OU RD Final Basis of Design Reports are summarized in Attachment 2.

Under certain circumstances, changes in hydrologic conditions of the pumped aquifer will result in reductions of the extraction rates for which the affected extraction well network can be safely operated. These changes in hydraulic conditions may result in declines in extraction rates for the affected extraction well network to levels below the Target Extraction Rate requirements then in force. If changing hydrologic conditions result in production from any extraction well network below the Target Extraction Rate then in force, the City shall notify the Lead Oversight Agency within one working day or three calendar days (whichever is less) from the calculation of the 3-month rolling average. The City shall submit the appropriate analysis within 30 days of reporting the three month rolling average flow rate in which such shortfall occurs to demonstrate the necessity of the change in pumping rate. If a more time consuming analysis is needed for the City to demonstrate the hydraulic changes, the City shall provide to the Lead Oversight Agency for approval a work plan and schedule for completion of this analysis within the 30 day period.

The provisions of this Statement of Work contemplate conditions in which the City may

propose to operate at extraction rates below the then in effect Target Extraction Rate (see Section III.F.2.d) while maintaining performance criteria. The City shall submit to the Lead Oversight Agency an analysis to justify the Target Extraction Rate for the extraction well network whenever it is proposed to be operated below the Design Extraction Rate and obtain approval to operate at such rate, consistent with the provisions stated in Section III.F.2.d.

a) Newmark Plume Front and Muscoy Plume Extraction Well Networks: The initial Target Extraction Rate requirements will be set at the Design Extraction Rate. The Design Extraction Rates believed by EPA to be necessary under current hydrologic conditions to meet the hydraulic and mass removal requirements of the Newmark and Muscoy RODs are 8,800 gallons per minute (gpm) for the Newmark Plume front extraction well network, and 8,900 gpm for the Muscoy Plume extraction well network. These are the Newmark Groundwater Flow Model-derived extraction rates, which EPA calculates are currently needed to inhibit migration of the contaminant plumes under the modeled conditions. These initial Target Extraction Rates may be modified by the Lead Oversight Agency or the City with Lead Oversight Agency approval, if the performance criteria are being achieved under the terms described in Section III.F.2, or if hydrologic conditions of the basin are not sustainable for such pumping rates. The total Muscoy Design Extraction Rate mentioned above may be revised downward, based upon the results of the pump tests on the Muscoy extraction wells, which are currently under construction, and the results of the performance evaluation.

The initial Target Extraction Rates, adjusted for Annual Maintenance Allowances as discussed in Section III.B.3 of the Statement of Work, are 4.182×10^9 gallons per year and 4.229×10^9 gallons per year for the Newmark Plume front extraction well network and Muscoy Plume

extraction well network, respectively.

The Maximum Routine Extraction Rates for the Newmark Plume Front extraction well network and Muscoy Plume Extraction well network are set at 100 percent of the combined effective treatment capacity for the Newmark Plume Front Treatment Facilities and the 19th Street Treatment Plant as defined in Section III.C.1 (20,016 gpm), divided equally between the two extraction well networks. Therefore, the Maximum Routine Extraction Rates for the Newmark Plume Front extraction well network and Muscoy Plume Extraction well network are 10,008 gpm and 10,008 gpm, respectively. Adjusted for Annual Maintenance Allowances as discussed in Section III.B.3, the Maximum Routine Extraction Rates are 4.756×10^9 gallons per year and 4.756×10^9 gallons per year for the Newmark Plume Front extraction well network and Muscoy Plume extraction well network, respectively. These Maximum Extraction Rates only apply to the well network. The combined effective treatment capacity of the Newmark and Muscoy plume front is 9.512×10^9 gallons per year.

Beginning with the initiation of O&M for the Muscoy OU, the City shall demonstrate compliance with the initial Target Extraction Rate requirements on each anniversary of the applicable System Operation Date, which is defined in Section II.B.9 of this Statement of Work, unless the Lead Oversight Agency, relying on the EPA-approved Reconstructed Newmark Groundwater Flow Model or upon a review and analysis of applicable groundwater level data, per the methodology established in Section III.F.2, shall approve a lesser volume as sufficient, in which case the City shall demonstrate compliance with the lesser volume requirement. For each year of operation, beginning on the System Operation Date, and ending on the day before the following anniversary of the System Operation Date, the City shall demonstrate that the

Newmark Plume Front extraction wells and the Muscoy Plume extraction wells network have extracted groundwater at an average monthly flow rate equivalent to the Target Extraction Rate adjusted for Annual Maintenance Allowances applied on a three month rolling average as defined in Section III.B.3. The target average monthly flow rate is calculated by dividing the approved annual Target Extraction Rate (including the annual maintenance allowance used by the City) by twelve. The actual average will be calculated by dividing the sum of the total flow for the most recent three months by three. The actual average monthly flow rate must meet or exceed the target average monthly flow rate to be in compliance.

b) North Plant Extraction Well Network:

The North Plant extraction well network was initially intended to be operated at the Design Extraction Rate of 3,900 gpm; however, this rate historically has not been sustainable due to the basin hydrologic conditions. Therefore, the City shall submit to the Lead Oversight Agency an analysis to justify the Target Extraction Rate for the North Plant extraction well network whenever it is proposed to be operated below the Design Extraction Rate of 3,900 gpm and obtain approval to operate at such rate, as discussed above. Annual Maintenance Allowances will be applied to the Target Extraction Rates for the North Plant extraction well network per the terms provided in Section III.B.3 of this Statement of Work.

c) Water Production In Excess of City Demand

It is expressly contemplated in this Statement of Work that the City may occasionally be required to produce water in excess of its demand. In such cases, and in order to put the excess water to beneficial use, the City may provide excess water to other public water systems in the area for augmentation of their supply or other beneficial use. For sale of water to other water or

public agencies, any proceeds will be divided in a proportionate calculation, taking into account the cost of production and delivery (to be returned to the City) and cost of treatment (to be returned to the applicable investment vehicle). Any proceeds above total costs shall be returned to the applicable investment vehicle. This calculation shall be made annually.

3. Annual Maintenance Allowance: The Annual Maintenance Allowance shall be measured in units of gallons and shall be used as a means for the City to perform a certain amount of routine maintenance on the Facilities without violating the extraction requirements. For each extraction well network this annual maintenance allowance figure shall be calculated as the volume which could be produced by each extraction well network at the applicable Target Extraction Rate described in Section III.B.2 for a period of 35 days. The Annual Maintenance Allowance will also be used as a means of measuring compliance with the limits set for Suspension of Operations (Section III.J). Notwithstanding the Annual Maintenance Allowance, the City shall operate the three extraction well networks in such a manner that the Target Extraction Rates described in Section III.B.2 are achieved, unless reduced pursuant to that Section, or unless reduced due to extraction well network outages caused by Force Majeure conditions as defined in Section XVIII of the Consent Decree. Extraction well network outages due to Force Majeure conditions do not count against the Annual Maintenance Allowance.

The Annual Maintenance Allowance shall be applied on a three month rolling monthly average so that the average flow rate across any three consecutive months must exceed 1/12 of the annual Target Extraction Rate, as defined in Section III.B.2.a and III.B.2.b of this Statement of Work, factoring in the Annual Maintenance Allowance of 35 days a year. Based on the initial Target Extraction Rates described in Section III.B.2 of this Statement of Work, the minimum

three month rolling average extraction rate shall be equal to 3.485 x 10^8 gallons per month and 3.524 x 10^8 gallons per month for the Newmark Plume Front and Muscoy Plume extraction well network, respectively, factoring in the appropriate Annual Maintenance Allowances. The minimum three month rolling average extraction rate will be adjusted if the Target Extraction Rates are modified pursuant to the provisions described in Section III.F.2 of this Statement of Work. The three month rolling average for the North Plant extraction well network will be calculated in the same manner, and if it is below the Target Extraction Rate then in force due to aquifer conditions, then justification and the appropriate analysis, or a workplan of the appropriate analysis if more time is needed, shall be provided for approval by the Lead Oversight Agency within 30 days of submission of the three month rolling average. During maintenance periods for the treatment systems, the City may divert extracted water for treatment to available City or State-constructed treatment systems as a reimbursable expense under the Escrow in order to maintain required flow rates. Non-Routine Extraction Rates prescribed through a mitigation plan as discussed in Section III.F.2.a of this Statement of Work that have been implemented shall also be adjusted to accommodate the Annual Maintenance Allowance.

C. Treatment Criteria and Requirements:

1. Treatment Capacity. The treatment capacity of the Newmark and Muscoy Facilities is the volume of water that can be effectively treated by the GAC vessels. Treatment capacities discussed below are summarized in Attachment 2. The volume that can be effectively treated by the GAC vessels is defined as 96% of the GAC vessel rating (i.e. 720 gpm for 20,000 pound carbon vessels, and 1,008 gpm for 30,000 pound carbon vessels). The 96% effective treatment capacity is based on meeting design specifications for a minimum 15-minute hydraulic

contact across the GAC vessels. Due to the degree of daily variability in vessel flow rate, a four percent buffer is required to remain in compliance with the hydraulic contact time requirement.

The total effective treatment capacity of all the treatment facilities (at 96% of the maximum = 25,056 gpm) was designed based on the initial Target Extraction Rates set forth in Section III.B.2, at approximately 16% above the initial total required Target Extraction Rates (21,600 gpm) for all the wells in the Newmark and Muscoy systems (see Attachment 2). For the Newmark Plume Front and Muscoy Plume extraction wells and corresponding treatment facilities only, the treatment capacity is about 13% above the design extraction rates. The North Plant Treatment Facilities are designed to treat a maximum of 2.395×10^9 gallons per year at 5,040 gpm (maximum plant flow) for 330 days per year, with a 35-day allowance for routine maintenance per year. The Newmark Plume Front Treatment Facilities (the South Plant, including the Waterman and the 17th Street Treatment Plants) are designed to treat 3.764×10^9 gallons per year at 7,920 gpm for 330 days per year, with the same 35-day allowance for routine maintenance per year. The Muscoy Treatment Facilities are being designed to treat 5.748×10^9 gallons per year at 12,096 gpm for 330 days per year at the 19th Street Plant. Since the extraction well capacity from the Newmark Plume Front Extraction Well network is higher than the Newmark South Plant treatment capacity, a portion of the water extracted in the Newmark Operable Unit and currently treated at the Waterman Treatment Plant will be treated at the Muscoy Treatment Facilities in the future, once this system is on line.

2. Design Criteria for Contaminant Treatment: The GAC Treatment Facilities were designed to treat PCE and TCE in the groundwater to meet current applicable drinking water standards.

3. Treatment Requirements:

a) The Facilities shall achieve the following standards during Operation and Maintenance: Groundwater shall be extracted and treated to meet the ARARs set forth in the Newmark and Muscoy OU RODs for the VOCs identified in the Newmark and Muscoy OU Interim RODs, and the Water Supply Permit. For VOCs identified in the Water Supply Permit, but not identified in the Newmark and Muscoy OU Interim RODs or the Final Design Reports (including the Final 100 Percent Design Submittal, Newmark OU Remedial Design, Newmark Groundwater Contamination Superfund Site, North Plant, and Final 100 Percent Design Submittal, Newmark OU Remedial Design, Newmark Groundwater Contamination Superfund Site, South Plant), groundwater shall be extracted and treated to meet the Water Supply Permit limits or Federal or State MCL requirements, whichever are more stringent. Method 524.2 (or equivalent) will detect additional VOCs beyond the VOCs included in the documents listed above. Any such additional VOCs detected are to be reported as per Section II.B.2.a.vi, and viii of this Statement of Work.

b) The City shall accept the treated groundwater, chlorinate and/or disinfect the treated groundwater in accordance with accepted practice, the requirements of its Water Supply Permit and of Paragraph III.J.1 of this Statement of Work, and deliver the water into the City's potable water supply system or otherwise put it to beneficial use in another agency.

D. Monitoring Requirements: The City shall monitor the effectiveness of the system through the monitoring and sampling of the existing extraction and monitoring well networks. The monitoring of the extraction and monitoring wells shall be completed in accordance with the

approved QA/QC requirements stated in Section III.E, QA/QC requirements, below.

Groundwater sampling and water level measurements will be collected in accordance with an approved OSAP to be developed by the City pursuant to Section II.B.6 of this Statement of Work and approved by the Lead Oversight Agency. The OSAP shall cover the extraction wells, the Site-Wide Monitoring, and treatment system monitoring programs as described below.

1. Extraction Wells Monitoring: In order to evaluate the performance of the Newmark Operable Unit and Muscoy Operable Unit extraction well networks, the City shall monitor the water levels and the contaminant concentrations in the following wells: i) the extraction wells (wells prefixed with EW) to evaluate mass removal and contaminant trends; ii) the down gradient monitoring wells (wells prefixed with MW) for network break through; and iii) up gradient monitoring wells (wells prefixed with MW) for early warning of contaminant spikes or changes.

a) For water level measurements, levels shall be collected on an ongoing basis with the aid of an electronic data acquisition system (data loggers), for purposes of monitoring the capture zone created by the extraction well networks. Water level measurements will be collected on a daily basis from the following wells, unless noted otherwise:

i) Newmark Plume Front (South Plant) wells:

EW1 (monthly water levels only)	PA & PB
EW2 (monthly water levels only)	PA & PB
EW3 (monthly water levels only)	PA & PB
EW4 (monthly water levels only)	PA & PB
EW5 (monthly water levels only)	PA & PB

MW 10 A & B (up gradient)

MW 11 A, B, & C (up gradient)

MW 12 A & B

MW 13 A, B, & C

MW 14 A & B

MW 15 A & B

ii) Newmark North Plant wells:

EW6 (monthly water levels only) PA

EW7 (monthly water levels only) PA

Newmark 3

MW 04 A & B

MW 07 A & B (up gradient)

MW 09 A & B (up gradient)

MW 16 A & B

MW 17 A & B

iii) Muscoy Plume Wells:

EW 108 (monthly water levels only) PA & PB

EW 109 (monthly water levels only) PA & PB

EW 110 (monthly water levels only) PA, PB, PC & PD

EW 111 (monthly water levels only) PA, PB, PC, PD & PE

EW 112 (monthly water levels only) PA & PB

MW 135 A, B, C

MW 136 A, B, C

MW 137 A, B, C

MW 138 A, B, C

MW 139 A, B, C

MW 128 A, B, C (up gradient)

MW 129 A, B, C (up gradient)

MW 130 A, B, C (up gradient)

b) The above wells are to be sampled semi-annually for VOCs only using EPA Method 524.2 (or an EPA-approved equivalent), or quarterly as the sampling schedule is modified per Section III.F.1.a of this Statement of Work. Additional analyses which may be required as part of the Water Supply Permit are not part of the requirements of this Statement of Work.

2. Site-Wide Monitoring: Site-Wide monitoring will include additional Site-Wide ground water level monitoring and sampling to aid in evaluating the combined Newmark and Muscoy Operable Units extraction network effectiveness, provide for establishing Site-Wide ground water background elevations, and evaluate Site-Wide contamination. The Site-Wide monitoring will consist of a monthly water level monitoring program and annual sampling program. The Site-Wide water level monitoring program will consist of a modification of the City of San Bernardino's existing water level monitoring program and some additional existing monitoring wells. These modifications will be determined by EPA and are anticipated to consist of minor schedule changes and a QA/QC program (to assure accuracy of water level data). The sampling program will consist of sampling and VOC analysis from the wells specified in

Sections III.D.2.b and III.D.2.c of this Statement of Work on an annual basis. If any monitoring program described in this Statement of Work (described below) is also required by the Water Supply Permit or any amendment to the Water Supply Permit, the more stringent program of the two shall be required.

a) The City will collect monthly water levels from the wells specified in Section III.D.2.b of this Statement of Work for the Newmark and Muscoy Operable Units. This data will be used in conjunction with the daily water level data (see Section III.D.1. above) to evaluate the overall aquifer response to extraction and set a baseline to compare extraction well drawdown. Additionally, the City shall sample the Site-Wide wells for VOCs using EPA Method 524.2 (or an approved equivalent) on an annual basis. This annual sampling event shall be scheduled concurrent with the corresponding semi-annual sampling event for the extraction well monitoring to assure data comparability.

b) The following wells shall be monitored and sampled (if functional at the time of Consent Decree entry):

MW 08 A & B

MW 06 A & B

MUNI 01 (Devil Canyon #1)

MUNI 07 B & C (DTSC Site #1)

MUNI 09 B & C (DTSC Site #2)

MUNI 11 A & C (DTSC Site #3)

MUNI 14 (31st Street and Mt. View)

MUNI 16 (Leroy)

MUNI 18 (27th and Acacia)

MUNI 20 (23rd Street)

MUNI 22 (16th Street)

MUNI 24 (Gilbert Street)

MUNI 112 (Cajon #3)

MUNI 116 (Muscoy Mutual #5)

MUNI 108 (Mallory)

MUNI 109 (Paperboard)

MUNI 107 (Colima) (The current well has failed and cannot be used for monitoring. EPA intends to replace the well. The replacement well will be included in the Site-wide monitoring.)

MUNI 103 (State Street)

MUNI 101 (Olive and Garner)

PZ 124

PZ 125

MW 126

MW 127 A, B

c) Additional Site-Wide data collection may be required to evaluate the integrity and effectiveness of the Interim Remedial Actions, as specified in Section III.K.2, Potential Non-Routine O&M, or in new monitoring wells to replace existing wells which might have to be retired from the monitoring program due to failure.

d) The City shall maintain the above referenced wells. The City shall

replace at its own cost any such well that fails because of the City's negligence. The City shall replace any such well that fails for other reasons, but may charge the cost against the financial limits for Non-Routine O&M

3. Treatment System Monitoring: The City shall monitor the GAC treatment system in accordance with the Water Supply Permit. If the Water Supply Permit should be modified with respect to any such sampling, the City shall continue to conduct, at a minimum, such sampling as specified in the current Water Supply Permit unless the Lead Oversight Agency approves an alternate sampling regime. Such monitoring shall include but shall not be limited to:

a) daily residual chlorine sampling;

b) weekly combined treatment plant effluent sampling and analysis by EPA Method 502.22 (or an EPA approved equivalent);

c) monthly sampling of the lead vessel effluent and analysis by EPA Method 502.2 (or an EPA approved equivalent); if breakthrough is observed from the 75% point of the Lag GAC vessel, a second sample will be collected; and

d) quarterly sampling of the combined plant influent and effluent and analysis for VOCs using EPA Method 524.2 (or an EPA approved equivalent); this sample will also be used to meet the weekly combined plant effluent requirement outlined above (III.D.3.b).

4. Treatment System Physical Inspection: The City shall conduct daily visual inspections for leakage; and monitor the system operating conditions, including volume, electronic monitoring of flow rate and pressure drop across the carbon vessels on a daily basis. Observations of, or responses to any problems that may affect the operation of the system shall be logged and summarized in the applicable O&M Progress Report.

E. QA/QC Requirement: The City shall submit to the Lead Oversight Agency a Quality Assurance/Quality Control Plan which covers all aspects of the system monitoring and data collection. This plan shall be written and implemented in accordance with the following requirements and guidance and any modifications or supplements to such guidance as may be issued by EPA:

- EPA Requirements for Quality Management Plan (QA/R-2) EPA/240/B-01/002;
- EPA Requirements for Quality Assurance Project Plans (QA/R-5) EPA/240/B-01/003;
- Guidance on Quality Assurance Project Plans (G-5) EPA/600/R-98/018;
- Guidance for Data Quality Objectives Process (G-4) EPA/600/R-96/055; and
- Definitions for the Minimum Set of Data Elements for Groundwater Quality EPA/813/B-92/002.

F. Monitoring Data Evaluation: The City shall evaluate the effectiveness of the Newmark Plume Front and Muscoy Plume extraction well networks on a regular basis, including, but not limited to, evaluating the following criteria in comparison to the results of the monitoring requirements described above in Section III.D. Before the City shall be required to conduct O&M on the Muscoy Operable Unit, EPA shall first demonstrate that the performance criteria set forth in this section, or as made less restrictive by EPA, are met while operating at Design Extraction Rates or at lesser rates determined by EPA. To the extent consistent with Section VI, Paragraph 17 of the Consent Decree, the performance criteria may be updated by the City with Lead Oversight Agency approval and EPA concurrence to be consistent with the Reconstructed Newmark Groundwater Flow Model, which will be developed pursuant to Section III.G of this Statement of Work.

1. Contaminant Level Performance Criteria:

a) Extraction Wells and Monitoring Wells Networks:

The City shall evaluate the contaminant levels present in the groundwater pursuant to the criteria described in the Newmark and Muscoy OU Interim RODs. The RODs incorporate certain state or federal drinking water standards as ARARs. Monitoring results shall be evaluated and compared to the ARARs to assist in evaluation of the designed extraction and treatment requirements and the calculation of mass removal of VOCs.

Contaminant performance shall be evaluated based on the results of periodic monitoring of select down gradient monitoring wells as prescribed in Section III.D.1.b of this Statement of Work. For the Newmark Plume Front extraction well network, contaminant performance shall be based on sampling results for down gradient monitoring well clusters MW-12, MW-13, MW-14 and MW-15. For the Muscoy Plume extraction well network, contaminant performance evaluation shall be based on sampling results for down gradient monitoring well clusters MW-135, MW-136, MW-137, MW 138 and MW-139. Any future monitoring wells installed down gradient of the Muscoy OU extraction well network will undergo a separate evaluation based on the location, hydrogeologic conditions and pre-existing contamination conditions to determine whether the subject monitoring well should be included in the contaminant performance evaluation program. The decision whether to include these new monitoring wells in the contaminant performance evaluation program shall be made by EPA after considering comments, if any, provided by the City and DTSC during a 60-day comment period.

i) For preexisting conditions in the Muscoy OU only: Due to preexisting contamination conditions occurring downgradient of the Muscoy Plume Extraction

well network, the following activities may be implemented:

(1) During the anticipated one year period between Muscoy Plume extraction well network and treatment plant startup and EPA's declaration that the Muscoy OU is operational and functional (one-year performance evaluation period), EPA will decide whether some of the Muscoy OU down gradient monitoring wells identified in Section III.F.1.a above may need to be temporarily suspended from the contaminant performance evaluation program. This decision will be made based on criteria set forth in this Paragraph. While a particular well is suspended from the contaminant performance evaluation program, the City shall collect quarterly groundwater samples to evaluate potential reinstatement of the well into the contaminant performance evaluation program. If, during the one year performance evaluation period, PCE or TCE is reported in groundwater samples collected from any of the down gradient monitoring wells in excess of 1.0 ug/L, the affected well will be suspended from the contaminant performance evaluation program. Monitoring wells suspended pursuant to this provision will be reinstated for contaminant performance evaluation at such time that contaminant levels in the monitoring well samples for the particular well are below 1.0 ug/L over eight consecutive quarters of sampling.

(2) During the first year of O&M, the City may request that EPA re-evaluate whether or not any of the downgradient Muscoy OU monitoring wells should be suspended from the contaminant performance evaluation. In making this decision, EPA will consider the criteria set forth in this Paragraph, the criteria set forth in Section III.F.1.a.ii below, and other factors relevant to a determination whether the well reflects system performance.

ii) For all other operations at all times:

Criteria for evaluating contaminant performance shall be as follows, unless otherwise specified by EPA as a result of the one-year performance evaluation period, during the first year of O&M, or a Modification to the Statement of Work:

(1) If the analysis of monitoring results indicates that the concentration of VOCs or other CoCs (as defined in the Water Supply Permit) in the monitoring wells down gradient of the Newmark Plume Front and Muscoy Plume extraction well networks identified in Section III.F.1.a of this Statement of Work are showing an increasing concentration trend, the sampling frequency may, at the discretion of the Lead Oversight Agency, be increased to quarterly during a Transition Phase period of one year in order to determine if the increased concentrations are transitory in nature or represent a more long term trend.

After one year of Transition Phase quarterly groundwater data is collected, the City shall reevaluate the concentration trend for the affected well and report the results and the City's interpretations and recommendations to the Lead Oversight Agency. Based on the results of the trend analysis, potential responses may be considered by the Lead Oversight Agency as discussed in Section III.K.2.a. (Potential Non-Routine O&M). The process for trend analysis will be established in the Operational Sampling and Analysis Plan described in Section II.B.6.

(2) If monitoring results indicate that the concentrations of VOCs or other CoCs (as defined in the Water Supply Permit) in any of the monitoring wells down gradient of the Newmark Plume Front and Muscoy Plume extraction well networks identified in Section III.F.1.a of this Statement of Work exceed one-half the State or Federal MCL (whichever is more stringent), the City shall collect a confirmation sample from the affected well within one month of validating the original laboratory data. If the confirmation

sample exceeds one-half the State or Federal MCL (whichever is more stringent), the sampling frequency for the affected well shall be increased to quarterly during a Transition Phase period of one year in order to determine if the increased concentrations are transitory in nature or represent a more long term trend.

After one year of Transition Phase quarterly groundwater data is collected, the City shall reevaluate the concentration trend for the affected well and report the results, interpretations and recommendations to the Lead Oversight Agency. Based on the results of the trend analysis, potential responses may be considered by the Lead Oversight Agency as discussed in Section III.K.2.a (Potential Non-Routine O&M). The process for trend analysis will be established in the Operational Sampling and Analysis Plan described in Section II.B.6 of SOW.

(3) If monitoring results indicate that the concentrations of VOCs or other CoCs (as defined in the Water Supply Permit) in any of the monitoring wells down gradient of the Newmark Plume Front and Muscoy Plume extraction well networks identified in Section III.F.1.a of this Statement of Work exceed the State or Federal MCL (whichever is more stringent), the City shall collect a confirmation sample from the affected well within one month of validating the original laboratory data. If the confirmation sample exceeds the State or Federal MCL (whichever is more stringent) the City will report the results, interpretations and a recommended mitigation approach to the Lead Oversight Agency. The Lead Oversight Agency will review the City's recommended mitigation approach and at its discretion approve or modify the approach within the limits of Non-Routine O&M discussed in Section III.K.3.a of this Statement of Work.

(4) If new VOCs or CoCs (other than those previously

identified in the Newmark/Muscoy OU RODs and the Water Supply Permit) above or near MCLs or other action levels are detected in the extraction or monitoring wells, the Lead Oversight Agency may proceed to modify this Statement of Work to require additional Work in accordance with Section VI, Paragraph 17 of the Consent Decree up to the financial limits provided in that Paragraph if such additional work would require Non-Routine O&M, and in accordance with other applicable provisions of the Consent Decree.

b) Treatment System: In the event that the concentration of the VOCs in the influent to the GAC vessels exceeds the design criteria described in the Final Design Reports, the City may be required to change out the carbon in the GAC vessels at more frequent intervals than indicated by the initial design.

2. Flow Performance Criteria

At the time the Muscoy Plume extraction well network and the 19th Street Treatment Plant are declared to be Operational and Functional, EPA will demonstrate that the Muscoy Plume extraction well network meets the flow performance criteria as defined in this Section while operating at or below the initial Design Extraction Rates of 8900 gpm. All the Flow Performance Criteria discussed below are based on the Design Extraction Rates established at the times the systems are determined to be Operational and Functional.

a) Routine Performance Criteria: The City shall implement the steps prescribed by this Statement of Work in order to maintain extraction flow rates such that an inward gradient is maintained across each of the Newmark Plume Front extraction well network and the Muscoy Plume extraction well network. The inward gradient must be the result of coalescing cones of depression from the Newmark Plume Front (South Plant) extraction wells

(EW-1 through EW-5), and the Muscoy Plume Front extraction wells (EW-108 through EW-112). The induced inward gradient shall be monitored through the use of ground water level data obtained from the water level monitoring program.

b) Routine Performance Criteria Analysis: Water level data will be evaluated with a combination of gridding/contouring methods to approximate the potentiometric surface of the pumped aquifer, and particle tracking to evaluate the degree of inhibition created by operating the Newmark Plume Front and Muscoy Plume extraction well networks. The potentiometric surface and/or particle tracking will be approximated based on water level data using software programs like the General Particle Tracking (GPTRAC) module of the Wellhead Protection Area (WHPA) program (developed by the EPA), Surfer® for Windows (Golden Software, Inc.), Tecplot (Amtec Engineering) or an acceptable equivalent, as approved by the Lead Oversight Agency. Particle traces will be calculated based on one of the above approximated potentiometric methodologies or acceptable equivalent, as approved by the Lead Oversight Agency. The methods for estimating the potentiometric surface and calculating particle traces will be established in the Operational Sampling and Analysis Plan discussed in Section II.B.6 of this Statement of Work and approved by the Lead Oversight Agency, and shall include input parameters to be used by one of the above software (or acceptable equivalents, as approved by LOA) and starting particle locations for the Newmark Plume Front extraction well network and Muscoy Plume extraction well network.

Maintenance of the inward gradient shall be demonstrated through the use of particle tracking simulations wherein a minimum percentage of the particles is recovered by the Newmark Plume Front and Muscoy Plume extraction well networks as a measure of a sufficient

level of inhibition of groundwater flow (inhibition criteria) across these extraction well networks. When Target Extraction Rates for the Newmark Plume Front and Muscoy Plume extraction well networks are set equivalent to or above the Design Extraction Rate, the inhibition criteria will be set at a minimum of 85 percent particle recovery for the Newmark Plume Front extraction well network and the Muscoy Plume extraction well network. When Target Extraction Rates for the Newmark Plume Front and Muscoy Plume extraction well networks are set below the Design Extraction Rate, the inhibition criteria will be set at a minimum of 95 percent particle recovery. In order to decrease the Target Extraction Rate for one or both of the extraction well networks to levels below the Design Extraction Rate, 95 percent particle capture shall have been demonstrated for the extraction well network(s) for the preceding 6-month period.

c) Process for non-routine flow performance response: In the event that evaluation of water level data indicates that flow performance criteria are not met, the following actions shall be taken:

i) Collect a second round of water levels within 7 days and perform flow performance data analysis. If the second round of water levels indicates that flow performance criteria are met, no further action is required.

ii) If the Target Extraction Rate is below the Design Extraction Rate, and the second round of water levels indicates that flow performance criteria are not met, the Target Extraction Rate will be increased to the Design Extraction Rate. In this case flow performance will be reevaluated at the Design Extraction Rate during the next monthly site-wide water level monitoring event prior to taking any additional steps.

iii) If the second round of water levels indicates that flow

performance criteria are not met and the Target Extraction Rate is equivalent to or above the Design Extraction Rate, the Lead Oversight Agency shall be notified within 7 days. The City shall attempt to reestablish flow performance by adjusting Target Extraction Rates within the established limits of the Maximum Routine Extraction Rates. In this case, flow performance will be reevaluated at the increased extraction rates during the next monthly site-wide water level monitoring event prior to taking any additional steps.

iv) If particle tracking using the site-wide water level monitoring data indicates that flow performance has not been achieved, and extraction rates have been increased to the Maximum Routine Extraction Rates, a Transition Phase will begin in which the cause of the loss of flow performance will be investigated by the City and the Baseline Mitigation Plan described in Section II.B.8 will be used by the City to prepare a scenario-specific Mitigation Plan for Non-Routine O&M operations. The Reconstructed Newmark Groundwater Flow Model may be used to evaluate mitigation alternatives.

During the Transition Phase, the City will increase extraction rates above the Maximum Routine Extraction Rate within the extraction, conveyance, treatment and distribution capabilities of the City's existing systems. During the Transition Phase, the flow performance criteria for the affected extraction well network will be adjusted. For the Newmark Plume Front extraction well network and the Muscoy Plume extraction well network, the Transition Phase particle recovery criteria will be set at 80 percent. The Transition Phase will last up to six months while the Mitigation Plan is prepared and reviewed by the Lead Oversight Agency. With the agreement of the Lead Oversight Agency, the subsequent mitigation plan may include proposed reductions in particle recovery criteria while operating under Non-Routine O&M conditions.

Once the Mitigation Plan is prepared and approved by the Lead Oversight Agency, and the six-month Transition Phase has been completed, and if performance criteria have not yet been reestablished within the Maximum Routine Extraction Rates, the Mitigation Plan for Non-Routine O&M operations shall be implemented within the limits set forth in Section III.K.2 and III.K.3 of this Statement of Work and in accordance with Section VI, Paragraph 17 of the Consent Decree, if the work involved non-routine O&M. If inhibition criteria are not being consistently maintained, the Lead Oversight Agency may require additional monitoring wells to be installed as part of Non-Routine O&M to more accurately delineate the inward gradient as discussed in Section III.K.2 and III.K.3 of this Statement of Work, subject to the financial limits in Section VI, Paragraph 17 of the Consent Decree, if the work involved non-routine O&M.

d) Criteria for flow reduction to below Design Extraction Rates: In the event that the evaluation of water level data with respect to flow performance indicates that Target Extraction Rates are in excess of levels required to maintain flow performance at 95% particle recovery and have been so over a six-month period, the City or the Lead Oversight Agency may request a reduction in Target Extraction Rates. The Lead Oversight Agency's and City's requests shall be submitted in writing, and shall include supporting data and corresponding analysis that demonstrates that the proposed Target Extraction Rates are capable of meeting flow performance criteria.

If proposed by the City, the request for reduction of Target Extraction Rates shall be submitted to the Lead Oversight Agency for review. The Lead Oversight Agency shall review the City's request for modifying Target Extraction Rates and provide comments and/or approval. The request may be submitted by the City after a period of four months of flow performance

compliance under the stipulation that Target Extraction Rate reduction will not occur prior to completion of the six-month period of flow performance compliance. The two intervening months will provide a parallel track for Lead Oversight Agency review such that the Target Extraction Rate reduction can occur at the end of the six-month period if deemed appropriate by the Lead Oversight Agency. If approved, the revised Target Extraction Rates shall be implemented.

If the Lead Oversight Agency proposes to reduce the Target Extraction Rates, the Lead Oversight Agency shall make the proposal in writing, and the City may either accept the proposed change or submit comments within thirty days of the proposal. After reviewing the City's comments and any other relevant data, the Lead Oversight Agency will issue a decision regarding imposing a reduction in Target Extraction Rates. The City's right to dispute the Lead Oversight Agency's decision shall be based on Section XIX, Paragraph 84 of the Consent Decree (Dispute Resolution).

The Target Extraction Rate for an extraction well network may not be reduced below the Design Extraction Rate under conditions in which monitoring data for any of the down gradient monitoring wells identified for contaminant performance monitoring (see Section III.F.1.a of this Statement of Work) trigger additional monitoring or mitigation (as outlined in Section III.F.1.a of this Statement of Work) for that extraction well network.

If the Target Extraction Rate for one of the extraction well networks is below the Design Extraction Rate at such time that review of contaminant performance indicates that additional monitoring under a Transition Phase or mitigation measures is required, the Target Extraction Rate for the affected extraction well network shall be promptly increased to the Design

Extraction Rate.

G. Groundwater Flow Model Reconstruction Requirements: The City will reconstruct the Newmark Groundwater Flow Model pursuant to a schedule approved by the Lead Oversight Agency. The City has already prepared and submitted a model reconstruction scoping document to EPA. The City shall finalize the scope of model reconstruction activities in a work plan to be submitted to EPA. The final model reconstruction work plan is required to include a discussion of modeling objectives, an outline of the modeling approach, a description of the key modeling tasks, a description of the types and sources of data that will be compiled, a discussion of the key elements to be considered during conceptual model development, an approach for model calibration, verification and sensitivity analysis and a description of the predictive scenarios to be considered. The model reconstruction work plan is also required to include a schedule for completion of the model reconstruction effort, the reporting requirements, and a review process for all major stakeholders. The process for major stakeholder review of the model reconstruction work plan, model reconstruction report and model update reports shall include written notice from the City to the major stakeholders and at least a 30-day comment period, and will be identified in the work plan and approved by EPA. The work plan will also include a model maintenance program. Any change to this work plan shall be approved by the Lead Oversight Agency with concurrence by EPA as stated in Section I.D. The model reconstruction work plan will be submitted in accordance with the schedule specified in Attachment 1.

The City will compile, to the extent available, the historical data listed in Section III.H.1 of this Statement of Work for the Model Domain. EPA and DTSC will assist the City to the extent possible in the collection of this data from various sources, which may include EPA and

USGS.

From the compiled data the City shall develop a conceptual model consisting of the following primary components: stratigraphic analysis; pumpage, recharge and discharge analysis, boundary condition analysis, aquifer parameter analysis and water budget analysis. Based on the conceptual model the City will construct a numerical groundwater flow model to simulate groundwater flow conditions in the vicinity of and including the Newmark OU and Muscoy OU. The model will be constructed using the USGS numerical groundwater flow model MODFLOW, or an equivalent with approval and concurrence as stated in Section I.D of this Statement of Work. The model will be calibrated under transient conditions to historical water levels gathered during data compilation. Model verification will be performed using extraction well aquifer testing data. Sensitivity analysis shall be performed to assess model uncertainties. Upon completion and approval by EPA, the model shall be referred to as the "Reconstructed Newmark Groundwater Flow Model." Once the Reconstructed Newmark Groundwater Flow Model is completed, the City shall prepare a report summarizing the components of the model reconstruction effort. The report shall include a summary of data used to reconstruct the model, a summary of results of all model runs performed during model calibration, model verification, sensitivity analysis and model simulations, and interpretations made as a result of model runs using the Reconstructed Newmark Groundwater Flow Model. This report shall be made available for review by the major stakeholders during a comment period of at least 30 days before finalization as described in the approved work plan.

H. Maintenance of Groundwater Flow Model Requirements: The City will maintain and update the Reconstructed Newmark Groundwater Flow Model pursuant to the schedule

provided in Section III.H.4 of this Statement of Work or as modified and approved by the Lead Oversight Agency. The City shall maintain the Reconstructed Newmark Groundwater Flow Model with groundwater data compilations, model calibration checks and model updates, according to the criteria and schedule developed during the City's Reconstructed Newmark Groundwater Flow Model reconstruction effort.

1. **Data compilation**: According to the schedule provided in Section III.H.4.a of this Statement of Work, new data will be compiled to support potential updates to the Reconstructed Newmark Groundwater Flow Model that will include the following:

a) Information, to the extent available to the City, using its best efforts, from new wells installed or brought on-line after the last data compilation period that are located within the model domain:

i) Well location

ii) Lithologic logs

iii) E-logs

iv) Construction details

v) Pump test results

vi) Sampling results

vii) Water level data

b) Information, to the extent available to the City, using its best efforts, for all wells in the model domain, including:

i) Production by quarters

ii) Up-dated pump test results

iii) Water level data

c) Other data, to the extent available to the City, using its best efforts, for the model domain including:

i) Volumes of artificial recharge by quarters

ii) Precipitation data

iii) Stream flow data

2. Modeling update: The City shall update the Reconstructed Newmark Groundwater Flow Model using the compiled data required in Section III.H.1, and pursuant to the schedule provided in Section III.H.4.b of this Statement of Work. Based on the compiled input data, calibration checks of the Reconstructed Newmark Groundwater Flow Model shall be performed to evaluate whether the model meets the calibration criteria established during the model reconstruction effort or subsequently revised with Lead Oversight Agency approval. If established calibration criteria are not met, the model shall be modified and recalibrated to meet the calibration criteria.

3. Reporting requirements:

a) The City shall submit reports of data compiled per Section III.H.1 according to the schedule that data compilation activities are completed. Data compilation reports shall include:

i) A listing of compiled data;

ii) Actual data records or a summary of data records; and

iii) Recommendations for performing an interim model update within the established baseline period for model updates, if deemed warranted by the City or

Lead Oversight Agency.

b) The City shall prepare reports summarizing Reconstructed Newmark Groundwater Flow Model update activities as those updates are performed. All model updates shall be made available for review by the major stakeholders during a comment period of at least 30 days prior to being finalized, and shall include the following information:

i) A description of the updates to the Reconstructed Newmark Groundwater Flow Model;

ii) Any new data added to the Reconstructed Newmark Groundwater Flow Model;

iii) Results of all Reconstructed Newmark Groundwater Flow Model runs performed including failed or incomplete runs;

iv) Results of the calibration check and/or calibration efforts; and

v) Any interpretations made as a result of Reconstructed Newmark Groundwater Flow Model runs.

All model updates will include any new and recent data that were not included in the previous model update .

4. Schedule: The schedule for performing groundwater flow model maintenance and reporting activities is as follows:

a) Compilation of the data listed in Section III.H.1 and associated reporting activities as specified in Section III.H.3 will be performed on an annual basis for the first five years after the Reconstructed Newmark Groundwater Flow Model is finalized and approved in writing by EPA. The first annual data compilation period starts on the date of

approval in writing of the Reconstructed Newmark Groundwater Flow Model. After the first five years of model maintenance, the frequency of data compilation activities will be reevaluated. The City will evaluate the frequency of data compilation events and provide recommendations for modifications, if warranted, to the Lead Oversight Agency. The Lead Oversight Agency will review the City recommendations and, if deemed appropriate, will approve these modifications in accordance with Section I.D of this Statement of Work. Subsequent modifications to the frequency of data compilation events may be requested by the City following the same process.

b) Regularly scheduled model update activities shall initially be performed every five years, with the first five-year update period commencing on the date following Lead Oversight Agency approval of the Reconstructed Newmark Groundwater Flow Model in accordance with Section I.D of this Statement of Work. More frequent model updates (interim updates) may be required based on review of data periodically compiled for the model domain. If an interim model update is performed, the next regularly scheduled update will be performed five years after completion of the interim model update. After the first 15 years of model maintenance, the baseline period of five years for performing model update activities will be reevaluated. The City will evaluate the baseline period for performing model update activities and provide recommendations for modifications, if warranted, to the Lead Oversight Agency. The Lead Oversight Agency will review the City recommendations and approve the modifications if deemed appropriate. Subsequent modifications to the model update frequency may be requested by the City following the same process.

c) Data compilation reports will be submitted within 90 days of completion of the data compilation period. Model update reports for regularly scheduled model

update events will be submitted within 90 days of the corresponding submission of the data compilation report ending the five-year model update period. Interim model update reports will be submitted within 90 days of completion of the model update event.

I. Institutional Control Requirements: The City shall submit any complete permit application package that involves new or redeveloped wells, artificial recharge or other groundwater management activities that may affect the Interim Remedies to EPA and DTSC once it is evaluated by the City. The complete permit application package shall include all documents submitted by the applicant, and the complete evaluation and proposed decision made by the City. In the event that the Reconstructed Newmark Groundwater Flow Model is run in connection with the City's evaluation of the permit application, the purpose of the runs should be detailed in the complete permit application submitted to EPA and DTSC, including all inputs and assumptions used by the applicant and by the City, if the City uses different values than the applicant in its evaluation of the application, and its decision. Any change to the model parameters by the applicant or the City, beyond adding the proposed artificial recharge and/or pumping being considered pursuant to the application, that would influence the structure of the Reconstructed Newmark Groundwater Flow Model (e.g. any recalibration, different boundary conditions, or different step sizes, etc.) shall undergo the same level of stakeholders' review as outlined in the work plan approved by the Lead Oversight Agency, and shall be fully described in the application and/or the evaluation and proposed decision by the City, as applicable. The complete application package, including the City's evaluation of the application, will be required for EPA and DTSC review and approval in accordance with the Consent Decree. The completed application and evaluation shall be submitted to EPA and DTSC for review within 90 days of

receipt of the initial permit application unless the City, DTSC, and EPA agree to a longer period.

J. Suspension of Operations: The City may suspend operation of the affected Facilities only in accordance with the following conditions:

1. If the treated water does not meet or it is anticipated that it will not meet the requirements of the Water Supply Permit after or despite the implementation of required corrective steps specified in the permit, the City shall immediately shut down the affected Facilities, unless the Lead Oversight Agency and Department of Health Services (DHS) authorize otherwise. In the case of a shutdown, the City shall verbally inform the EPA and DTSC Project Coordinators within 24 hours of the shutdown, and shall submit written notification to EPA and DTSC within 7 days of the shutdown. The written notification shall describe the cause for the shutdown, list the primary and secondary drinking water standards or Water Supply Permit levels, if any, that were exceeded or could not be met, shall describe to the extent reasonably ascertainable the cause of any actual or anticipated deviations from these standards or permit levels, and shall outline any corrective actions beyond those specified in the Water Supply Permit necessary for the affected Facilities to meet the Performance Standards as defined in Section IV of the Consent Decree. The City shall not resume operation of the affected Facilities until directed by the Lead Oversight Agency with the concurrence of the Support Oversight Agency.

2. The City may suspend operations by designating a maintenance outage (e.g., a full day or a portion thereof). Maintenance outages during the operating year shall count toward and shall not exceed the Annual Maintenance Allowance expressed in gallons based on 35 full days annually of such maintenance or the City shall be considered in violation of the Consent Decree. Extraction well network outages due to Force Majeure conditions do not count against

the Annual Maintenance Allowance. Maintenance outages may not be designated for reasons other than maintenance. The City shall notify the Lead Oversight Agency and Support Oversight Agency Project Coordinators in advance of a planned maintenance outage, and within 24 hours of any unplanned maintenance outage. Maintenance outages shall be specifically accounted for in the Progress Reports required in Section II.B.2. of this Statement of Work.

K. Non-Routine O & M: "Non-Routine O&M," as used in this Paragraph, shall include unplanned operations or O&M events that require the City to operate the Newmark and/or Muscoy extraction and treatment systems at capacities that exceed the Maximum Routine Extraction Rates established by this Statement of Work.

1. Process for Reporting Non-Routine O&M:

a) At the outset of an event that the City believes requires Non-Routine O&M, the City shall notify the Lead and Support Oversight Agencies of the event, initiate Transition Phase activities defined in this Statement of Work, and submit a scenario specific mitigation plan within six months of the onset of the event

b) The Lead Oversight Agency, with the Support Oversight Agency's concurrence, shall review and approve the mitigation plan in accordance with Section XI of the Consent Decree .

c) Not withstanding paragraphs a) and b) above, EPA and DTSC shall proceed in accordance with Section VI, Paragraph 17 of the Consent Decree (Modification of the Statement of Work), when requiring Non-Routine O&M to be performed beyond what is already provided for in the mitigation plan proposed by the City. The deadline for completion of the Non-Routine O&M may also be extended by the Lead Oversight Agency, with concurrence from

the Support Oversight Agency.

2. Potential Non-Routine O&M: Non-Routine O&M may be required when additional extraction, treatment or monitoring capacity is required to achieve and/or maintain the Performance Standards as defined in Section IV of the Consent Decree and in this Statement of Work. The Lead Oversight Agency shall determine the necessary response to situations that give rise to the need for Non-Routine O&M of this kind. In the event that the Lead Oversight Agency determines that such additional capacity is required beyond that provided for by this Statement of Work, the Lead Oversight Agency may proceed to modify this Statement of Work to require such Work in accordance with Section VI, Paragraph 17.c of the Consent Decree, or proceed otherwise in accordance with the Consent Decree. The City shall implement such responses in accordance with the requirements of the Consent Decree and this Statement of Work, and pursuant to a schedule approved by the Lead Oversight Agency. Following are non-exclusive examples of events that EPA anticipates may require Non-Routine O&M and the type of Non-Routine O&M that may be required in such events:

a) If monitoring well sampling results show a departure from contaminant performance criteria per the provisions set forth in Section III.F.1.a of this Statement of Work, installation of monitoring wells may be required by the Lead Oversight Agency up to the limitations stated in Section III.K.3.a of this Statement of Work and Section VI, Paragraph 17.c of the Consent Decree. It is anticipated that these wells would be installed between the existing monitoring well network and the extraction wells, both in the vertical and horizontal plane, to further evaluate containment and determine if there is a down gradient source.

b) If inhibition criteria (as defined in Section III.F.2) cannot be sustained

for a 180 day period, installation of monitoring well locations up to the limitations stated in Section III.K.3.a of this Statement of Work and Section VI, Paragraph 17.c of the Consent Decree may be required by the Lead Oversight Agency to more accurately delineate the inward gradient.

c) If additional pumping is determined by the Lead Oversight Agency to be necessary to achieve and/or maintain the Performance Standards as defined in Section IV of the Consent Decree, the City shall utilize the Reconstructed Newmark Groundwater Flow Model and its best professional judgment in consultation with the Lead Oversight Agency and the Support Oversight Agency to determine how much additional pumping is needed.

3. Limitations of Non-Routine O&M:

The City may be required to operate the Newmark Plume Front extraction well network and/or Muscoy Plume extraction well network above the set Maximum Routine Extraction Rates at what are termed Non-Routine Extraction Rates, and/or install and sample additional monitoring well clusters. All Non-Routine O&M activities shall be restricted to the set monetary limits specified in Section VI, Paragraph 17.c of the Consent Decree and the provisions specified as follows:

a) The aggregate cost for the Newmark Plume Front extraction well network and the Muscoy Plume Front extraction well network Non-Routine O&M shall be subject to the monetary limits specified in Section VI, Paragraph 17.c of the Consent Decree over the defined operational period for the Interim Remedy as set forth in Section VI, Paragraph 14 of the Consent Decree.

b) As provided in Paragraph 17.d of the Consent Decree, the City shall

use its best efforts to procure insurance at commercially reasonable rates to cover the costs of Non-Routine O&M. Provided, however, that the City may determine, subject to the concurrence of the Lead and Support Oversight Agencies, that such insurance is unavailable at commercially reasonable rates, not cost-effective, or that such insurance is otherwise inappropriate.

In order to make the determinations as to whether such insurance is available at commercially reasonable rates, cost-effective, and appropriate, the City shall, no later than one year before the expiration of any applicable insurance paid for from the Escrow, or after three years of O&M if no insurance is procured at the outset of this Work (and every three years thereafter if no insurance is procured at the previous three-year interval), seek the assistance of a qualified insurance broker to assist the City in assessing the applicable insurance market so that the City can determine whether such insurance is:

- available at commercially reasonable rates to cover the costs of Non-Routine O&M;
- cost-effective; and
- appropriate,

in light of the remaining time of performance, available funds, and claims experience, among other relevant factors. Provided, however, that if the City is approached by a qualified insurance industry representative during any such three-year interval, the City shall consider in good faith any reasonable proposal to provide such insurance.

Before soliciting bids, the City shall, to the extent practical, establish objective criteria to identify responsible and responsive providers of such insurance coverage. In the event that such insurance coverage is available at commercially reasonable rates, otherwise feasible, cost-effective, and appropriate for the Non-Routine O&M, the City shall select appropriate insurance

packages and coverage that provide the most cost-effective or otherwise appropriate coverage, taking into account claims experience and expertise in such environmental matters, as well as the financial stability and capacity of the insurer. The City also may elect to purchase additional coverage to cover other potential liabilities that may arise in connection with the performance of the Work.

In the event the City purchases Non-Routine O&M or other insurance related to the Work with the concurrence of the Lead and Support Oversight Agencies, the premiums shall be payable from the O&M Escrow, to the extent funding is available. The City shall not be bound to purchase such insurance if funding is unavailable from the O&M Escrow.

c) Under no circumstances shall the City be required to operate at Non-Routine Extraction Rates that cause it to violate the terms of the City's DHS Permit to Operate.

d) Accrual towards the monetary limits specified in Section VI, Paragraph 17.c of the Consent Decree, shall include all extraction, treatment, conveyance, distribution and monitoring costs that are associated with extracting water at rates above the Maximum Routine Extraction Rates, as detailed in Section III.K.3.h of this Statement of Work, beyond the City's ordinary costs for operating the remedy and producing water under the normal operating conditions.

e) Non-Routine Extraction Rates shall be reduced to the extent necessary to avoid pumping at rates that are deemed unsustainable due to aquifer conditions for the extraction wells within the Newmark and Muscoy Plume Extraction Well networks. As under routine O&M, if the City proposes to reduce the pumping rate to below the Non-Routine Extraction Rates, the City shall notify the Lead Oversight Agency and obtain approval prior to

lowering the flow rates, unless otherwise provided in the approved Mitigation Plan.

f) Under Non-Routine O&M conditions, the City shall only be required to extract groundwater at rates within the capacity of the City and/or State treatment systems or other treatment system facilities installed in the future during Non-Routine O&M operations or to increase the City's water supply capacity. Additional treatment capacity may be added per the terms and schedule detailed in an approved mitigation plan within the financial limits established in Section III.K.3.a of this Statement of Work.

g) When operating at Non-Routine Extraction Rates, the following additional cost components shall be counted towards the financial limits established in Section VI, Paragraph 17 of the Consent Decree:

i) Additional capital and monitoring costs associated with increasing the capacity of existing extraction wells or monitoring wells, or installing new ones, and increasing treatment capacity, conveyance capacity, and distribution capacity, when required under an approved mitigation plan.

ii) Increased Pumping Elevation Costs and Excessive Pipeline Headloss Costs - The City will demonstrate in the mitigation plan through a cost benefit analysis the most cost effective way to evaluate the above costs. In the case that water needs to be moved to a higher elevation, increased pumping elevation costs and excessive pipeline headloss costs as defined below are covered in the financial limits established above. Increased Pumping Elevation Costs are the energy costs for moving the increment of water extracted above the Maximum Routine Extraction Rate to higher elevation portions of the City for distribution, when necessary. The Excessive Pipeline Head Loss Costs are the incremental energy costs to convey

water through the raw water pipeline to the treatment plants at the increased head loss values over the head losses encountered while operating at Maximum Routine Extraction Rates. The methodology for evaluating these costs will be established in the Operational Sampling and Analysis Plan, subject to EPA review and approval.

iii) Water Production Cost Not Covered By a Sale. In the case when the increment of water produced above the Maximum Routine Extraction Rate cannot be used by the City and is therefore sold to another water agency at a loss, the difference between the sale price and the City's current nominal cost to produce that increment of water will be applied against the financial limits specified in Section VI, Paragraph 17.c of the Consent Decree. If the City subsequently recoups such loss, the City shall reimburse the applicable financial account. In the case when the increment of water produced over the Maximum Routine Extraction Rate can not be sold and is discharged to a river or stream for a beneficial use that is not reimbursable, the City's current nominal cost to produce that increment of water will be applied against the financial limits specified in Section VI, Paragraph 17.c of the Consent Decree.

iv) Replacement of Water Exported Out of the Basin. A condition may occur in which the City and neighboring water agencies within the San Bernardino Basin Area ("Basin") have insufficient demand to utilize all of the water extracted under Non-Routine O&M conditions. Therefore, the only alternative may be to export excess water out of the Basin to other municipalities or export excess water out of the Basin through a river or stream for potential beneficial use outside the Basin. If export of water out of the Basin is unavoidable during Non-Routine O&M operations, the City shall comply with the terms of the Western

Judgment. If water is required to be imported to satisfy the Western Judgment, the cost of the replacement water will be applied against the financial limits specified in Section VI, Paragraph 17.c of the Consent Decree. The costs will be based on the actual rates paid by the City at the time of the purchase of the replacement water.

h) If financial limits for Non-Routine O&M as specified in Section VI, Paragraph 17.c of the Consent Decree have been reached, the City is not required by this Statement of Work to operate above the Maximum Routine Extraction Rates or to make additional capital expenditures related to Non-Routine O&M pursuant to Section VI, Paragraph 17 of the Consent Decree or Section III.K of the Statement of Work.

4. Implementation of Non-Routine O&M

a) The City shall prepare a Baseline Mitigation Plan for Non-Routine O&M according to Section II.B.8 of this Statement of Work.

b) For each Non-Routine O&M event, the City shall adapt the Baseline Mitigation Plan to the specific conditions of that event, and develop a scenario-specific Mitigation Plan. This scenario-specific plan will take into account all existing conditions at the time, and propose a solution that is supported by a Cost Benefit Analysis, considering all existing conditions. The proposed solution shall include all relevant operating conditions, and the projected length and estimated cost of the Non-Routine O&M operation. Preparation of the scenario-specific Mitigation Plan should begin at the onset of the Transition Phase, and be submitted to the Lead Oversight Agency for review within six months of the onset of the event. Implementation of the scenario-specific Mitigation Plan shall begin immediately upon approval of the Lead Oversight Agency.

ATTACHMENT 1
San Bernardino Municipal Water Department Schedule

	Due Date or Date Completed
OPERATION AND MAINTENANCE	
A. Submit Staffing Plan	90 days*
B. Submit Time Line and Schedule	90 days*

* After consent decree is entered.

DELIVERABLES

Funds expended by the City to prepare deliverables in advance of the Consent Decree will be refunded to the City through the escrow account once the Consent Decree is entered.

QA/QC Plan	180 days from receipt of existing final EPA QA/QC document or 90 days after the CD is entered, whichever is earlier
Operational Sampling and Analysis Plan	180 days from receipt of existing final EPA QA/QC document or 90 days after the CD is entered, whichever is later
Health and Safety Plan	180 days from receipt of existing final HSP document or 90 days after the CD is entered, whichever is earlier
Baseline Mitigation Plan	180 days after the CD is entered for Newmark; Addendum180 days after Muscoy is declared operational and functional
O&M Plans	Newmark OU: 180 days from receipt of final EPA O&M Manual or 90 days after the CD is entered, whichever is later Muscoy OU: 180 days from receipt of final EPA O&M Manual or 90 days after the Muscoy Plume Front extraction well network becomes operational and functional, whichever is later

Groundwater Flow Model Reconstruction	90 days after the CD is entered
Water Level Data	Quarterly report, 30 days after the end of the sampling event
Plant/extraction well flows	Monthly report, 30 days after the end of the sampling event
Site wide monitoring data	Semi annually, 30 days after the receipt of validated laboratory data
Groundwater flow modeling reports	Data compilation report: Annual, 90 days after the end of the data compilation period. Such data compilation efforts in support of reconstructing the model may commence after October 1, 2002. Model Update Reports: Every five years, 90 days after the last data compilation report of the five-year period or interim period.
Notification of system upset/failure	Immediately. Within the same working day or 3 calendar days of upset or failure at the latest, whichever is shorter.
O&M Progress Reports	Monthly for the first two years after the CD is entered, 45 days after the end of the month Quarterly for the following 5 years, 45 days after the end of the quarter. Semi-Annually thereafter; 45 days after the end of the semi-annual period. Annually upon Lead Oversight approval; 45 days after the end of the semi-annual period.
Five-year Review Report	Every five years, from OU operational and functional date to be established by the EPA.

ATTACHMENT 2
Design Specifications for Extraction/Treatment Systems and Extraction Rate Requirements

Extraction Well Design Flow Rate Specifications[1]

Extraction Wells/Extraction Terminology	Newmark OU Extraction Rates (gpm)			Muscoy Plume Extraction Rates (gpm)
	North Plant Extraction Wells	Newmark Plume Front Extraction Wells		
	North Plant Treatment Facilities	Waterman Treatment Plant[2]	17th Street Treatment Plant	19th Street Treatment Plant
EW -1		1,700		
EW -2		1,700		
EW -3			2,000	
EW -4		1,700		
EW -5		1,700		
EW -6	1,000			
EW -7	1,300			
Newmark -3	1,600			
EW -108				1,300
EW -109				1,300
EW -110				2,500
EW -111				2,500
EW -112				1,300
Total Extraction Rates	3,900	6,800	2,000	8,900
		8,800		
		17,700		
	21,600			
Total Extraction Rates With Maintenance Allowance (gpy assuming 330 days of operation)	1.853E+09	3.231E+09	9.504E+08	4.229E+09
		4.182E+09		
		8.411E+09		
	1.026E+10			

Document Number: 532407 05/11/04.

Extraction Rate Requirements			
Design Extraction Rate (gpm)	3,900	8,800	8,900
Design Extraction Rates With Maintenance Allowance (gpy assuming 330 days of operation)	1.853E+09	4.182E+09	4.229E+09
Target Extraction Rate	variable	variable	variable
Maximum Routine Extraction Rate	NA	10,008	10,008
Maximum Routine Extraction Rates With Maintenance Allowance (gpy assuming 330 days of operation)	NA	4.756E+09	4.756E+09
Non-Routine Extraction Rates (gpm)	NA	>10,008	>10,008
Non-Routine Extraction Rates With Maintenance Allowance (gpy assuming 330 days of operation)	NA	>4.756E+09	>4.756E+09

Treatment Plant Design Specifications				
Component	**Newmark OU Treatment Facilities (gpm)**			**Muscoy OU Treatment Facilities (gpm)**
	North Plant Treatment Facilities	**Newmark Plume Front Treatment Facilities**		
		Waterman Treatment Plant[2]	**17th Street Treatment Plant**	**19th Street Treatment Plant**
Size of GAC Vessels (lbs of carbon)	20,000	20,000	20,000	30,000
Number of Pairs	7	8	3	12

LPGAC Design Flow Rate Per Pair[3] (gpm)	696	637	650	972
Total Design Plant Flow Rate (gpm)	4,872	5,096	1,950	11,664
Maximum Flow Per Vessel	750	750	750	1,050
Maximum Flow Per Plant	5,250	6,000	2,250	12,600
Effective Capacity Per Vessel (96% of maximum in gpm)	720	720	720	1,008
Effective Capacity (96% of maximum in gpm)	5,040	5,760	2,160	12,096
		7,920		
	25,056			
Effective Capacity (96% of maximum in gpy)	2.395E+09	2.737E+09	1.026E+09	5.748E+09
		3.764E+09		
	1.191E+10			
Percent Additional Effective Capacity Over Design Extraction Rate	29%	13%		
	16%			

Notes:
LPGAC = Liquid phase granular activated carbon
Units = Gallons Per Minute (gpm) or Gallons Per Year assuming 330 days (gpy)
(1) - Extraction well design specification flow rates are based on the Newmark Groundwater Model prepared by EPA
(2) - A portion of the water extracted from EW-1, EW-2, EW-4 and EW-5 will be conveyed to the 19th Street Plant to remain within effective plant capacities at Design Extraction Rates
(3) - Based on design rates presented in the 100% Design Report for each treatment facility
NA - Not applicable

E

Facility Table - TREATMENT CAPITAL COSTS

SBMWD Confidential and Privileged

New Treatment Plants and Transmission Lines

Plant Name	Capacity MGD	Vessel * Needed		
11th and Acacia Plant	7.5	10	Acacia Raw Water	24" DIP from Mt. View and 11th across to 11th and Acacia 2630' X $111/ft
			Acacia Treated Water	24" DIP from 11th and Acacia down to 10th & "H" Street 2430' X $111/ft
27th and Acacia Plant:	6.8	10	27th Raw Water	16" DIP from 23rd and E up to 27th and Acacia 1900' X $96/ft
Hallmark Plant	10	20	2000' Raw Waterline	2000' X $111/ft
14th & Mt. View Plant	10	20	2000' Raw Waterline	2000' X $111/ft
Scott Lab Plant	10	20	2000' Raw Waterline	2000' X $111/ft

F

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

Marie Rongone, Esq.
Assistant Regional Counsel
Office of the Regional Counsel
United States Environmental Protection Agency
Region 9, ORC-3
75 Hawthorne Street
San Francisco, CA 94105-3901

Space Above This Line For Recorder's Use Only

DEED OF EASEMENT

THE CITY OF SAN BERNARDINO, a municipal corporation, ("Grantor") hereby GRANTS to the the STATE OF CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL ("DTSC"), a government agency, (referred to as "Grantee"), an easement on properties located in the City of San Bernardino, County of San Bernardino, State of California, which are listed on the attached Exhibit "1", for which full legal descriptions are attached hereto as Exhibits "___" through "___" (the "properties"), all of which are made a part hereof and are incorporated herein by this reference.

This easement is temporary, runs with the land, and is granted for the sole purpose of providing Grantee with the right of ingress and egress, at all reasonable times, to the properties for the purpose of conducting activities relating to reducing and inhibiting the spread of groundwater contamination within the City of San Bernardino (the "work"), and assuring compliance with the Consent Decree dated _____, ("Consent Decree") executed in connection with the resolution of United States District Court, Central District, Civil Action Nos. CV 96-8867(MRP) and CV 96-5205(MRP), and is incorporated herein by this reference.

This easement becomes effective upon recordation of this document, and terminates upon the earlier of the completion of the remedial work specified in the Consent Decree or January 1, 2053, whichever first occurs. Upon the termination date DTSC, or its successor in interest, and as a condition of recordation of this document, shall execute all appropriate documents in recordable form necessary to terminate any interest of record created by this document, and to clear title of any encumbrance caused by the recordation of this document.

This easement is in gross and is personal to the Grantee. This easement is non-exclusive, and Grantor retains the right to make any use of the property, including the right to grant concurrent easements to third parties, that does not interfere unreasonably with Grantee's use of the easement. This easement may not be assigned without the prior written consent of the Grantor. This easement will continue only as long as it is used for the purposes described above, and will terminate as soon as the Grantor has received written notice that the work has been completed or otherwise as set forth in the Consent Decree.

Executed on _____, 2004.

GRANTOR
THE CITY OF SAN BERNARDINO

By:_____

Its:_____

STATE OF _____)
)
COUNTY OF _____)

On _____, 2004, before me, the undersigned, a Notary Public in and for said County and State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

_____
Notary Public

LEGAL DESCRIPTION

The East 137 feet of the North 80 feet of the North 163 feet of the West 279.5 feet of Lot 2, Block 75 of the NINE ACRE SURVEY OF THE RANCHO SAN BERNARDINO, as per plat thereof recorded in Book 7 of Maps, page 2, in the office of the County Recorder of said County, lying West of Stoddard Street (Stoddard Avenue) as conveyed to the City of San Bernardino by Deed recorded October 22, 1909, in Book 445 of Deeds, page 1.

APN 140-051-42

LEGAL DESCRIPTION

ALL THAT PORTION OF LOT 4, BLOCK 75, NINE ACRE SURVEY OF THE RANCHO SAN BERNARDINO, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE(S) 2 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING 30.00 FEET NORTH AND 137.50 FEET WEST OF THE SOUTHEAST CORNER OF SAID LOT 4, SAID POINT BEING ON THE NORTH RIGHT-OF-WAY LINE OF ELEVENTH STREET BEING 60 FEET WIDE;

THENCE WEST 46.50 FEET, ALONG THE NORTH RIGHT-OF-WAY LINE OF ELEVENTH STREET, TO THE EAST LINE OF PROPERTY CONVEYED TO ELIZABETH HOOPER SWANSON, BY DEED RECORDED JANUARY 20, 1920 AND RECORDED IN BOOK 668, PAGE(S) 270, OF DEEDS;

THENCE NORTH 137.50 FEET;

THENCE EAST 46.50 FEET;

THENCE SOUTH 39.50 FEET;

THENCE EAST 7.00 FEET;

THENCE SOUTH 98.00 FEET, MORE OR LESS, TO THE NORTH RIGHT-OF-WAY LINE OF ELEVENTH STREET;

THENCE WEST 7.00 FEET, MORE OR LESS, TO THE POINT OF BEGINNING;

CONTAINING APPROXIMATELY 7,080 SQUARE FEET OR 0.16 ACRES.

APN 140-064-24

LEGAL DESCRIPTION

THE REAL PROPERTY IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS LOT 34, NEFF, HAM AND NEFF SUBDIVISION, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 16, PAGE 25 OF MAPS, RECORDS OF SAID COUNTY.

APN 140-072-12

LEGAL DESCRIPTION

THE NORTH 58.00 FEET OF LOT 1, BLOCK 3, HART AND MARSHALL SUBDIVISION, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 7 OF MAPS, PAGE 48, RECORDS OF SAID COUNTY.

APN 140-103-22

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SAN BERNARDINO, AND IS DESCRIBED AS FOLLOWS:

LOT(S) 2, BLOCK M, BUNGALOW ADDITION NO. 2, AS SHOWN BY MAP ON FILE IN BOOK 17 PAGE(S) 6, OF MAPS, RECORDS OF SAN BERNARDINO COUNTY, CALIFORNIA.

TOGETHER WITH THE NORTH HALF OF THAT CERTAIN ALLEY ADJOINING SAID LAND ON THE SOUTH AS SAID ALLEY WAS VACATED BY RESOLUTION NO. 8256 OF THE MAYOR AND COMMON COUNCIL OF THE CITY OF SAN BERNARDINO, A CERTIFIED COPY OF WHICH WAS RECORDED JULY 25, 1966 IN BOOK 6668 PAGE 256 OF OFFICIAL RECORDS.

APN 140-111-19

LEGAL DESCRIPTION

THAT PORTION OF THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE & MERIDIAN, IN THE RANCHO MUSCUPIABE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE WEST LINE OF SAID SECTION 16 WITH THE NORTHERLY LINE OF KENDALL DRIVE, 80 FEET WIDE; THENCE NORTH 00°22'00" WEST ALONG SAID WEST LINE 100.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 89°38'00" EAST 126.89 FEET TO A POINT WHICH IS 150.00 FEET NORTHEASTERLY AND MEASURED AT RIGHT ANGLES FROM THE NORTHERLY LINE OF SAID KENDALL DRIVE; THENCE NORTH 60°24'40" WEST PARALLEL TO SAID KENDALL DRIVE 146.45 FEET TO A POIINT ON SAID SECTION LINE; THENCE SOUTH 00°22'00" WEST ALONG SAID SECTION LINE 73.13 FEET TO THE TRUE POINT OF BEGINNING.

APN 151-221-18

EASEMENT

THAT PORTION OF THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE & MERIDIAN, IN THE RANCHO MUSCUPIABE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE WEST LINE OF SAID SECTION 16 WITH THE NORTHERLY LINE OF KENDALL DRIVE, 80 FEET WIDE; THENCE NORTH 00°22'00" WEST ALONG SAID WEST LINE 173.13 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 60°24'40" WEST 46.17 FEET TO THE EAST LINE OF WESTERN AVENUE, 40.00 FEET WIDE; THENCE SOUTH 00°22'00" EAST 23.08 FEET ALONG SAID EAST LINE; THENCE SOUTH 60°24'40" EAST 46.17 FEET; THENCE NORTH 00°22'00" WEST 23.08 FEET TO THE TRUE POINT OF BEGINNING.

APN 266-131-17 (Portion)

LEGAL DESCRIPTION

PARCEL A:

THAT PORTION OF THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE & MERIDIAN, IN THE RANCHO MUSCUPIABE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WEST LINE OF SAID SECTION 16, SAID POINT BEING NORTH 00°22'00" WEST 762.00 FEET FROM THE INTERSECTION OF SAID LINE WITH THE NORTHERLY LINE OF KENDALL DRIVE, 80 FEET WIDE; THENCE N89°39'34" EAST 60.00 FEET; THENCE NORTH 00°22'00" WEST 60.00 FEET; THENCE SOUTH 89°39'34" WEST 60.00 FEET TO THE WEST LINE OF SAID SECTION 16; THENCE SOUTH 00°22'00" EAST ALONG SAID LINE 60.00 FEET TO THE POINT OF BEGINNING.

PARCEL B:

AN EASEMENT FOR THE BENEFIT OF THE GRANTEE HEREIN, THEIR SUCCESSORS AND ASSIGNS, FOR THE PURPOSES OF INGRESS, EGRESS AND PIPELINES OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY:

THAT PORTION OF THE WEST ONE-HALF OF THE SOUTHWEST ONE-QUARTER OF SECTION 16, TOWNSHIP 1 NORTH, RANGE 4 WEST, SAN BERNARDINO BASE & MERIDIAN, IN THE RANCHO MUSCUPIABE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

THE WESTERLY 20.00 FEET OF THE NORTHERLY 490.35 FEET; EXCEPTING THEREFROM THE NORTHERLY 30.00 FEET LYING WITHIN 42ND STREET.

APN 151-221-14
APN 151-221-15 (Portion) (Easement)

LEGAL DESCRIPTION

PARCEL 3:

LOT 133, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 151-231-03

LEGAL DESCRIPTION

PARCEL 3:

LOT 134, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 151-231-04

LEGAL DESCRIPTION

PARCEL 3:

LOT 135, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 0151-231-05

LEGAL DESCRIPTION

PARCEL 3:

LOT 126, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 0151-231-06

LEGAL DESCRIPTION

PARCEL 3:

LOT 127, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 151-231-07

LEGAL DESCRIPTION

PARCEL 3:

LOT "A" OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 151-231-08

LEGAL DESCRIPTION

PARCEL 3:

LOT 130, OF TRACT NO. 1748, ARROWHEAD SUBURBAN FARMS, TRACT "E", IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 59, RECORDS OF SAID COUNTY.

APN 151-231-11

LEGAL DESCRIPTION

LOT 11, BLOCK 3, TRACT #1809, GARDEN ESTATES UNIT #2, AS PER PLAT RECORDED IN BOOK 26 OF MAPS, PAGE 22, RECORDS OF SAID COUNTY.

APN 153-131-22

LEGAL DESCRIPTION

LOT 12, BLOCK 3, TRACT #1809, GARDEN ESTATES UNIT #2, AS PER PLAT RECORDED IN BOOK 26 OF MAPS, PAGE 22, RECORDS OF SAID COUNTY.

APN 153-131-23

LEGAL DESCRIPTION

ALL THAT PORTION OF THE EAST ½ OF LOT 5, BLOCK 36, RANCHO SAN BERNARDINO, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 7 OF MAPS, PAGE 2, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE EAST LINE OF SAID LOT 30 FEET NORTH OF THE SOUTHEAST CORNER THEREOF; THENCE NORTH ALONG THE EAST LINE OF SAID LOT, 68.54 FEET, MORE OR LESS, TO A POINT OF 250 FEET SOUTH OF THE NORTHEAST CORNER OF SAID LOT; THENCE WEST AND PARALLAL WITH THE NORTH LINE OF SAID LOT, 150 FEET; THENCE SOUTH 67.53 FEET, MORE OR LESS, TO A POINT 30 FEET NORTH OF THE SOUTH LINE OF SAID LOT, SAID POINT BEING IN THE NORTH LINE OF THIRTEENTH STREET; THENCE EAST ALONG THE NORTH LINE OF THIRTEENTH STREET 150 FEET TO THE POINT OF BEGINNING.

APN 145-193-13

LEGAL DESCRIPTION

LOT 19, BLOCK A, CENTRAL HOME TRACT, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 4, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN 144-221-28

LEGAL DESCRIPTION

A PORTION OF LOT 5, BLOCK 53 OF RANCHO SAN BERNARDINO, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 7 OF MAPS, PAGE(S) 2, RECORDS OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THAT CERTAIN PROPERTY CONVEYED TO ROSARIO M. AND LOUISA D. SERMENO, HUSBAND AND WIFE, RECORDED IN BOOK 6454, PAGE 162, OFFICIAL RECORDS; THENCE NORTHERLY ALONG THE EAST LINE OF GARNER STREET, FORMERLY ST. ELMO STREET, 87.75 FEET; THENCE EAST 181.00 FEET; THENCE SOUTH 54.25 FEET; THENCE WEST 11.00 FEET; THENCE SOUTH 33.50 FEET; THENCE WEST 170.00 FEET ALONG THE NORTH LINE OF SAID SERMENO PROPERTY TO THE POINT OF BEGINNING.

APN 144-201-50

LEGAL DESCRIPTION

LOT 13, TRACT 2934, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA AS PER PLAT RECORDED IN BOOK 45 OF MAPS, PAGE(S) 90, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN 143-144-12

LEGAL DESCRIPTION

LOT 20 OF TRACT 3538, IN THE CITY OF SAN BERNARDINO, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA AS PER PLAT RECORDED IN BOOK 46 OF MAPS, PAGE 56, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN 143-132-20

LEGAL DESCRIPTION

LOT 1, BLOCK "I", HOME GARDENS SUBDIVISION, AS PER PLAT RECORDED IN BOOK 21 OF MAPS, PAGE 53, RECORDS OF SAID COUNTY.

APN 146-104-10

LEGAL DESCRIPTION

LOT 2, BLOCK "T", HOME GARDENS SUBDIVISION, AS PER PLAT RECORDED IN BOOK 21 OF MAPS, PAGE 53, RECORDS OF SAID COUNTY.

APN 146-104-11

LEGAL DESCRIPTION

PARCEL NO. 1:

THAT PORTION OF LOT 8, BLOCK 58 OF RANCHO SAN BERNARDINO, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 7 OF MAPS, PAGE(S) 2, RECORDS OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING 175 FEET WEST OF THE NORTHEAST CORNER OF LOT 8, BLOCK 58; THENCE WEST 75 FEET TO THE NORTHEAST CORNER OF LAND CONVEYED TO VICTOR E. GAMBER AND WIFE AND RECORDED DECEMBER 26, 1925, IN BOOK 21, PAGE 400, OFFICIAL RECORDS; THENCE SOUTH 285 FEET; THENCE WEST 130 FEET TO THE NORTHEAST CORNER OF TRACT OF LAND CONVEYED TO EARL E. PRESTON BY DEED RECORDED IN BOOK 608, PAGE 37, OF DEEDS; THENCE SOUTH 108 FEET; THENCE EAST 205 FEET; THENCE NORTH 393 FEET TO THE NORTH LINE OF SAID LOT 8, BEING THE POINT OF BEGINNING.

PARCEL 2:

THAT PORTION OF LOT 8, BLOCK 58 OF RANCHO SAN BERNARDINO, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 7 OF MAPS, PAGE(S) 2, RECORDS OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 8; THENCE SOUTH ALONG THE EAST LINE OF SAID LOT; 803 FEET TO A POINT DISTANT THEREON 528 FEET NORTH OF THE SOUTHEAST CORNER OF SAID LOT; THENCE WEST 380 FEET; THENCE NORTH TO THE NORTH LINE OF SAID LOT; THENCE EAST ALONG THE NORTH LINE OF SAID LOT TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THE WEST 205 FEET OF THE NORTH 393 FEET THEREOF.

APN 269-081-06
APN 269-081-07
APN 269-081-08

LEGAL DESCRIPTION

LOT 14 AND THE WEST 6.5 FEET OF LOT 13, TRACT 1711, NORTON'S LITTLE FARMS, AS PER PLAT RECORDED IN BOOK 25 OF MAPS, PAGE 27, RECORDS OF SAID COUNTY.

APN 413-284-07

G

AMERICAN INTERNATIONAL SPECIALTY LINES INSURANCE COMPANY

SAN BERNARDINO POLLUTION LEGAL LIABILITY CLEAN-UP COST CAP INSURANCE POLICY

MANY OF THE COVERAGES CONTAIN CLAIMS-MADE-AND-REPORTED REQUIREMENTS. PLEASE READ CAREFULLY. ADDITIONALLY, THIS POLICY HAS CERTAIN PROVISIONS AND REQUIREMENTS UNIQUE TO IT AND MAY BE DIFFERENT FROM OTHER POLICIES THE INSURED MAY HAVE PURCHASED. DEFINED TERMS, OTHER THAN HEADINGS, APPEAR IN BOLD FACE TYPE.

NOTICE: THE DESCRIPTIONS IN ANY HEADINGS OR SUB-HEADINGS OF THIS POLICY ARE INSERTED SOLELY FOR CONVENIENCE AND DO NOT CONSTITUTE ANY PART OF THE TERMS OR CONDITIONS HEREOF.

In consideration of the payment of the premium, in reliance upon the statements in the Declarations and the Application annexed hereto and made a part hereof, and pursuant to all of the terms of this Policy, the Company agrees with the **Named Insured** as follows:

I. INSURING AGREEMENTS

A. COVERAGES

COVERAGE A – LEGAL LIABILITY FOR POLLUTION CONDITIONS

To pay on behalf of the **Insured, Loss** that the **Insured** is legally obligated to pay as a result of **Claims** for **Bodily Injury, Property Damage** or **Clean-Up Costs** resulting from **Pollution Conditions** on, under or migrating from **Insured Site,** or **Pollution Conditions** resulting from **Treatment Waste Transportation,** provided such **Claims** are first made against the **Insured** and reported to the Company, in writing, during the **Policy Period** or during the Extended Reporting Period if applicable, and in accordance with Section III. of the Policy.

COVERAGE B – CONSENT DECREE REQUIRED CLEAN-UP

To pay to or on behalf of the ***Insured Clean-Up Costs*** *incurred pursuant to and necessary to satisfy* the requirements of the **Consent Decree**, provided that:

1. **Clean-Up** takes place after the **Inception Date** and before the **Termination Date**; and

2. The **Insured** timely and routinely reports the **Clean-Up Costs** to the Company prior to the **Termination Date** in accordance with Section IV. Paragraph B.5

3. The initial deposit to the Notional Commutation Account stated in Section VI., L. is paid in full.

2. LEGAL EXPENSE AND DEFENSE

The Company shall have the right and the duty to defend any **Claims** covered under Coverages A. The Company's duty to defend or continue defending any such **Claim**, and to pay any **Loss**, shall cease once the applicable limit of liability, as described in Section V. (Limits of Coverage; Deductible) has been exhausted. Defense costs, charges and expenses are included in **Loss** and reduce the applicable limit of liability, as described in Section V. and are included within the Self-Insured Retention amount for the Coverage Section that applies and is shown in Item 3 of the Declarations. Counsel for the Defense of Claims shall be selected by the **Insured** from a pre-approved list, in consultation with the Company, which list may be updated periodically with the consent of the Company.

If the Company recommends a settlement of a **Claim** for:

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1. an amount within the Self- Insured Retention and the **Insured** refuses such settlement, the Company's duty to defend the **Insured** shall then cease and the **Insured** shall thereafter negotiate or defend such **Claim** independently of the Company and the Company shall not be liable for any **Loss** or **Clean-Up Costs** in excess of the Self-Insured Retention; or

2. a total amount in excess of the balance of the Self-Insured Retention and the **Insured** refuses such settlement, the Company's duty to defend the **Insured** shall then cease and the **Insured** shall thereafter negotiate or defend such **Claim** independently of the Company and the Company's liability for **Loss** or **Clean-Up Costs** shall be limited to that portion of the recommended settlement and the defense costs, charges and expenses as of the **Insured's** refusal of the recommended settlement which exceed the Self-Insured Retention and fall within the Limits of Liability. Notwithstanding anything to the contrary contained herein, if the settlement contemplates work or non-monetary contribution by the Insured, the Company and Insured shall consult in good faith about the merits of the settlement. Following such good faith consultation, and provided the work or non-monetary contribution of Insured materially prejudices Insured with regard to the performance of its obligations under the Consent Decree, Insured may decline the settlement without prejudice to coverage.

II. EXCLUSIONS

1. COMMON EXCLUSIONS - APPLICABLE TO ALL COVERAGES

This Policy does not apply to **Clean-Up Costs**, **Claims**, or **Loss** arising from:

A. CONTRACTUAL LIABILITY:

liability of others assumed by the **Insured** under any contract or agreement, unless the liability of the **Insured** would have attached in the absence of such contract or agreement or the contract or agreement is an **Insured Contract**.

B. TRANSPORTATION:

of **Pollution Conditions** that result from the maintenance, use, operation, loading or unloading of any conveyance beyond the boundaries of the **Insured Site** during or following policy inception. This exclusion does not apply to **Treatment Waste Transportation**.

C. INTENTIONAL NONCOMPLIANCE:

Pollution Conditions based upon or attributable to any **Responsible Insured's** intentional, willful or deliberate noncompliance with any statute, regulation, ordinance, administrative complaint, notice of violation, notice letter, executive order, or instruction of any governmental agency or body, including but not limited to the **Consent Decree** and any orders, directives or instructions issued thereunder. This exclusion does not apply to such noncompliance, if any, which occurred prior to the **Inception Date** and resulted in the **Pollution Conditions** that are the subject of the **Consent Decree.**

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D. **INSURED vs. INSURED:**

Any Claim by any **Insured** against any other person or entity who is also an **Insured** under this Policy. This exclusion does not apply to **Claims** initiated by third parties or **Claims** that arise out of an indemnification given by one **Named Insured** to another **Named Insured** in an **Insured Contract.** This exclusion shall not apply to coverage for the **EPA** or **DTSC in** the event the **EPA** or **DTSC** is the **Named Insured.**

E. **EMPLOYER LIABILITY:**

injury to any employee, director, officer, partner, leased or temporary worker of the **Named Insured** if such injury occurs during and in the course of said employment or arising out of any workers' compensation, unemployment compensation or disability benefits law or similar law.

F. **NON-DISCLOSURE:** arising from 1) any **Claim** known by a **Responsible Insured** and not disclosed to the Company prior to the **Inception Date,** other than the **Claim** that is the subject of the **Consent Decree;** or 2) facts, circumstances or information actually known to a **Responsible Insured** and willfully withheld from the Company with the intent to conceal from the Company prior to the **Inception Date;** or 3) facts, information or circumstances, other than the existence of the **Pollution Conditions** that are the subject of this Policy, actually known to the **Responsible Insured** prior to the **Inception Date** and not disclosed to the Company that would result in the **Responsible Insured's** reasonable expectation that a **Claim** for **Bodily Injury** or **Property Damage** for which written notice has not yet been received would likely be asserted.

G. **MULTIPLIED DAMAGES/FINES/PENALTIES:**

of civil, administrative or criminal fines or penalties, including Stipulated Penalties under the **Consent Decree,** assessments, punitive, exemplary or multiplied damages. However, solely with respect to Coverage B, this exclusion does not apply to costs and expenses, required under the **Consent Decree** other than fines and penalties including Stipulated Penalties, incurred to bring the remediation work into conformity with the demands of the requirements of the **Consent Decree.**

H. **PRODUCTS LIABILITY:**

the **Insured's Products.**

I. **ASBESTOS AND LEAD:**

asbestos or any asbestos-containing materials or lead-based paint. Solely with respect to Coverage B, this exclusion shall not apply to any such **Clean-Up Costs** incurred in **Final Decommissioning** permitted under the terms of this Policy.

J. **INSURED'S PROPERTY/BAILEE LIABILITY:**

or a result of **Property Damage** to property owned, leased or operated by, or in the care, custody or control of an **Insured,** even if such **Property Damage** is incurred to avoid or mitigate **Loss** which may be covered under this Policy.

K. **NATURAL RESOURCE DAMAGE**

or for **Natural Resource Damage.**

L. **WAR**

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Arising directly or indirectly as a result of or in connection with war, whether declared or not, or any act or condition incident to war. War includes civil war, insurrection, act of foreign enemy, civil commotion, factional civil commotion, military or usurped power, rebellion or revolution.

M. SEISMIC EVENT

any alteration of geological conditions and hydro-geological conditions resulting from a seismic event.

2. COVERAGE A EXCLUSIONS

The following exclusions apply to Coverage A.

A. OTHER APPLICABLE COVERAGES:

arising from **Clean-Up Costs** required under the **Consent Decree** or otherwise covered under Coverage B.

B. INTERNAL EXPENSES:

for costs, charges or expenses incurred by the **Insured** for goods supplied or services performed by the staff or salaried employees of the **Insured**, or its parent, subsidiary or affiliate, except if in response to an emergency or pursuant to **Environmental Laws** that require immediate remediation of **Pollution Conditions** or **Pollutants**, or unless such costs, charges or expenses are incurred with the prior written approval of the Company in its sole discretion.

C. PROPERTY DAMAGE TO CONVEYANCES:

For **Property Damage** to any conveyance utilized in **Treatment Waste Transportation.**

D. POLLUTION CONDITIONS PRIOR OR SUBSEQUENT TO TRANSPORTATION OF CARGO:

Arising from **Pollution Conditions:**

1. That commence prior to **Treatment Waste Transportation**; or
2. That commence after waste material transported in **Treatment Waste Transportation** reaches its final destination, or while such waste is in storage off-loaded from the conveyance that was transporting it.

E. THIRD-PARTY CARRIER CLAIMS:

Made by a third-party carrier engaged in **Treatment Waste Transportation**, its agents or employees, for **Bodily Injury, Property Damage** or **Clean-Up Costs**, whether or not the **Bodily Injury, Property Damage** or **Clean-Up Costs** were directly incurred by such third-party carrier. This exclusion does not apply to **Claims** arising from the **Insured's** negligence.

3. COVERAGE B EXCLUSIONS

The following exclusions apply to Coverage B.

This Policy does not apply to **Clean-Up Costs** arising from:

A. BODILY INJURY OR PROPERTY DAMAGE:

any **Bodily Injury** or **Property Damage.**

B. THIRD-PARTY LIABILITY:

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any liability to any third-party for any reason whatsoever, other than for **Clean-Up Costs** otherwise covered under this Coverage B.

C. **LABOR DISPUTES:**

delay due to labor disputes, including, but not limited to, strikes.

D. **LICENSE SUSPENSION:**

suspension, lapse, modification or cancellation of any license, permit, lease or contract of a **Supervising Contractor** performing work pursuant to the execution of the **Consent Decree** which is required by the **Lead Oversight Agency.**

E. **BANKRUPTCY:**

default, bankruptcy or insolvency of any entity(s) involved in the **Clean-Up**, but this exclusion does not apply if the entity(s) involved in the **Clean-Up** has a performance bond issued by a surety company on the Federal Register of the United States Department of the Treasury which in fact provides coverage for the **Clean-Up** at the time of such default, bankruptcy or insolvency. This exclusion shall not apply to coverage for the **EPA** or **DTSC** in the event the **EPA** or **DTSC** is the **Named Insured.**

F. **DENIAL OF ACCESS:**

any delay in obtaining, or failure to obtain, access to any property.

G. **UNREASONABLE DELAY:**

unreasonable delay in a **Supervising Contractor's** performance of **Clean-Up**, if such delay is within *the control of the* **Supervising Contractor** *performing the* **Clean-Up**. *This exclusion shall not apply* coverage for the **EPA** or **DTSC** in the event the **EPA** or **DTSC** is the **Named Insured.**

H. **FAULTY WORKMANSHIP:**

faulty workmanship or defective materials supplied or provided by the **Supervising Contractor** during **Clean-Up** performed pursuant to the requirements of the **Consent Decree**; provided such faulty workmanship or defective materials are discovered within one year after such work is accepted.

I. **MODIFICATION OF THE STATEMENT OF WORK:**

any modification of the **Statement of Work** unless:

1. Such modification is consented to in advance by the Company in writing, in its sole discretion; or

2. Such modification is required by the **Lead Oversight Agency** and permitted pursuant to the **Consent Decree** provided, in the event the **Named Insured** is not the **EPA** or **DTSC**, the **Named Insured** confers with the Company and selects the means that will minimize the payment of **Clean-Up Costs** under this Policy to the extent the **Named Insured** has the right or ability to *accomplish the requirements of such modification through different means.*

For purposes of this exclusion, changes in operations made pursuant to the **Statement of Work** shall not be considered modifications of the **Statement of Work.**

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J. OTHER APPLICABLE COVERAGES:

any **Clean-Up Costs** covered under Coverage A.

K. CITY RETAINED COSTS

costs and obligations retained by the **Insured** pursuant to Section VI, 14(b) of the **Consent Decree.**

L. NEW TREATMENT PLANT COSTS

construction of any water treatment plants other than the **Anticipated Treatment Plants** and except if necessary as a result of **Non-Routine O&M** and the operation and maintenance of any water treatment plants other than the **Newmark Operable Unit** and the **Muscoy Operable Unit** including the **Anticipated Treatment Plants.** This exclusion shall not apply to operation and maintenance costs that are required under the **Consent Decree** as substitution for treatment at the **Newmark Operable Unit** and the **Muscoy Operable Unit** during any maintenance outages at those facilities or as part of required **Non-Routine O&M** under the **Statement of Work.**

M. PRODUCTION OF EXCESS WATER

treatment and operation and maintenance costs resulting from production of water in excess of that which is necessary to meet the performance criteria set forth in the **Statement of Work.**

N. PROPERTY ACQUISITION

arising from the purchase, leasing or other acquisition of land to build any water treatment plants and associated infrastructure, including the donation or dedication of land by the **Named Insured** to satisfy the requirements of the **Consent Decree**, except as required for **Non-Routine O&M** capital improvements.

O. DECOMMISSIONING COSTS

arising from all costs for **Final Decommissioning** of the extraction and treatment system unless approved by the Company in advance. This Exclusion shall not apply provided the balance of the Notional Commutation Account is positive at the time of such decommissioning and the Company has not posted a **Loss** reserve under Coverage A, however, coverage provided for such **Clean-Up Costs** shall be limited to the amount of the remaining balance credited to the Notional Commutation Account.

P. PERMIT COSTS

the application for, and acquisition of, any permits or insurance. This Exclusion shall not apply to costs associated with San Bernardino Municipal Water District employee staff time in reviewing permit related material required under the municipal ordinance required to be enacted under the **Consent Decree.**

Q. NON-REIMBURSABLE COSTS

costs which are non-reimbursable by the **O&M Escrow** or **Construction Escrow.**

R. POTABLE WATER DELIVERY COSTS

construction and/or operation maintenance and monitoring costs of the **Insured's** water supply system after the point of interconnection between the **Newmark Operable Unit** and/or **Muscoy Operable Unit** and the **Insured's** potable water supply system. This includes any additional

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treatment after acceptance of the water into the potable water system including but not limited to chlorination, disinfection and solid removal performed on the treated water as required by the **Insured's** Water Supply Permit to meet drinking water standards.

S. ORDINANCE IMPLEMENTATION COSTS

the implementation and adoption the Insured's proposed ordinance to protect the extraction well system. Including but not limited to, purchasing any access, access easements, restrictive easements, or property access rights or costs associated with establishing land/water use restrictions. However, this Exclusion shall not apply to costs associated with San Bernardino Municipal Water District employee staff time in reviewing permit related material required by the proposed ordinance and costs associated with the **Ground Water Model.**

T. REGULATORY OVERSIGHT

Oversight Costs from the EPA, **DTSC,** or other regulatory agencies.

U. BREACH OF PROFESSIONAL SERVICES

breach **of Professional Services.**

III. NOTICE REQUIREMENTS AND CLAIM PROVISIONS

The **Insured** shall provide the Company with notice of **Pollution Conditions** and **Claims** as follows:

A. NOTICE OF POLLUTION CONDITIONS, CLAIMS, AN INTERRUPTION AND POLLUTANTS

1. The **Insured** shall give notice of **Claims,** as described in 2. below, as soon as soon as possible after the **Claim** becomes known to the **Responsible Insured,** but in any event during the **Policy Period** or during the Extended Reporting Period if applicable, to:

   Manager, Pollution Insurance Products Unit
   AIG Technical Services, Inc.
   Environmental Claims Department
   101 Hudson St. - 31st Fl.
   Jersey City, NJ 07302
   Fax: 201-631-5051

   or other address(s) as substituted by the Company in writing.

2. When a **Claim** has been made, the **Insured** shall furnish information at the request of the Company and the **Insured** shall forward the following to the Company as soon as possible after the **Claim** becomes known to the **Responsible Insured:**

   (a) All reasonably obtainable information with respect to the time, place and circumstances thereof, and the names and addresses of the claimant(s) and available witnesses.

   (b) All demands, summonses, notices or other process or papers filed with a court of law, administrative agency or an investigative body;

   (c) Other information in the possession of the **Insured** or its hired experts which the Company reasonably deems necessary.

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IV. RIGHTS OF THE COMPANY AND DUTIES OF THE INSURED IN THE EVENT OF POLLUTION CONDITIONS AND IN CONNECTION WITH REMEDIAL ACTIVITIES

A. Pollution Conditions - Coverage A

1. The Company's Rights

The Company shall have the right but not the duty to clean up or mitigate **Pollution Conditions** upon receiving notice as provided in Section III. of this Policy. Any sums expended in taking such action by the Company will be deemed incurred or expended by the **Insured** and shall be applied against the limits of coverage and Self-Insured Retention under this Policy.

2. Duties of the Insured

The **Named Insured** shall have the duty to clean up **Pollution Conditions** to the extent required by **Environmental Laws**, by retaining competent professional(s) or contractor(s) mutually acceptable to the Company and the **Named Insured**. The Company shall have the right but not the duty to review and approve all aspects of any such clean-up. The **Named Insured** shall notify the Company of actions and measures taken pursuant to this paragraph.

B. Consent Decree Clean-Up Activities - Coverages B

1. The Company shall have the right, but not the duty, to review, assess and inspect all aspects of any **Clean-Up** to which Coverage B applies. Neither the Company's rights nor its exercise of the rights under this paragraph shall constitute an undertaking to determine or warrant that the **Clean-Up** is safe, healthful, or in conformity with applicable law.

2. Subject to Condition H, the **Named Insured** shall take all reasonable and prudent steps to minimize **Clean-Up Costs,** limit interference with **Clean-Up,** and prevent the spread of further contamination. In the event the **Named Insured** has any rights or ability under the **Consent Decree** to cure any deficiency, failure, or breach or any rights or ability to contest any modification of the **Statement of Work** or other obligations under the **Consent Decree,** the **Named Insured** agrees that it shall consult with the Company in a reasonable time before such rights or ability are prejudiced and that the **Named Insured** shall, to the extent of its own rights under the **Consent Decree**, cooperate with the Company in good faith to minimize **Clean-Up Costs.**

3. The **Insured** shall report, to the address stated in paragraph A.1 of Section III. above, increased quantity, concentration or disbursement of **Pollution Conditions,** and the discovery of **Pollution Conditions** different than those identified in the **Scope of Work** .

4. Except in the event the **EPA** or **DTSC** is **Named Insured,** The **Named Insured** shall keep detailed records of all **Clean-Up Costs** and provide the Company with access to such records, and shall provide completed copies of the attached **Clean-Up Progress Report** at the time intervals prescribed in Item 6. of the Declarations.

5. To the extent of the **Insured's** legal right of access, the **Insured** shall permit the Company to inspect the Operable Units identified in the **Consent Decree** and any portion of the **Insured Site,** and all financial records, drawings, plans and specifications concerning the **Clean-Up** or **Clean-Up Costs** as often as the Company chooses after providing reasonable notice.

6. The **Insured** shall cooperate with the Company by providing the Company with:

   (a) Access to all information developed or discovered by the **Insured** concerning the **Clean-Up,** whether or not deemed by the **Insured** to be relevant;

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(b) Reasonable access to interview any agent, servant or employee of the **Insured** or any **Supervising Contractor** or subcontractor involved in the **Clean-Up**; and

(c) Access to other information or other responses to reasonable requests from the Company concerning the **Clean-Up**.

V. LIMITS OF COVERAGE; SELF-INSURED RETENTION

Regardless of the number of **Claims**, claimants, or **Pollution Conditions** the following limits of liability apply:

A. Policy Aggregate Limit

The Company's total liability for all **Loss**, under Coverage A and all **Clean-Up Costs** under Coverage B combined shall not exceed the "Policy Aggregate" stated in Item 4 of the Declarations.

B. Sub-Limit Coverage A.

Subject to the "Policy Aggregate" limit described in V.A, above, The Company's total liability for all **Loss**, under Coverage A shall not exceed the $25,000,000.

C. Treatment Waste Transportation Sub-Limit

Subject to the "Policy Aggregate" limit described in V.A, above, The Company's total liability for all **Loss** arising from **Treatment Waste Transportation**, under Coverage A shall not exceed the $1,000,000.

D. Non-Routine O&M Sub-Limit

Subject to the "Policy Aggregate" limit described in V.A, above, a Sub-Limit shall apply to all **Clean-Up Costs** that are **Non-Routine O&M Costs** paid under Coverage B. The Sub-Limit shall be the Net Present Value of $20,000,000 calculated from January 1, 2003 as described in this Paragraph. On an annual basis this Sub-Limit will be adjusted as follows: the Sub-Limit at the beginning of the coverage year (on the **Inception Date**, $20,000,000 multiplied by 1.03 compounded annually from January 1, 2003) less **Clean-Up Cost** that are **Non-Routine O&M Costs** paid during the coverage year multiplied by 1.03 compounded annually from January 1, 2003 shall equal the amount of the Sub-Limit available for the following coverage year.

E. Groundwater Model Sub-Limit

Subject to the "Policy Aggregate" Limit described in V.A, above, a Sub-Limit shall apply to all **Clean-Up Costs** for development and management of the **Ground Water Model** combined with expenditures to implement Section IX of the **Consent Decree** (Access and Institutional Controls.) The Sub-Limit shall be shall be the Net Present Value of $1,000,000 calculated from January 1, 2003 as described in this paragraph. On an annual basis this Sub-Limit will adjusted as follows: the Sub-Limit at the beginning of the coverage year (on the **Inception Date** $1,000,000 multiplied by 1.03 compounded annually from January 1, 2003) less **Clean-Up Cost** that are for development and management of the **Ground Water Model** combined with expenditures to implement Section IX of the **Consent Decree** (Access and Institutional Controls) paid during the coverage year multiplied by 1.03 compounded annually from January 1, 2003 shall equal the amount of the Sub-Limit available for the following coverage year.

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F. **Construction Escrow Account Sub-Limit**

Subject to the "Policy Aggregate" limit described in V.A, above, a Sub-Limit shall apply to all **Clean-Up Costs** that are for **Clean-Up** that is reimbursable from the **Construction Escrow Account** and paid under Coverage B. The Sub-Limit shall be the Net Present Value of $10,000,000 calculated from January 1, 2003 as described in this paragraph. On an annual basis this Sub-Limit will be adjusted as follows: the Sub-Limit at the beginning of the coverage year (on **Inception Date**, $10,000,000 multiplied by 1.03 compounded annually from January 1, 2003) less **Clean-Up Cost** that are for **Clean-Up** that is reimbursable from the **Construction Escrow Account** paid during the coverage year multiplied by 1.03 compounded annually from January 1, 2003 shall equal the amount of the Sub-Limit available for the following coverage year.

G. **Self Insured Retention - Coverage A**

Subject to Paragraphs V.A. and V.B., above, this Policy is to pay covered **Loss** under Coverage A, in excess of the Self-Insured Retention amount of $250,000. The Self-Insured Retention of $250,000 shall be applicable to Each Incident. For purposes of this provision, Each Incident shall mean all **Loss** arising from the same, continuous or related **Pollution Conditions.** The Self-Insured Retention amount is to be borne by the **Insured** and is not to be insured. The insurance provided by this Policy shall be excess over the Self-Insured Retention, whether such Self-Insured Retention is collectible or not collectible by reason of the refusal or inability of the **Insured** to pay the retention amount due to insolvency, bankruptcy or any other reason. In no event shall the Company be responsible to make any payment under this Policy before the **Insured** has paid the Self-Insured Retention, and the risk of uncollectibility (in whole or in part) of such Self-Insured Retention is expressly retained by the **Insured** and is not in any way or under any circumstances insured or assumed by the Company.

The **Insured** shall promptly reimburse the Company for advancing any element of **Loss** falling within the Self-Insured Retention.

VI. CONDITIONS

A. **Assignment** - This Policy may only be assigned on the request of the **Named Insured** with the prior written consent of the Company, which consent shall not be unreasonably withheld or delayed. Assignment of interest under this Policy shall not bind the Company until its consent is endorsed thereon.

B. **Subrogation** - In the event of any payment under this Policy, the Company shall be subrogated to all the **Insured's** rights of recovery therefor against any person or organization and the **Insured** shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights including without limitation, assignment of the **Insured's** rights against any person or organization who caused **Pollution Conditions** or is responsible for any **Pollutants** on account of which the Company made any payment under this Policy. The **Insured** shall do nothing to prejudice the Company's rights under this paragraph subsequent to **Loss.** Any recovery as a result of subrogation proceedings arising out of the payment of **Loss** or **Clean-Up Costs** covered under this Policy shall accrue first to the **Insured** to the extent of any payments in excess of the limit of coverage then to the Company to the extent paid from the balance of the Notional Commutation Account, which amounts shall be re-credited to the Balance of Notional Commutation Account; then to the Company to the extent of its payment under the Policy and to the **Insured** to the extent of its Self-Insured Retention. Expenses incurred in such subrogation proceedings shall be apportioned among the interested parties in the recovery in the proportion that each interested party's share in the recovery bears to the total recovery. Notwithstanding the foregoing, the Company expressly waives its rights of subrogation against the County of San Bernardino for **Pollution Conditions** which commenced prior to the **Inception Date.** This Condition shall not apply to the rights of recovery of the **EPA** or the **DTSC** in the event **EPA** or **DTSC** is the **Named Insured.**

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C. **Cooperation** - The **Insured** shall cooperate with the Company and offer all reasonable assistance in the investigation and defense of **Claims** or the evaluation of **Clean-Up Costs** under the applicable Coverages purchased. The Company may require that the **Insured** submit to examination under oath, and attend hearings, depositions and trials. In the course of investigation or defense, the Company may require written statements or the **Insured's** attendance at meetings with the Company. The **Insured** must assist the Company in effecting settlement, securing and providing evidence and obtaining the attendance of witnesses. This Condition shall not apply to **EPA** or **DTSC** if they are a **Named Insured.**

D. **Changes** - Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this Policy or estop the Company from asserting any rights under the terms of this Policy; nor shall the terms of this Policy be waived or changed, except by endorsement issued by the Company to form a part of this Policy.

E. **Voluntary Payments** - No **Insured** shall voluntarily enter into any settlement, or make any payment or assume any obligation unless in response to an emergency or pursuant to **Environmental Laws** that require immediate remediation of **Pollution Conditions**, without the Company's consent which shall not be unreasonably withheld, except at the **Insured's** own cost. This provision shall not apply to covered **Clean-Up Costs** under Coverage B.

F. **Concealment or Fraud** - This entire Policy shall be void as of its inception if, whether before or after **Clean-Up Costs** are incurred or a **Claim** is first made, the **Named Insured** has willfully concealed or misrepresented any fact or circumstance material to the granting of coverage under this Policy, the description of the **Insured Site**, or the interest of the **Insured** therein.

G. **Cancellation** - This Policy may be cancelled by the **Named Insured** with the prior written consent of the **Lead Oversight Agency** and **Support Oversight Agency** by surrender thereof to the Company or any of its authorized agents or by mailing to the Company written notice stating when, not less than thirty (30) days thereafter the cancellation shall be effective. Cancellation by the **Named Insured** must be accompanied by commutation of this contract pursuant to Condition N. of this Section VI. Provided the **EPA** or **DTSC** is not the **Named Insured** under Coverage B pursuant to Section VI., O, this Policy may be cancelled by the Company only for the reasons stated below by mailing to the **Named Insured** at the address shown in the Policy and to the **Lead Oversight Agency** and **Support Oversight Agency**, written notice stating when not less than 60 days (10 days for nonpayment of premium and 30 days for cancellation pursuant item 3 below) thereafter such cancellation shall be effective. Proof of mailing of such notice shall be sufficient proof of notice.

1. Material misrepresentation by the **Insured;**

2. The **Insured's** failure to comply with the material terms, conditions or contractual obligations under this Policy, including the failure to pay any premium or any element of **Loss** within the Self-Insured Retention advanced by the Company when due, provided such failure to comply has not been cured within 60 days, (10 days for the non-payment of premium or reimbursement of any Self-Insured Retention advanced by the Company;

The time of surrender or the effective date and hour of cancellation stated in the notice shall become the end of the **Policy Period.** Delivery of such written notice either by the **Named Insured** or by the Company shall be equivalent to mailing.

If the **Named Insured** or the Company cancels, premium returned to the **Named Insured** shall be computed pursuant to Paragraph M. of this Section VI., "Earning of Premium" and the Balance credited to the Notional Commutation Account shall be paid out in accordance with Paragraph N of this Section VI., "Notional Commutation Account."

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H. **Other Insurance** - Where other insurance or surety bonds may be available for **Loss** or **Clean-Up Costs** covered under this Policy, the **Insured** shall promptly upon request of the Company provide the Company with copies of all such policies. With respect to Coverage B this insurance is primary and the Company's obligations as primary insurer are not effected by any other insurance that may be primary. With respect to Coverage B, if other valid and collectible insurance is available to the **Insured** for **Loss** or **Clean-Up Costs** covered by this Policy, the Company's obligations are limited as follows:

1. With respect to Coverage A, subject to 3., below of this paragraph H, this insurance is primary, and the Company's obligations are not affected unless any of the other insurance is also primary. In that case, the Company will share with all such other insurance by the method described in Paragraph 2. below.

2. If all of the other insurance permits contribution by equal shares, the Company will follow this method also. Under this approach each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first. If any of the other insurance does not permit contribution by equal shares, the Company will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.

3. Solely with respect to **Loss** arising from **Treatment Waste Transportation** covered under Coverage A, this insurance is excess over any other Insurance providing coverage for such **Loss**.

4. Insurance policies or indemnification agreements for **Loss** excluded from the **Consent Decree** or Operable Units excluded from the **Consent Decree** shall not fall within the scope of this condition.

I. **Right of Access and Inspection** – To the extent the **Insured** has such rights, any of the Company's authorized representatives shall have the right and opportunity but not the obligation to interview persons employed by the **Insured** and to inspect at any reasonable time, during the **Policy Period** or thereafter, any Operable Unit identified in the **Consent Decree** and locations on the **Insured Site**. Neither the Company nor its representatives shall assume any responsibility or duty to the **Insured** or to any other party, person or entity, by reason of such right or inspection. Neither the Company's right to make inspections, sample and monitor, nor the actual undertaking thereof nor any report thereon shall constitute an undertaking on behalf of the **Insured** or others, to determine or warrant that property or operations are safe, healthful or conform to acceptable engineering practices or are in compliance with any law, rule or regulation. The **Named Insured** agrees to provide appropriate personnel to assist the Company's representatives during any inspection.

J. **Access to Information** - The **Named Insured** agrees to provide the Company with access to any information developed or discovered by the **Insured** concerning **Loss** or **Clean-Up Costs** covered under this Policy, whether or not deemed by the **Insured** to be relevant to such **Loss** or **Clean-Up Costs** and to provide the Company access to interview any **Insured** and review any documents of the **Insured**.

K. **Representations** - By acceptance of this Policy, the **Named Insured** agrees that the statements in the Declarations, the Application and Warranty are their agreements and representations, that this Policy is issued in reliance upon the truth of such representations and that this Policy embodies all agreements existing between the **Insured** and the Company or any of its agents relating to this insurance. The Named Insured City of San Bernardino specifically agrees and acknowledges that the Warranty Statement made by the **Responsible Insured** and made a part of the Application of this Policy is authorized to be made on behalf of the City of San Bernardino and shall be binding upon the City of San Bernardino.

L. **Action Against Company** - No third-party action shall lie against the Company, unless as a condition

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precedent thereto there shall have been full compliance with all of the terms of this Policy, nor until the amount of the **Insured's** obligation to pay shall have been finally determined either by judgment against the **Insured** after actual trial or by written agreement of the **Insured**, the claimant and the Company.

Any person or organization or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this Policy to the extent of the insurance afforded by the Policy. No person or organization shall have any right under this Policy to join the Company as a party to any action against the **Insured** to determine the **Insured's** liability, nor shall the Company be impleaded by the **Insured** or his legal representative. Bankruptcy or insolvency of the **Insured** or of the **Insured's** estate shall not relieve the Company of any of its obligations hereunder.

M. Earning of Premium - $---- ***(this will be the actual $ amount of the premium that is earned at inception The risk transfer PLL premium and 25% of the Cost Cap)*** will be earned at **Inception Date.** The remaining premium that is not credited to deposit in the Notional Commutation Account shall be deemed earned subject to the Return Premium Schedule Endorsement attached to this Policy. Any cancellation of the Policy by the **Insured** shall not result in a return of any premium deemed earned.

N. Notional Commutation Account - the Company will maintain a notional commutation account balance calculated as follows:

1. $ INITIAL DEPOSIT ; plus
2. Funds Growth credited as per below; less
3. 100% of **Clean-Up Costs** and **Loss** paid by the Company under Coverages A and B; plus
4. **Water Sale Recoveries;**

Funds Growth: The notional commutation account, if positive, will earn interest at an annual rate equal to the 1 year Constant Maturity Treasury (CMT) yield. The annual interest rate applied will be updated annually based upon the CMT yield in effect on each anniversary date of the **Inception Date.**

Water Sales Recovery: Subject to the Funds Growth described in the forgoing paragraph, the Company shall keep a separate account of the portion of the Notional Commutation Account Balance representing deposits based on **Water Sales Recoveries.** That portion of the Notional Commutation Account balance that represents deposits based on **Water Sales Recoveries** shall be available only for the payment of **Clean-Up Costs** under Coverage B and shall not be applied to the payment of any Loss under Coverage A.

Commutation: Prior to issuance of a final **Certificate of Completion**, the **Named Insured** under Coverage B may elect to commute this contract with the prior written consent of the **Lead Oversight Agency,** and where required pursuant to the **Consent Decree,** the participation of the **Support Oversight Agency,** by providing the Company thirty (30) days prior written notice. In the event the **EPA** or **DTSC** is the **Named Insured** under Coverage B pursuant to Section VI., O, such notice must be accompanied by the written consent of the **Named Insured** under Coverage A. If the **Named Insured** under Coverage A so elects, the Company will pay to the **Named Insured under Coverage B** or as directed by that **Named Insured,** an amount equal to 100% of the balance of the Notional Commutation Account in exchange for a complete release from all **Named Insureds,** on behalf of all **Insureds,** of the Company's liability for all **Clean-Up Costs** and **Loss** covered under both Coverages A and B of this Policy whether known or unknown.

Further, upon receipt of the final **Certificate of Completion** the **Named Insured** under Coverage B may elect to commute all coverage under Coverages A and B by providing the Company thirty (30) days prior written notice. In the event the

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EPA or **DTSC** is the **Named Insured** under Coverage B at time of issuance of a final Certificate of Completion, pursuant to Section VI., O., **written consent of the Named Insured** under Coverage A shall not be required. If the **Named Insured** under Coverage B so elects, the Company will pay the **Named Insured** under Coverage A an amount equal to 50% of the balance of the Notional Commutation Account and the remaining 50% to the **EPA** in exchange for a complete release from all **Named Insureds,** on behalf of all **Insureds,** of the Company's liability for all **Clean-Up Costs** and **Loss** covered under both Coverages A and B of this Policy whether known or unknown.

If upon expiration of the **Policy Period** the final **Certificate of Completion** has not been received, in exchange for a complete release from all **Named Insureds,** on behalf of all **Insureds,** of the Company's liability for all **Clean-Up Costs** and **Loss** covered under both Coverages A and B of this Policy, whether known or unknown, the remaining balance of the Notional Commutation Account shall be paid to an escrow account designated by the **Named Insured** under Coverage B, for the benefit of the **Named Insured** under Coverage B in performing the **Clean-Up** necessary to receive the final **Certificate of Completion** which may include payment into an escrow account created for the purpose of holding and administrating proceeds from the Guaranteed Investment Contract established to pay for **Clean-Up** after the expiration of the Policy.

O. Work Takeover -

A. in the event either the **EPA** or **DTSC** can exercise its right to assume the performance of all or any portion of the **Clean-Up** pursuant to Section 109 of the **Consent Decree,** the Company shall, to the extent of the City of San Bernardino's rights pursuant to the **Consent Decree** or as otherwise agreed upon by the **EPA** and **DTSC,** first have the ability to cure any condition or deficiency that may result in such a work take over. Subject to the available limit of liability of this Policy, the Company shall have the right, but not the duty to elect at its sole discretion to:

1) provide sufficient additional resources to the **Named Insured** to remedy any condition or deficiency that may result in work takeover; or

2) Obtain bids or negotiate proposals, on behalf of the **Named Insured,** from contractors and competent professionals acceptable to the **Lead Oversight Agency** as a replacement **Supervisory Contractor** for a contract for completion of the work required under the **Consent Decree** and arrange for a contract to be executed by and between the **Named Insured** and such replacement **Supervisory Contractor;** or

3) Undertake to perform and complete the **Clean-Up** through independent contractors and competent professionals that are satisfactory to the **Lead Oversight Agency.** In which event, the expiration date of the **Policy Period,** applicable to Coverage A only, shall be the date the Company agrees to undertake to perform and complete the **Clean-Up;** or

4) Perform or complete any task, obligation, remedy or right available to the **Named Insured,** City of Bernardino pursuant to the terms of the **Consent** Decree.

It shall be condition precedent of any coverage under this Policy that the **Named Insured** shall fully cooperate with the Company in the selection and retention process, including the execution of any contracts, necessary to contract with any replacement **Supervisory Contractor** pursuant to b) above of this Condition O.

B. In the event either the **EPA** or **DTSC** can exercise its right to assume the performance of all or any portion of the **Clean-Up** pursuant to Section 109 of the **Consent Decree** and the Company does not elect to exercise any right under Paragraph A., of this Condition O. Upon the written request of

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either the **EPA** or **DTSC** the Company shall replace the City of San Bernardino as **Named Insured** with the entity requesting substitution. The City of San Bernardino agrees and acknowledges that the Company may rely solely upon the representation of the **EPA** or **DTSC** that work take over is permitted pursuant to the terms of the **Consent Decree**, and the City of San Bernardino hereby releases and holds harmless the Company from any claim, demand, loss or liability asserted by the City of San Bernardino arising from the Company's reliance upon such written representation of the **EPA** or **DTSC**.

In the event the **EPA** or **DTSC** replaces the City of San Bernardino as **Named Insured** the following shall apply:

1) The **EPA** or **DTSC** shall become the **Named Insured** under Coverage B only as of the first date on which such Work Takeover occurs.

2) The **EPA** or **DTSC** shall, subject to the other provisions of this Section VI., Paragraph O., assume all the responsibilities of the **Named Insured** under Coverage B.

3) The addition of the **EPA** or **DTSC** as Named **Insured** under Coverage B shall not change the Limits of Liability, the amount credited to the Notional Commutation Account, the **Statement of Work** or, subject to the other provisions of this Section VI., Paragraph O., any terms or conditions of the Policy. Sums expended by the **EPA** or **DTSC** prior to becoming the **Named Insured** shall not be **Clean-Up Costs.**

4) The **EPA** or **DTSC** shall become the **Named Insured** under Coverage B until such date as the **EPA** or **DTSC** ceases implementation of the Work Takeover and responsibility for execution of the **Clean-Up** reverts to the **Named Insured,** City of San Bernardino or the Company.

5) The **EPA** or **DTSC** shall assume all the rights and benefits of the **Named Insured** under the Coverage B of the Policy and, subject to the other provisions of this Section VI., Paragraph O., all the responsibilities of the **Named Insured** under Coverage B under the Policy including, but not limited to, providing **Clean-Up Cost Progress Reports,** reporting the discovery of new **Pollutants** or increases in the concentration or disbursement of known **Pollutants,** and receiving notice of cancellation.

6) Notice of cancellation and all other notices under the Policy shall be sent to shall be sent to:

   Assistant Regional Counsel

   _____

   DTSC

   _____

   City of San Bernardino Municipal Water Department
   Attention: General Manager
   PO Box 710
   San Bernardino, CA 92418

7) After the occurrence and during the continuation of a Work Takeover as described above, and for such period as the **EPA** or **DTSC** is the **Named Insured** under the Policy: I) the Company shall not have the right to perform, manage, or undertake **Clean-Up,** nor the right to approve any new **Supervising Contractor** without the prior written consent of the **EPA** and

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DTSC. II) Each and every obligation and responsibility of the **EPA** or **DTSC**, as **Named Insured** under the Policy, shall apply only if and to the extent permitted by all laws, regulations, policies, and guidelines applicable to the **EPA** or **DTSC.** III) Any obligation or responsibility imposed on the **EPA** or **DTSC**, as **Named Insured** under the Policy, that violates, conflicts with, or is inconsistent with any law, regulation, policy, or guideline applicable to the **EPA** or **DTSC** shall be null and void, in each case without prejudice to the effectiveness of the remaining obligations, responsibilities, rights, and benefits applicable to the **EPA** or **DTSC** as **Named Insured** under the Policy. However, under no circumstances shall the Policy Term as outlined in the Declarations and the Limit of Liability as outlined in the Declarations be modified or considered null and void. Costs are presumptively reasonable and necessary.

8) Nothing herein shall prevent the **EPA** or the **DTSC** from exercising, at its sole discretion, return of control of **Clean-Up** to the City of san Bernardino or the Company.

P. **Payment of Premium - Full** payment of premium is due upon the earliest of the 180th day after the **Inception Date** or notice to the Company of any **Claim.** Subject to the foregoing, payment of premium in full must be made within 3 days of the **Named Insured's** receipt of proceeds of the settlement from the United States. The Company shall have no liability to any Insured and no obligation to defend or indemnify any **Insured** for any **Claim** or **Clean-Up Costs** until the Premium is paid in full. This Policy shall be void *ab initio* in the event premium is not fully paid by the 180th day after the **Inception Date.** In the event premium is not paid within 90 days, the premium due shall be increased by applying to the unpaid premium the interest rate applicable to the late payment of the settlement established pursuant to the **Consent Decree.**

Q. **Service Of Suit** – Subject to paragraph M above, it is agreed that in the event of failure of the Company to pay any amount claimed to be due hereunder, the Company, at the request of the **Insured**, will submit to the jurisdiction of a court of competent jurisdiction within the United States. Nothing in this condition constitutes or should be understood to constitute a waiver of the Company's rights to commence an action in any court of competent jurisdiction in the United States, to remove an action to a United States District Court, or to seek a transfer of a case to another court as permitted by the laws of the United States or of any state in the United States. It is further agreed that service of process in such suit may be made upon Counsel, Legal Department, American International Specialty Lines Insurance Company, 70 Pine Street, New York, New York 10270, or his or her representative, and that in any suit instituted against the Company upon this contract, the Company will abide by the final decision of such court or of any appellate court in the event of any appeal.

Further, pursuant to any statute of any state, territory, or district of the United States which makes provision therefor, the Company hereby designates the Superintendent, Commissioner, Director of Insurance, or other officer specified for that purpose in the statute, or his or her successor or successors in office as its true and lawful attorney upon whom may be served any lawful process in any action, suit or proceeding instituted by or on behalf of the **Insured** or any beneficiary hereunder arising out of this contract of insurance, and hereby designates the above named Counsel as the person to whom the said officer is authorized to mail such process or a true copy thereof.

R. **Acknowledgment of Shared Limits** – By acceptance of this Policy, the **Named Insureds** understand, agree and acknowledge that the Policy contains a Policy Aggregate Limit that is applicable to, and will be shared by, all **Named Insureds** and all other **Insureds** who are or may become insured hereunder. In view of the operation and nature of this shared Policy Aggregate Limit, the **Named Insureds** and all other **Insureds** understand and agree that prior to filing a **Claim** under the Policy, the Policy Aggregate Limit may be exhausted or reduced by prior payments for other **Claims** under the Policy.

S. **Sole Agent** - the person or entity named in Item 1 of the Declarations, or **EPA** or **DTSC** in the event they have assumed the rights of **Named Insured** pursuant to Paragraph O. of this Section VI., "Work Takeover," shall act on behalf of all other **Insureds**, if any, for the payment or return of any premium,

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payment of any deductible, receipt and acceptance of any endorsement issued to form a part of this Policy, giving and receiving notice of cancellation or nonrenewal, and the exercise of the rights provided in the **Extended Reporting Period** clause.

T. **Authorship** The Company and the **Named Insureds** agree that this Policy reflects the joint drafting efforts of the Company and the **Named Insureds.** In the event any dispute, disagreement or controversy arises regarding this agreement, the Company and the **Named Insureds agree that they** shall be considered joint authors and no provision shall be interpreted against the Company or the **Named Insureds** because of authorship. The Company and the **Named Insureds** also agree that they are fully informed as to the meaning and intent of this Policy and have been advised counsel in that regard.

U. **Water Sales Recoveries** - Amounts paid to the **Named Insured** as **Clean-Up Costs** under Coverage B of this Policy shall be reimbursed to the Company by payment of **Water Sales Recoveries** from the **Named Insured** to the Company. Such reimbursements shall restore the previously eroded Policy Aggregate Limit of Liability and shall not increase the Policy Aggregate Limit of Liability. The **Named Insured** shall provide the Company an annual statement, 90 days after the close of the **Named Insured's** fiscal year, detailing the amount of Water Sales Recoveries collected during the **Named Insured's** preceding fiscal year.

V. **Choice of Forum** – The **Insured** and the Company agree that the United States District Court for the Central District of California shall be the forum for any litigation, arbitration or other form of formal dispute resolution concerning the meaning, interpretation or operation of any term, condition, definition or provision of this Policy or the fulfillment by the **Insured** or the Company of any obligations with respect to the Policy.

VII. EXTENDED REPORTING PERIOD FOR CLAIMS - COVERAGE A

The **Named Insured** shall be entitled to an Automatic Extended Reporting Period for Coverage A upon termination of coverage as defined below in this Section VII. The Automatic Extended Reporting Period shall not reinstate or increase any of the limits of liability of this Policy.

Provided that the **Named Insured** has not purchased any other insurance to replace this insurance and which applies to a **Claim** otherwise covered hereunder, the **Named Insured** shall have the right to the following: a period of one hundred and eighty sixty (180) days following the effective date of such termination of coverage in which to provide written notice to the Company of **Claims** first made and reported within the Automatic Extended Reporting Period.

A **Claim** first made and reported within the Automatic Extended Reporting Period will be deemed to have been made on the last day of the **Policy Period,** provided that the **Claim** arises from **Pollution Conditions** that commenced before the end of the **Policy Period** and is otherwise covered by this Policy.

For purposes of this provision, termination of coverage occurs at the time of cancellation or nonrenewal of this Policy by the **Named Insured** or by the Company except as provided under Condition M of Section VI above.

VIII. DEFINITIONS

A. **Anticipated Treatment Plants** means up to three new treatment plants to be initially constructed after the **Inception Date** which are materially similar in specifications to the plants described in the "Facility Table 39A" dated March 10, 2004.

B. **Bodily Injury** means physical injury, or sickness, disease, mental anguish or emotional distress, sustained by any person, including death resulting therefrom.

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C. **Claim** means a written demand received by the **Insured** seeking a remedy or alleging liability or responsibility on the part of the **Insured** for **Loss** under Coverage A.

D. **Clean-Up** means those activities, identified in the **Statement of Work** attached to and made a part of this **Consent Decree** that are performed by a **Supervising Contractor** in the execution of the **Consent Decree.**

E. **Clean-Up Costs** means:

1. With respect to Coverage A, reasonable and necessary expenses, including legal expenses incurred with the Company's written consent which consent shall not be unreasonably withheld or delayed, for the investigation, removal, remediation including associated monitoring, or disposal of soil, surfacewater, groundwater or other contamination:

   (a) To the extent required by **Environmental Laws**; or

   (b) That have been actually incurred by the government or any political subdivision of the United States of America or any state thereof, or by third parties, to the extent required by **Environmental Laws.**

   Clean-Up Costs under Coverage A also include **Restoration Costs.**

2. With respect to Coverage B, reasonable and necessary costs, charges, and expenses incurred solely for **Clean-Up**, as identified in the Definition of Clean-Up Endorsement which pursuant to the **Consent Decree** are reimbursable from the **O&M Escrow Account** or **Construction Escrow;**

3. Solely with respect to Coverages B, **Clean-Up Costs** does not include costs, charges or expenses incurred for legal services of any nature and for costs, charges or expenses litigation, arbitration or other form of dispute resolution other than arbitration in any way related to or in connection with **Clean-Up**, including fees of attorneys, consultants, investigators, adjusters and experts, unless otherwise expressly consented to in writing and in advance by the Company and specifically included in the Definition of Clean-Up Endorsement.

4. Solely with respect to Coverage B, and solely in the event **Clean-Up Costs** are incurred as the result of **Non-Routine O&M**, the **Clean-Up Costs** shall not include that portion of costs attributable to capital improvements or upgrades which exceed the requirements of the **Consent Decree** or provide benefit to the **Insured's** operations beyond the requirements of the **Consent Decree.**

F. **Clean-Up Cost Progress Reports** means reports completed by the **Insured** which summarize **Clean-Up** activities performed and anticipated to be performed and the costs and estimated costs of those activities. Except in the event the **EPA** or **DTSC** is the **Named Insured,** the form of the reports will be established by the Company and attached to this policy and must be completed by the **Insured** and submitted to the Company at the time intervals prescribed in Item ------of the Declarations. n In the event **EPA** or **DTSC** is the **Named Insured** under Coverage B, such reports shall be consistent with the reports prepared by those agencies pursuant to the **Consent Decree.**

G. **Consent Decree** means the Consent Decree entered in the Matter of The City of San Bernardino United States of America CV 96-8867(MRP) CV-5205(MRP) Consolidated dated _____.

H. **Certification or Notice of Completion** shall have the same meaning as in the **Consent Decree.**

I. **Construction Escrow Account** shall have the same meaning as in the **Consent Decree.**

J. **DTSC** means the California Department of Toxic Substances Control and any of its successor departments or agencies.

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K. **Environmental Laws** means any federal, state, provincial or local laws (including, but not limited to, statutes, rules, regulations, ordinances, guidance documents, and governmental, judicial or administrative orders and directives) that are applicable to **Pollution Conditions. Environmental Laws** shall not include any ordinance, rule, regulation, or guidance document enacted or issued by any municipal authority concerning the clean-up standards or action levels applicable to **Pollution Conditions** that are the subject of coverage under this Policy.

L. **EPA** means the United States Environmental Protection Agency and any successor departments or agencies thereto.

M. **Final Decommissioning** shall mean decommissioning of the extraction and treatment systems if done pursuant to the Consent Decree, provided that such decommissioning will result in termination of coverage B.

N. **Groundwater Model** shall have the same meaning as in the **Consent Decree.**

O. **Inception Date** means the date set forth in Item 2 of the Declarations.

P. **Insured** means the **Named Insured**, and any past or present director, official, officer, partner or employee thereof, including a temporary or leased employee, while acting within the scope of his or her duties as such.

Q. **Insured Contract** means a contract or agreement submitted to and approved by the Company, and listed on a Schedule of Insured Contracts Endorsement attached to this Policy.

R. **Insured's Products** means water treated by the **Insured** or others trading under the **Insured's** name including but not limited to potable water and includes warranties or representations made at any time with respect to the fitness, quality, durability, performance or use thereof, or the failure to provide warnings or instructions.

S. **Insured Site** means the Newmark Groundwater Contamination Site as listed by the **EPA** on the National Priority List set forth in 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 31, 1989, 54 Fed. Reg. 13296, 13301.

T. **Lead Oversight Agency** means the **EPA** or the **DTSC** or any other entity named as the Lead Oversight Agency under the terms of the **Consent Decree.**

U. **Loss** means, under the applicable Coverages: 1. monetary awards or settlements of compensatory damages for **Bodily Injury** or **Property Damage**; 2. costs, charges and expenses incurred in the defense, investigation or adjustment of **Claims** for such compensatory damages or for **Clean-Up Costs**; or 3. **Clean-Up Costs.**

V. **Microbial Matter** means fungi, bacterial or viral matter which reproduces through the release of spores or the splitting of cells or other means, including but not limited to, mold, mildew and viruses, whether or not such **Microbial Matter** is living.

W. **Muscoy Operable Unit** shall have the same meaning as in the **Consent Decree.**

X. **Named Insured** means the City of San Bernardino, California and the City of San Bernardino Municipal Water Department, including any of their divisions, departments , agencies or other subdivisions, and any successors thereto or, solely with respect to Coverage B and subject to Paragraph O. of Section VI. of this Policy, "Work Takeover," the **EPA** or **DTSC.**

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Y. **Natural Resource Damage** means physical injury to or destruction of, including the resulting loss of value of, land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the fishery conservation zone established by the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)), any state or local government, any foreign government, any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe.

Z. **Newmark Operable Unit** shall have the same meaning as in the **Consent Decree.**

AA. **Non-Routine O&M** shall have the same meaning as in the **Consent Decree** and the **Statement of Work.**

BB. **O&M Escrow Account** shall have the same meaning as in the **Consent Decree.**

CC. **Oversight Costs** shall have the same meaning as in the **Consent Decree.**

DD. **Policy Period** the period set forth in Item 2 of the Declarations, or any shorter period arising as a result of cancellation of this Policy.

EE. **Pollution Conditions** means the discharge, dispersal, release or escape of any solid, liquid, gaseous or thermal irritant or contaminant, including, but not limited to, smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, medical waste and waste materials into or upon land, or any structure on land, the atmosphere or any watercourse or body of water, including groundwater, provided such conditions are not naturally present in the environment in the amounts or concentrations discovered which are required to be addressed pursuant to the **Consent Decree. Pollution Conditions** shall not include **Microbial Matter.**

FF. **Professional Services** means those architectural, engineering, consulting, project management or construction management services that are performed for a fee by the **Named Insured** or the **Supervising Contractor.**

GG. **Property Damage** means:

1. physical injury to or destruction of tangible property of parties other than the **Insured**, including the resulting loss of use and diminution in value thereof;

2. Loss of use, but not diminution in value, of tangible property of parties other than the **Insured** that has not been physically injured or destroyed;

Property Damage does not include **Clean-Up Costs.**

HH. **Proportionate Production Costs** shall mean the amount calculated as follows: On a retrospective annual basis, corresponding to the **Named Insured's** fiscal year, the **Named Insured** shall calculate the proportion that its production costs bore to reimbursable **Clean-Up Costs** paid under this Policy for the volume of water sold to other water agencies in the prior fiscal year and;

1) If revenue from such sales on an annual basis is sufficient to cover, for this volume of water, both the **Clean-up Costs** reimbursable under this policy and the **Named Insured's** unreimbursable production costs, then the **Proportionate Production Costs** shall be calculated as all production costs (including but not limited to boosting costs) incurred in connection with the volume of water sold.

2) If revenue from such sales on an annual basis is insufficient to cover, for this volume of water, both the **Clean-up Costs** reimbursable under this policy and the **Named Insured's** unreimbursable production costs (including but not limited to boosting costs), then the **Proportionate Production**

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Costs shall be calculated as the proportion production costs bore to reimbursable **Clean-Up Costs** paid under this Policy for the volume of water sold to other water agencies in the prior fiscal year.

II. **Responsible Insured** means the General Manager and Deputy General Manager of the City of San Bernardino Municipal Water Department.

JJ. **Restoration Costs** means reasonable and necessary costs incurred by the **Insured** with the Company's written consent, which consent shall not be unreasonably withheld or delayed, to repair, replace or restore real or personal property to substantially the same condition it was in prior to being damaged during work performed in the course of incurring **Clean-Up Costs.** However, such **Restoration Costs** shall not exceed the net present value of such property prior to incurring **Clean-Up Costs. Restoration Costs** do not include costs associated with improvements or betterments.

KK. **Statement of Work shall** mean the **Statement of Work** developed in accordance with and made part of the **Consent Decree.**

LL. **Supervising Contractor** means the contractor approved by the Company and scheduled on the Definition of Scheduled Contractor Endorsement or, in the event the **Named Insured** is **EPA** or **DTSC,** any contractor performing **Clean-Up.**

MM. **Support Oversight Agency** shall have the same meaning as in the **Consent Decree.**

NN. **Termination Date** means, with respect to Coverages B:

(a) The ending date of the period set forth in Item 2 of the Declarations;

(b) The date the Limit of Liability shown in Item 3 of the Declarations is exhausted;

(c) The date the **Insured** receives written confirmation of final **Certification or Notification of Completion;** or

(d) Cancellation of the Policy pursuant to Section VI., Paragraph G.

The **Termination Date** shall not be extended by the exercise of any rights held by the **Lead Oversight Agency** or any other governmental entity or quasi-governmental entity to reopen, reconsider or otherwise cause the **Insured** to perform **Clean-Up** after the Insured has received notification of final **Certification or Notification of Completion.**

OO. **Treatment Waste Transportation** means the transportation of waste materials from the **Muscoy Operable Unit and Newmark Operable Unit** generated at those operable units in the course of satisfying the **Consent Decree** which are transported by a third party licensed to transport such waste materials from the **Muscoy Operable Unit and Newmark Operable Unit,** including the loading and offloading of such waste.

PP. **Water Sales Recoveries.** As provided in section III.B.2.c), pp. 18-19 of the **Statement of Work** and paragraph 17.c.2 of the **Consent Decree,** shall mean annual water sales revenues generated by the **Named Insured** over its fiscal year for sales to other water agencies as a result of operations of facilities that are the subject of the **Consent Decree** after deduction of the **Proportionate Production Costs** incurred by the **Named Insured.**

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IN WITNESS WHEREOF, the Company has caused this Policy to be signed by its president and secretary and signed on the Declarations page by a duly authorized representative or countersigned in states where applicable.

Elizabeth M. Tuck, Secretary

Kevin Kelley, President

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Chapter 13.25
SPREADING OR EXTRACTION WITHIN THE MANAGEMENT ZONE

13.25.010 Purpose.

The purpose of this Chapter is to assure that activities occurring in the Management Zone, including but not limited to development, digging, drilling, boring or reconstruction of wells, extraction of groundwater from wells and spreading of water do not interfere with or cause pass through of contaminants from the Newmark and Muscoy Operable Units. Activities undertaken in the Management Zone shall not cause or contribute to the migration of groundwater contaminants from the Newmark and Muscoy Operable Units to uncontaminated areas.

It is the further purpose of this chapter to assure the protection of human health and the environment, and compliance with relevant Federal and State requirements directly associated with the performance of the remedy.

It is the further purpose of this chapter to manage the spreading of water within the Management Zone and manage the development, digging, drilling, boring, reconstruction of wells, and extraction of groundwater from wells, to assure compliance with the remedial program set forth in the RODs, Consent Decree and Statement of Work, as defined below and aid in the eventual restoration of the aquifer to beneficial use.

It is the further intent of this Chapter to regulate activities within the Management Zone only to the extent necessary to achieve the purposes set forth and to minimize the regulatory impacts to those intending to spread water or develop groundwater resources in the Management Zone.

In addition to any other requirements of Chapter 13.25, the following requirements shall apply to the Management Zone. Nothing contained herein shall exclude compliance with the other provisions of Chapter 13.25. In the event of any conflict between the provisions of this Chapter 13.25 and any other Chapter, the terms and provisions of this Chapter shall apply.

13.25.015 Background Pertaining to Newmark Groundwater Contamination Superfund Site.

Background.

A. In 1980 the State of California performed sampling of certain wells belonging to the City of San Bernardino Municipal Water Department ("SBMWD"). These samples disclosed the presence of various contaminants, including trichloroethylene (TCE) and perchloroethylene (PCE).

B. Pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 USC 9605, the United States Environmental Protection Agency ("EPA") placed the Newmark Groundwater Contamination Superfund Site ("Site") on

the National Priorities List ("NPL"), as set forth in 40 CFR Part 300, Appendix B, by publication in the Federal Register on March 31, 1989, 54 Fed. Reg. 13296, 13301.

C. In late 1990, EPA commenced a Remedial Investigation ("RI") focusing on the Newmark Operable Unit ("OU"). In September 1992, EPA expanded the RI to include the Muscoy OU.

D. In March 1993, EPA published notice of the completion of the Feasibility Study ("FS") and the Proposed Plan for interim remedial action pertaining to the Newmark OU. In December 1994, EPA published notice of the completion of the FS and Proposed Plan for interim remedial action pertaining to the Muscoy OU.

E. EPA's determination concerning the interim remedial actions to be implemented at the Site are set forth in the Newmark OU Record of Decision ("ROD"), signed August 4, 1993, and Muscoy ROD signed March 24 1995 and the Explanation of Significant Differences (ESD) signed on _____, 2004.

F. On September 18, 1995, EPA, the State of California and SBMWD entered into a Cooperative Agreement providing, in part, for SBMWD to perform the operation and maintenance (O&M) of the remedial action set forth in the RODs, and for EPA to fund the O&M.

G. In September 1996, the SBMWD commenced an action against the United States Army pursuant to Section 107 and 113 of CERCLA seeking to obtain its costs for response and the operation and maintenance of the Newmark and Muscoy OUs.

H. Commencing in June 2000, SBMWD, State of California Department of Toxic Substance Control ("DTSC") and EPA commenced negotiations to resolve various issues relating to Site OU, Newmark OU and Muscoy OU. On _____, the Consent Decree memorializing the settlement was entered by the Court .

I. The Consent Decree requires, in part, for the City of San Bernardino (City)to implement an ordinance providing for protection and management of the Interim Remedy set forth in the RODs and ESD and specifically for the City to regulate the spreading and extraction of water from the Bunker Hill Basin within the City in order to prevent or correct spreading practices or extraction operations that could interfere with or interrupt or degrade the performance of the Interim Remedy.

J. The protection of groundwater resources within the City is of utmost importance to the City and SBMWD. The public health, safety and general welfare of the people of the State of California and of the more than 600,000 residents of the Counties of San Bernardino and Riverside who depend upon the continued availability of potable groundwater from the Bunker Hill Basin is paramount. The public health, safety and general welfare of the people of the State of California and the residents of the City of San Bernardino require assurance that spreading of water and extraction of groundwater do not interrupt or interfere with the construction, operation and maintenance of the Interim Remedy or degrade the performance of the Interim Remedy.

K. The Interim Remedy requires, in part, the extraction of contaminated groundwater from the Bunker Hill Water Basin, and within the Newmark and Muscoy OUs, and treatment of the

groundwater to meet all State and federal permits and requirements for drinking water and delivery of treated water to SBMWD for distribution to the public through its potable water system, or in the alternative, ~~to~~ for recharge to the aquifer.

L. Inhibitor wells extract groundwater. The inhibitor wells are located at the downgradient end of the Management Zone. The inhibitor wells currently in place were designed to function based upon hydrological factors relating to the flow of water through the basin. The rate of flow through the basin may increase when additional spreading occurs at spreading basins located upgradient from the inhibitor wells. Another factor affecting flow rate is the amount of water flowing through the basin and either extracted or flowing out of the basin. When extraction of groundwater occurs downgradient or to the side of Management Zone, or the capacity of existing downgradient or adjacent wells are increased, the rate of flow may increase. Should an increase in the flow of water occur beyond the capacity of the inhibitor wells, the inhibitor wells may not be able to contain and extract the additional contaminated water before it enters the aquifer downgradient from the inhibitor wells.

M. As required by the Consent Decree, the City must exercise its police power to protect the public welfare of the City by adopting reasonable regulatory measures.

13.25.020 Definitions.

A. "Applicant": The person or entity submitting the application addressed in this chapter. The term "Applicant" shall also include the person or entity granted any permit or permission pursuant to the terms of this chapter, and shall also include all licensees, lessees, agents, contractors, operators, employees, officers, directors, representatives, attorneys, successors, assigns, heirs and other persons or entities exercising the rights of the permit through applicant.

B. "Aquifer": A geologic formation that stores, transmits and yields significant quantities of water to wells and springs.

C. "Barrier well": See "Inhibitor well" below.

D. "Basin": The Bunker Hill Basin.

E. "City": The City of San Bernardino.

F. "Code": The San Bernardino Municipal Code.

G. "Contamination" means any impairment in the quality of water of the City by wastes or other degrading elements in amounts or concentrations violating any federal or state drinking water standard or applicable permit limit for the water produced by the Interim Remedy, or otherwise..

H. "Day" means a calendar day.

I. "Department" means the San Bernardino Municipal Water Department.

J. "DOHS": State of California Department of Health Services.

K. "DTSC": State of California Department of Toxic Substance Control.

L. "EPA": The United States Environmental Protection Agency.

M. "Extraction": The process of taking water from the groundwater aquifer by way of wells and other appurtenances.

N. "FS": The Feasibility Studies performed by EPA for the Site and completed in _____,1992 and December 1994.

O. "General Manager" means the San Bernardino Municipal Water Department General Manager or designee.

P. "Groundwater": All water beneath the surface of the earth within the zone below the water table in which the soil is saturated with water.

Q. "Inhibitor Well": The wells designed by EPA for the extraction of water from specific areas of the basin and identified in the RODs.

R. "Management Zone": The geographic area depicted and defined on Exhibit "A" and Exhibit "B", on file in the office of the General Manager of SBMWD.

S. "Model" means the mathematical calculations required to be produced pursuant to the Consent Decree and SOW addressing the physical characteristics of the groundwater in the Bunker Hill Basin under various conditions.

T. "NPL": National Priorities List.

U. "OU": Operable Unit.

V. "Person": Any state or local government agency, private corporation, firm, partnership, individual, group of individuals, organization, association, or to the extent authorized by law, any federal agency.

W. "RI": The Remedial Investigations performed at the Site for the Newmark Operable Unit and the Muscoy Operable Unit.

X. "Record of Decision" or "ROD": The Records of Decision prepared by EPA for the Site setting forth the provisions of the Interim Remedy to be implemented in addressing the contamination identified in RI/FS.

Y. "Remedy" or "Interim Remedy": The course of action set forth in the RODs, Statement of Work (SOW), and Consent Decree (CD) relating to the operation and maintenance of the remedial action specified in said documents.

Z. "RODs": The Record of Decision for the Newmark Operable Unit signed August 4, 1993 and the Record of Decision for the Muscoy Operable Unit signed March 24, 1995.

AA. "SBMWD": The San Bernardino Municipal Water Department.

BB. "Site": The Newmark Groundwater Contamination site identified in 40 CFR Part 3rd Appendix B, published in the Federal Register on March 31, 1989, 54 Fed.Reg. 13296, 13301.

CC. "Spreading Basin": Areas, facilities and portions of land set aside for the deposit of water with the intent to allow the water to percolate into the groundwater basin, as depicted on Exhibit "C", attached hereto and incorporated by this reference and on file in the office of the General Manager of SBMWD.

DD. "Statement of Work" (SOW): The document incorporated into the Consent Decree, referenced in Section 13.25.015 H., setting forth the implementation of the remedial action to be performed by SBMWD, EPA and DTSC relating to the Newmark OU and Muscoy OU.

EE. "Well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into the ground. This definition shall not include:

1. Oil or gas wells, or geothermal wells constructed under the jurisdiction of the California State Department of Conservation, except those wells converted to use as water wells; or

2. Wells used for the purpose of:

   a. Dewatering excavation during construction, or
   b. Stabilizing hillsides or earth embankments.

13.25.025 Permits.

A. Spreading. Unless a permit issued by SBMWD pursuant to this Chapter is first obtained, it shall be unlawful for any person, as principal, agent or employee, to spread water within the Management Zone.

B. Groundwater Extraction. Unless a permit issued by SBMWD pursuant to this Chapter is first obtained, it shall be unlawful for any person to develop, dig, drill, re-equip or reconstruct a well, or to operate an existing well at an extraction rate or volume above the 2002 rated capacity of that well, or to allow the development, digging, drilling, re-equipping or reconstruction of a well on land located within the Management Zone.

If repairs to existing wells, including the replacement of an existing motor or bowl assemblies, do not increase the rated capacity of the well above the rated capacity as it existed in the year 2002, such repairs shall not require a permit, but notice of such activity shall be given at least ten (10) days in advance to SBMWD, unless emergency conditions require a faster response, in which case notice shall be given to SBMWD as soon as practical.

C. Application for Permit. An application for a permit shall be filed by the landowner or Applicant with the SBMWD on a form provided by SBMWD. Applicant has an affirmative duty to provide accurate representations of all material facts in the application.

D. Contents of Application for Permit for Extraction. The contents of the Application for Permit for Extraction shall include, as a minimum, all of the items set forth in Section 13.24.250 and the elevations of proposed screening intervals, and such other information as SBMWD determines necessary and appropriate to evaluate the application and assure that the proposed extraction will not interfere with, compromise, endanger or detrimentally affect the Interim Remedy or otherwise cause or contribute to the movement of contaminants to areas downgradient of the Inhibitor Wells.

E. Contents of Application for Permit for Spreading. The contents of the Application for Permit for Spreading shall include, as a minimum, the name of the person proposing to conduct the spreading, the time period over which the spreading is proposed to occur, the volume, location and such other information as SBMWD may determine necessary and appropriate to evaluate the application and assure the proposed spreading will not interfere with, compromise, endanger or detrimentally affect the Interim Remedy or otherwise cause or contribute to the movement of contaminants to areas downgradient of the Inhibitor Wells..

F. Fees. SBMWD may levy a fee for review of the Application for Permit and monitoring of compliance with the permit. The fee shall be established by resolution of the SBMWD Board of Water Commissioners.

G. Review of Application.

1. The review process of the application will commence when SBMWD determines it has received from the Applicant all documents and necessary information to commence its review.

2. Subject to timely participation by EPA and DTSC, SBMWD shall endeavor to complete the review within One Hundred Twenty (120) days from Notice by SBMWD to Applicant that the application is deemed complete.

3. The completed application shall be subject to review and comment by the EPA and DTSC. SBMWD shall provide to EPA and DTSC a copy of its proposed decision, after which EPA and DTSC, pursuant to the Consent Decree, shall have a minimum of thirty (30) days to comment on the proposed decision. If either EPA or DTSC object in writing to the permit application, proposed decision or modeling work on which a proposed permit decision is based, the SBMWD, EPA and DTSC, shall consult for up to sixty (60) days in order to resolve any material differences among them over such matters. Consistent with the Consent Decree, the SBMWD shall not issue a permit over the unresolved objections of either EPA or DTSC.

13.25.035 Approval of Permits.

A. Standard of Review. A permit may be granted for a period of three years with or without conditions under the provisions of this chapter only if the Applicant demonstrates that the proposed extraction or spreading and method of operation will not interfere with, compromise, endanger or detrimentally affect the Interim Remedy, or cause the City to be in potential violation or non-conformance with the SOW, Consent Decree or RODs, or EPA or DTSC approved plans adopted thereunder.

1. Prior to the completion of an updated Model the Applicant shall bear the burden of demonstrating through the use of engineering and other satisfactory scientific data that the proposed extraction or spreading will not interfere with, compromise, endanger or detrimentally affect the Interim Remedy.

2. After an updated Model has been completed, the Applicant shall bear the burden of demonstrating through the use of the Model and other satisfactory scientific evidence that the proposed extraction or spreading will not interfere with, compromise, endanger or detrimentally affect the Interim Remedy.

B. Conditions of Approval.

1. In the event the application is approved, EPA, DTSC and SBMWD shall have the right to condition approval upon mitigation or remedial activities to be performed by Applicant. EPA, DTSC or SBMWD may require Applicant to prepare a mitigation or remedial plan subject to approval by EPA, DTSC and SBMWD prior to issuance of the permit.

2. If mitigation or remedial activities are required as a condition of the issuance of a permit, SBMWD may require Applicant to post a bond of sufficient value to assure compliance with the mitigation or remedial activities.

3. Upon approval of the application, with or without mitigation or remedial activities, and after the posting of a bond, if required, SBMWD shall issue a permit.

4. The approval and issuance of a permit shall be subject at all times to the monitoring of Applicant's activities and suspension or revocation of the permit if it is determined by SBMWD, EPA or DTSC that Applicant's activities interfere with, compromise, endanger or detrimentally affect the Interim Remedy.

5. The issuance of a permit shall be conditioned on the grant to EPA, DTSC and the City, including SBMWD, their contractors and representatives, of access to the wells or spreading basins or related areas for the purpose of verifying compliance with the permit, and upon reasonable notice to inspect and copy documents and records of Applicant's operations of the permitted facilities.

6. Insurance.

a. As a condition of the issuance of a permit, Applicant shall provide to SBMWD a certificate of insurance naming SBMWD, the City of San Bernardino, EPA and DTSC as additional insured for pollution, contamination and general liability in an amount of not less than Twenty Five Million Dollars ($25,000,000.00).

b. Applicant shall cause to be provided To SBMWD, EPA and DTSC at least thirty days written notice from any carrier proposing a change in the terms or conditions of the insurance, including any changes in coverage, amounts of coverage or cancellation of insurance. The failure to have insurance in effect shall automatically terminate the permit.

7. Misrepresentation or failure to disclose material facts in the application.

C. Denial of Application. SBMWD shall deny the application if it determines that the standards of this Chapter have not been attained or if either SBMWD, EPA or DTSC determines that the proposed project will interfere with, compromise, endanger or detrimentally affect the Interim Remedy, or cause the City to be in potential violation or non-conformance with the SOW, Consent Decree or RODs, or any plan approved by EPA or DTSC in order to implement those documents. SBMWD shall provide to Applicant a copy of the written objections made together with any additional written statement of reasons by EPA, DTSC and/or SBMWD for disapproval of the permit. An Applicant denied a permit may appeal the decision pursuant to Section 13.25.055.

13.25.040 Reporting

A condition of each and every permit shall be the requirement that the Applicant provide, at least quarterly, regular written reports to SBMWD of water levels, chemistry and other information affecting water quality deemed appropriate by SBMWD. The SBMWD may specify forms for such reports and such forms shall be used by Applicant to comply with the provisions of this section. Such reports shall require Applicant to perform monitoring, sampling and record keeping of any wells that are the subject of the permit, including the amount, rate and timing of extraction or spreading and the quality of water being extracted or spread, including, but not limited to, concentrations of perchloroethylene (PCE), Trichloroethylene (TCE), freon and other water quality related concentrations specified by SBMWD. Upon receipt of any report requested or required by this chapter, SBMWD may require a follow-up report of additional data and/or information.

Applicant shall keep records of all activities relating to the operation of wells and/or spreading activities, including all sampling results and flow data. Such records shall be available for inspection and copying by SBMWD, EPA and DTSC upon forty eight (48) hours notice. These records shall be maintained for a period of not less than five (5) years. The period for retention of records shall automatically be extended for any period of litigation between SBMWD, the City of San Bernardino, EPA and/or DTSC and Applicant.

13.25.045 Revocation.

A. If there is an immediate and serious threat to the Interim Remedy, and its performance in accordance with the SOW, Consent Decree or RODs, and if SBMWD believes it may be due in whole or in part to Applicant's operations, SBMWD may order Applicant to cease or reduce its operations and show cause why the permit should not be revoked, modified or restricted.

B. In addition to the provisions set forth above, the permit may be revoked upon the determination of the SBMWD General Manager of any of the following:

1. Misrepresentation or failure to disclose material facts in the application.

2. Falsifying or making misrepresentations on any reports submitted to SBMWD, whether as part of the application, as a condition of the permit or as submitted voluntarily by the Applicant.

3. Tampering with monitoring equipment subject to the permit.

4. Refusing or obstructing SBMWD or its designee, or EPA or DTSC, or their designees timely access to the permitted sites and operations, and records of those operations.

5. Failure to pay fines.

6. Failure to meet compliance schedules.

7. Failure to file timely reports or to respond to requests for reports, sampling data, monitoring activities or cooperation with the Interim Remedy for the Newmark Superfund Site.

8. A material change of conditions.

C. In the event the activities of the Applicant, or Applicant's agents, contractors, licensees, lessees or employees are deemed by SBMWD to interfere with, compromise, endanger or detrimentally affect the Interim Remedy, SBMWD may revoke or suspend the permit and compel Applicant to cease all activities covered by the permit until either a hearing is held before the Board of Water Commissioners pursuant to Section 13.025.060 below for Applicant to demonstrate why the permit should not be modified or revoked, or Applicant and the General Manager reach a mutually acceptable resolution. In all other circumstances, Applicant shall be advised in writing of any non-compliance with the permit or other condition that may warrant a modification of permit conditions or revocation of the permit, and Applicant shall be afforded the opportunity for a hearing before the Board of Water Commissioners pursuant to the provisions of Subparagraph F below to present any evidence as to why the permit should not be modified or revoked.

13.025.050 <u>Consent Orders</u>

The SBMWD may enter into consent orders, assurances of voluntary compliance, or similar arrangements establishing an agreement with any Applicant responsible for non-compliance. Such arrangement will include specific action to be taken by the applicant to correct any non-compliance and shall be enforceable in a court of competent jurisdiction.

13.025.055. Cease and Desist Orders

If SBMWD finds that an Applicant has violated any provision of this chapter, or the permit, or the Applicant's activities pose an immediate and serious threat to the Interim Remedy, and that it is likely the Applicant will continue with such violation or detrimental activities, SBMWD may issue an administrative order to the Applicant to cease and desist and take all necessary and immediate action to comply. If Applicant fails to comply with such administrative orders Applicant shall be subject to additional criminal and civil liability in addition to any civil liability applicant may be liable for prior to the cease and desist order.

13.25.060 Hearing Procedures and Appeals.

1. In the event SBMWD denies an application, imposes or materially modifies a condition of approval that is/are unacceptable to Applicant, or suspends or revokes a permit, an appeal may be commenced by Applicant.

2. All appeals must be filed in the office of the SBMWD General Manager within fifteen (15) days of any denial, approval with conditions, suspension or revocation. The Appeal filed with SBMWD shall include the name of the Applicant, name, address and telephone number of the person representing applicant, Assessor's Parcel Number (APN) or other description of property involved, any identifying case number or application number issued by SBMWD; the basis for the appeal, the date and signature of the Applicant.

3. All appeals shall be heard by the SBMWD Board of Water Commissioners during their regular meetings. The burden of proof at such hearing shall be upon the Applicant. Following the hearing the Board of Water Commissioners shall issue its decision. Said decision shall be deemed a final administrative decision. Upon rendition of any adjudicatory administrative decision by the SBMWD Board of Water Commissioners, notice shall be given to the parties that the time within which judicial review must be sought is governed by the provisions of Section 1094.6 of the California Code of Civil Procedure

4. Any issue relating to the Consent Decree or SOW may, at the discretion of the SBMWD, be adjudicated in the United States District Court for the Central District of California, including the right of the SBMWD to remove any action initially brought in a California trial court.

13.25.070 Violations, Remedies and Penalties.

1. Any person violating any provision of this chapter or any condition of a permit shall be guilty of a misdemeanor, punishable by a fine not exceeding $5,000.00 per violation, and/or by imprisonment not exceeding six months for each violation. Each day a violation occurs shall be deemed a separate violation.

2. Not withstanding anything to the contrary contained herein, and in addition to any other penalties, fines or other action, the SBMWD Board of Water Commissioners may order the payment of damages and civil penalties not to exceed $10,000.00 per day and actual damages for any violation of any provision of this chapter. Said penalties shall be deemed to be civil penalties and may be imposed in addition to any criminal penalties.

3. In the event of any violation of any provision of this section, and in addition to any other remedies, at the sole and exclusive discretion of SBMWD, the permit may be revoked.

4. A violation of any provision of this ordinance or any permit provision or condition shall be deemed to be a public nuisance.

NEWMARK GROUNDWATER CONTAMINATION
SUPERFUND SITE
San Bernardino, CA

EXPLANATION OF SIGNIFICANT DIFFERENCES

to 1993 and 1995 Interim Records of Decision:
Newmark and Muscoy Operable Units

2004

1. INTRODUCTION

In September 1993 and 1995, the United States Environmental Protection Agency ("EPA") issued two Interim Records of Decision ("RODs") addressing contamination at two groundwater operable units ("OU") of the Newmark Groundwater Contamination Superfund Site in the City of San Bernardino, California ("the City"). The Newmark ROD, executed on August 4, 1993, requires extraction of contaminated groundwater from the Newmark OU, treatment of the contaminated groundwater to meet the ROD treatment goals, and delivery of the treated groundwater to the City for distribution to the public through its potable water supply system, or the water will be recharged to the aquifer. The Muscoy ROD, which set similar requirements, was executed on March 24, 1995.

EPA is issuing this Explanation of Significant Differences ("ESD") to provide notice of modifications to the 1993 and 1995 Interim RODs, which do not fundamentally affect the selected interim remedial actions. The purpose of the ESD is to supplement the existing RODs with an Institutional Control ("IC") program to assure that the Newmark and Muscoy extraction and treatment systems remain effective in meeting the objectives of capturing contaminated groundwater and inhibiting the migration of groundwater contamination into clean portions of the aquifer. The ICs to be implemented under this ESD are to protect and enhance the barrier

well system established pursuant to the Newmark and Muscoy RODs, and are an essential and integral component of the interim remedies for the Newmark and Muscoy OUs. The ESD requires a groundwater management program mandating that the installation of new wells, or operation of spreading basins that might impact the barrier wells, be conducted pursuant to a permit or other control mechanism. In settlement negotiations with the City, which accepts the treated water from both OUs into its potable water supply, the City has offered to adopt an ordinance or other groundwater management plan that will implement the requirements of this ESD within the City limits.

EPA is issuing this Explanation of Significant Differences to satisfy its responsibilities under CERCLA Section 117(c) and NCP Section 300.435(c)(2)(i). This ESD and any comments regarding this ESD will become part of the Administrative Record for this site pursuant to NCP Section 300.825(a)(2). Copies of the Administrative Record are available for review at the following locations:

The San Bernardino County Public Library
104 W. Fourth Street
San Bernardino, CA 92415
(909) 387-5718

San Bernardino Valley Municipal Water District Office
1350 S. "E" Street
San Bernardino, CA 92412
(909) 387-9211

EPA Region 9 Superfund Records Center
95 Hawthorne Street - Suite 403S
San Francisco, California 94105
(415) 536-2000

If additional information becomes available, EPA will revise the Administrative Record to reflect such material.

II BACKGROUND

The Newmark Groundwater Contamination Superfund Site includes three OUs: the Newmark and Muscoy OUs are located within the San Bernardino portion of the Bunker Hill Basin, near the Shandin Hills, and the Source OU is generally located in the area northwest of the Shandin Hills (see site map in Figure 1, page 9). The Newmark Groundwater Contamination Superfund Site covers approximately eight square miles of groundwater contaminated with volatile organic compounds ("VOCs"), including perchloroethylene ("PCE") and trichloroethylene ("TCE"). These chemicals are industrial solvents that have been commonly used for a variety of purposes including dry cleaning, metal plating and machinery degreasing.

The following provides a brief background of the Newmark Groundwater Contamination Superfund Site and the 1993 and 1995 Interim RODs. Additional background information can be found in the 1993 and 1995 Interim RODs and corresponding Administrative Records.

B. Site Background and Description

In the 1980's, the State of California sampled water produced from certain City wells and detected contamination from VOCs, including PCE and TCE, freon, decomposition byproducts from those compounds, and other contaminants. The State investigations were published in 1986 and 1989, and identified the Newmark and Muscoy contamination plumes.

The California Department of Toxic Substances Control ("DTSC") and the Santa Ana Regional Water Quality Control Board ("RWQCB") found that the Newmark and Muscoy plumes constituted an ongoing release of hazardous substances and an emergency threatening

public health and the environment. DTSC made these findings in a determination issued by DTSC during the 1980's, pursuant to California law.

On October 30, 1986, DTSC contracted with the City to construct, operate and maintain four treatment systems consisting of air stripping and liquid granular activated carbon units located at the Newmark wellfield and elsewhere, and DTSC and its assigned remedial project manager directed and oversaw the City's work on the design, construction, operation and maintenance of those treatment systems. DTSC paid for the design and construction of these four treatment systems and appurtenant facilities at the Newmark wellfield. The City has paid for, and continues to pay for, the operation and maintenance of these treatment systems, and the City paid for and constructed appurtenant storage and distribution facilities needed to accommodate these treatment systems.

EPA placed the Newmark Groundwater Contamination Superfund Site on the National Priorities List ("NPL") in March 1989. In 1990, EPA began the Remedial Investigation ("RI") and the Feasibility Study ("FS") of the Newmark OU. For the Newmark RI, monitoring wells were drilled and sampled in the Newmark OU, and nearby City and State wells were also sampled by EPA. PCE and TCE were found in all of the affected wells. The FS evaluated a range of cleanup alternatives for addressing the five-mile long groundwater contamination plume. The RI/FS report for the Newmark OU was finalized in March 1993.

On August 4, 1993, EPA issued a ROD that identified the methods that EPA would use to contain and clean up the Newmark OU groundwater contamination. The remedy for the Newmark plume is an interim remedial action which addresses the potential public health threats from the groundwater contamination. It consists of the following features: (1) groundwater

extraction (pumping) and treatment facilities at two locations in the aquifer (the North and South Areas); (2) removal of contaminants from groundwater using liquid phase granular activated carbon filtration; and (3) the final use of treated water. Construction of the Newmark OU extraction and treatment system was completed in October, 1998, and was determined to be operational and functional in October 2000.

Additional investigation in the summer of 1992 traced the direction of the groundwater contamination flow into the western side of the Shandin Hills. Based on this information, the Newmark Groundwater Contamination Superfund Site was officially expanded in September 1992 to include the Muscoy groundwater plume, located west of the Shandin Hills, as the Muscoy OU .

EPA completed the RI/FS of possible treatment alternatives for the Muscoy groundwater contamination, and the RI/FS report for the Muscoy OU was issued in December 1994. The Muscoy OU ROD was signed on March 24, 1995. The ROD for the Muscoy groundwater contamination selects an interim remedial action focusing on preventing contamination from spreading to clean parts of the aquifer south and west of the Shandin Hills. Much of the analysis for selecting a cleanup plan for the Newmark groundwater contamination was directly applicable to the Muscoy plume. Construction of the Muscoy OU extraction and treatment system is anticipated to be completed in 2004, and the performance evaluation of the system is anticipated to be completed in 2005.

The U.S. EPA's primary objective for the 1993 and 1995 Interim RODs for the Newmark and Muscoy OUs is to withdraw, treat and dispose of contaminated groundwater, and inhibit any further spread of contamination to clean areas of the aquifer. This is being

accomplished for the Newmark and Muscoy OUs by the completion of the construction and operation of the water treatment plants and the barrier wells located along 11th and 14th Streets in San Bernardino, which are expected to remove 21,000 pounds of contaminants over the next 50 years.

The Source OU RI/FS is still being conducted with the participation of the United States Army Corps of Engineers. A ROD for the Source OU will be issued after completion of the RI/FS.

III. DESCRIPTION OF ESD

This ESD includes a modification to both the 1993 and 1995 Interim RODs for the Newmark and Muscoy OUs to require ICs within the City limits as a long term groundwater management strategy to protect the interim remedies, and to address exposure to hazardous wastes and constituents. The ICs to be imposed pursuant to the ESD are to protect the function and effectiveness of the barrier well system established pursuant to the Newmark and Muscoy RODs, and are an essential and integral component of the long term management of the interim remedies for the Newmark and Muscoy OUs. This ESD requires the implementation of a groundwater management program that will control and monitor the ability of users to extract or spread water in the area of influence to the barrier well system, to prevent interference by such extraction or spreading with the effectiveness of the barrier well system. In accordance with the ESD, the City has indicated that it will adopt an ordinance or otherwise implement a management program mandating that the installation of new wells, re-equipping of existing wells, expansion of capacity or rate of production of existing wells, or the use of spreading basins that might impact the barrier wells be conducted only pursuant to a permit, and that the applicant

for any such permit demonstrate that its operations will not detrimentally impact the remedy.

IV. SUPPORT AGENCY COMMENTS

EPA has provided State and Municipal Agencies (including DTSC, and the City of San Bernardino) an opportunity to review and comment on these changes to the 1993 and 1995 RODs. Both DTSC and the City agree that the ICs described in this ESD are appropriate.

V. STATUTORY DETERMINATIONS

This ESD requires an institutional control program to support the interim remedial actions, which affects the scope of the two Interim RODs by adding an additional protective measure to the interim remedial actions, and is significant. Because the institutional control program does not otherwise affect the scope, performance or cost of the selected interim remedial actions, the change is not fundamental. The selected interim remedial actions in the two Interim RODs remain otherwise unchanged, and will continue to meet all Applicable or Relevant and Appropriate Requirements ("ARARs") described in the Interim RODs and to be protective of human health and the environment. The interim remedial actions will continue to be cost effective.

VI. PUBLIC PARTICIPATION ACTIVITIES

Pursuant to 40 C.F.R. § 300.435(c)(2)(i), a formal public comment period is not required for an ESD to a ROD when the difference does not fundamentally alter the interim remedial actions with respect to scope, performance or cost. This ESD does not propose a fundamental change to the interim remedies in the 1993 and 1995 Interim RODs with respect to scope, performance or cost, and therefore, no formal public comment period is required. Nonetheless, EPA will make this ESD and supporting information available for public review and comment

through the Administrative Record and information repository for the Newmark Groundwater Contamination Superfund Site.

Additionally, EPA will publish in the following San Bernardino County newspapers of general circulation a notice that briefly summarizes the ESD, including the reasons for such differences, and that announces its availability for public review and comment: The Sun, The Press Enterprise, Black Voice, El Chicano, Precinct Reporter and Westside Story Newspaper. The comment period will close forty-five (45) days after publication. Thereafter, EPA will consider the comments and will determine whether any revisions to the ESD are needed.

Elizabeth Adams, Chief
Superfund Site Cleanup Branch
EPA Region 9

August 9, 2004
Date

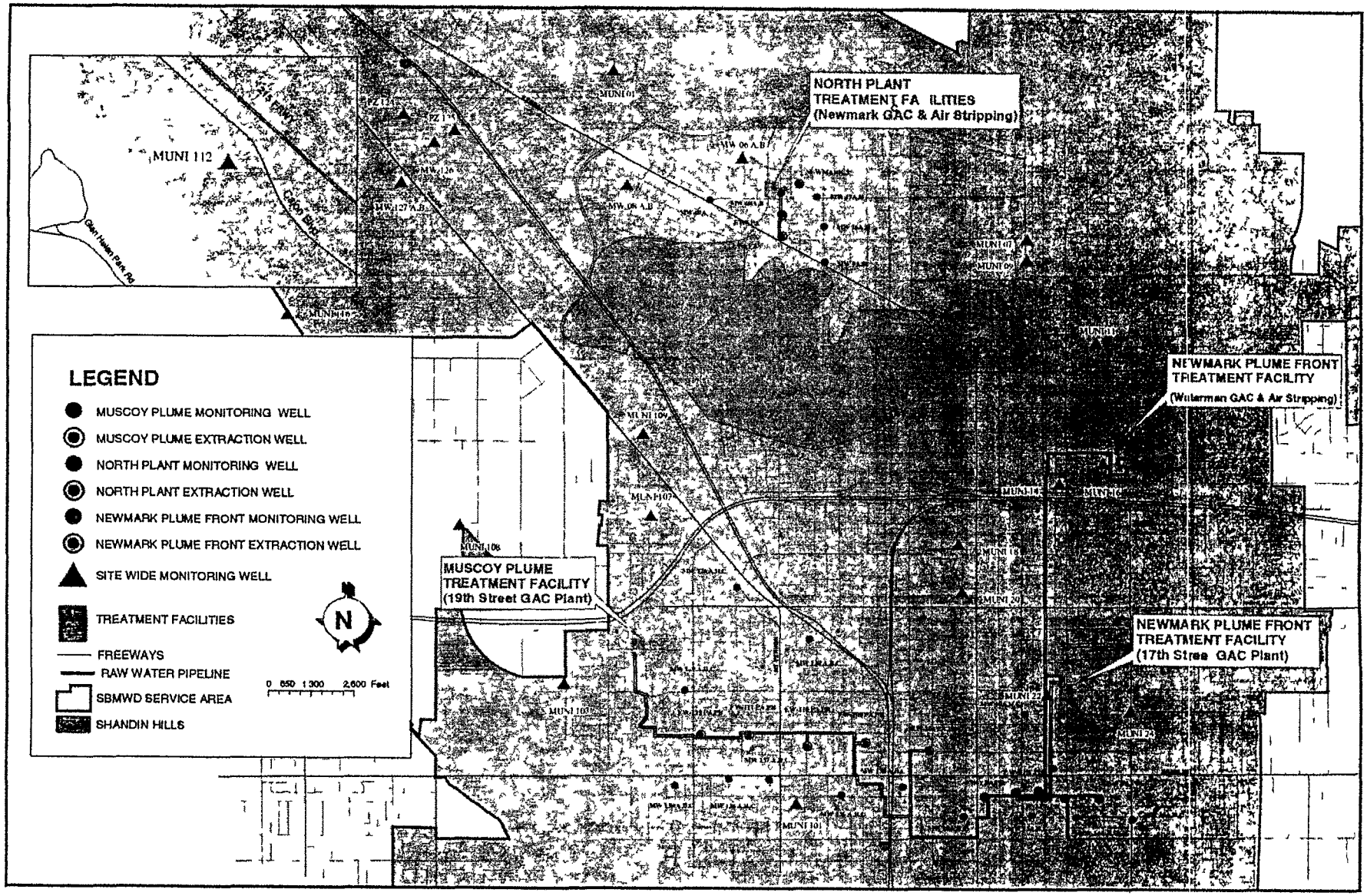

Figure 1: Newmark Groundwater Superfund Site
Extraction wells, Monitoring wells and Treatment Facilities for the Newmark and Muscoy OUs

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IN THE UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

STATE OF CALIFORNIA, on behalf of the California Department of Toxic Substances Control, Plaintiff, vs. UNITED STATES OF AMERICA, DEPARTMENT OF THE ARMY, Defendant.	No. CIV. 96-5205 MRP(JGx) STIPULATION AND PROPOSED PROTECTIVE ORDER
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT, Plaintiff,	

vs.)
)
UNITED STATES OF AMERICA,)
DEPARTMENT OF THE ARMY, and)
DOES 1 - 100, inclusive.)
)
Defendants.)
)

Pursuant to Fed. R. Civ. P. 26(c) and Local Rule 14.8 of the United States District Court for the Central District of California, the Parties, through their undersigned counsel, agree and stipulate as follows:

I. Definitions

For purposes of this stipulation,

1. "Parties" refers to the Defendant United States of America Department of the Army ("Army") and Plaintiffs State of California ("State") and City of San Bernardino Municipal Water Department ("City") collectively.

2. "Rosters" refers to unit rosters and payrolls provided to the Plaintiffs which contain the names and service numbers of Army personnel who, to the extent that the Army can determine, may have served at the location known in this litigation as Camp Ono, California, during the period from 1942 to 1947 during World War Two, Bates numbers US 4117 through US 5167.

3. "VA" refers to the Department of Veterans Affairs, and, where, appropriate, its predecessor, the "Veterans Administration", an agency of the United States government.

4. "VBA" refers to the Veterans Benefits Administration, a component of the Department of Veterans Affairs, that administers programs providing benefits to veterans and their dependents.

II. Facts

5. The City and the State seek the last known addresses or telephone numbers of the individuals identified in the Rosters ("Locating Information") because these individuals may possess information relevant to this litigation regarding contamination of the City's water supply, which the City and the State allege was caused by the Army.

6. The Army has objected to disclosing the Locating Information on the ground that it is contained in records protected by the Privacy Act, 5 U.S. C. § 552a. The City and the State disagree with this position.

7. The VBA may possess last known addresses for individuals listed on the Rosters who have applied for VA benefits in computerized records which may be retrieved by the names of the individuals, or by some other identifying numbers unique to each individual beneficiary.

8. To the extent that the VBA has such last known addresses, it obtained and maintains that information in order to deliver benefits to the named individuals.

9. The VBA does not maintain individual beneficiary telephone numbers in its automated beneficiary data bases and could only find such information by having VA employees nationwide determine where each individual beneficiary's paper

benefit claim folder is located, directing VBA employees at each of those facilities to retrieve the paper benefit claim folder for each individual beneficiary, and searching each paper benefit claim file by hand for such information. VA employees then would have to write down the telephone numbers, collate them and key them into an electronic format for delivery to the parties. Such actions would be costly, time-consuming and a significant strain on VA's limited resources.

10. The City has created computer disks containing over 9000 names and service numbers of Army personnel derived from the rosters, using the format specified by the VBA so that the VBA can use its computerized system to compare the data on the disks with its automated benefits records systems.

11. The Court may enter an order pursuant to 5 U.S.C. § 552a(b)(11) and 38 U.S.C. § 5701(b)(2) directing the VBA to provide the Parties with the last known addresses, to the extent that VBA can locate such information after a good faith search, without first obtaining the prior written consent of the individuals to whom such records pertain.

III. Stipulation

12. Using the data on the disks provided by the City, and pursuant to an order entered by the Court in this matter, the VBA shall search its automated records for the last known addresses of the individuals on the Rosters, and, to the extent that the VBA is able to locate last known addresses after a reasonable, good faith search for such information, shall disclose those

addresses within thirty days of the date that the Order contained herein is filed to the Parties on computer disks in the same format as the City used when providing disks to the VBA, together with a paper copy of the information. The disks identified herein shall be marked "PROTECTED INFORMATION-DISCLOSE ONLY IN ACCORDANCE WITH THE PROTECTIVE ORDER ISSUED BY THE COURT IN C.D. CAL. CASE NO. CV 96-5205 MRP" and upon retrieval or printout of the data from the disks, the same phrase shall appear on all copies of the disks or of printouts of the disks.

13. VBA shall not be compelled to produce information that was obtained pursuant to and is protected by 26 U.S.C. § 6103.

14. The Parties will split into three equal parts the list of names for whom the VBA can locate addresses. Within thirty days of receipt of the address list, each Party shall complete its search of its share of the list for the applicable phone numbers using public databases, and shall disclose the results of its search to the other parties within one week of completion. The phone numbers located from public sources shall not be subject to this protective order.

15. The information delivered to the Parties by VBA may be used only in direct connection with investigating the subject matter of this case, in interviewing witnesses, in locating persons with knowledge of the facts in this case, in taking depositions, in communicating with the United States Environmental Protection Agency, and in presenting testimony or motions to the Court. If it becomes necessary to file the list

or computer disks with the Court, such lists or disks shall be filed under seal until and unless the Court directs otherwise.

16. Because of the Privacy Act provisions governing the use of information gathered from the automated comparison of Federal agency automated Privacy Act-protected records with the automated records of state and local governments, 5 U.S.C. §§ 552(a)(8), (o), (p), (r) and (u), Plaintiffs will not use the names and last known addresses provided by the VBA in making any determination whether or not the individuals named in the Rosters are eligible for any federal benefit program.

17. Except as otherwise ordered by the Court, within thirty days after the conclusion of this litigation, all computer disks provided by the VA to the Parties, and all copies of those disks or printouts made from those disks or copies of those disks shall be destroyed. For purposes of this paragraph, conclusions of this litigation is defined as voluntary settlement, a dismissal with prejudice, or a decision on the merits that has become non-appealable.

18. Any Court Order entered pursuant to this stipulation will remain in effect and apply to all computer disks provided by the VA to the Parties, and to all copies of those disks or printouts made from those disks (or copies of those disks) that

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remain in the possession of any Party if this case is dismissed without prejudice.

Respectfully submitted,

Date: December 3, 1997

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Attorney for the Army

Date: _____

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Attorneys for City of San Bernardino Municipal Water Department

ORDER

Having reviewed the foregoing Stipulation and there being good cause shown therefor,

IT IS ORDERED THAT the Veterans Benefits Administration shall search its automated benefit claim records for the last known addresses of the individuals named in the Rosters in accordance with the above Stipulation between the Parties, and to the extent that the VBA is able to locate such addresses in its automated benefit claim records after a reasonable good faith search thereof, shall disclose such information to the parties under the terms and conditions specified in the above Stipulation.

IT IS FURTHER ORDERED THAT the parties to this litigation shall maintain, use and disclose such information subject to the above Stipulation only in accordance with the terms of such Stipulation. If a party wishes to otherwise use or disclose such information, that party must first obtain an order of this Court permitting such use or disclosure. Such order may be entered only upon notice to all parties and the VA, and, if requested by any party or the VA, a hearing.

DATE:_____

_____
United States District Court Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA, on behalf of the California Department of Toxic Substances Control, Plaintiff, v. UNITED STATES OF AMERICA, DEPARTMENT OF THE ARMY, Defendant.	Case No. CV 96-5205 MRP(JGx) Case No. CV 96-8867 MRP(JGx) (Consolidated) Judge: Mariana R. Pfaelzer Before: Discovery Referee Malcolm M. Lucas Chief Justice (Ret.)
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT, Plaintiff, v. UNITED STATES OF AMERICA, DEPARTMENT OF THE ARMY, et al. Defendants.	PROTECTIVE ORDER

Plaintiffs, the City of San Bernardino Municipal Water Department and the State of California, have requested the production of documents relating to the United States' chemical warfare and chemical defense activities dating back to World War II. Defendant, the United States of America, has located documents responsive to Plaintiffs' requests at the Soldier and Biological Chemical Command (SBCCOM)of the United States Department of the Army, which is located at Aberdeen Proving Grounds. Certain of these documents may contain technical information that the Army has not approved for release to the general public. Because of the United States' asserted national security concerns, the United States and plaintiffs have agreed to protect these documents from general dissemination before the documents are reviewed for public release.

Therefore, in order to expedite the production of such records consistent with the United States' claimed security concerns, and with the consent of the parties, pursuant to Federal Rule of Civil Procedure 26(c) the Discovery Referee orders that the Plaintiffs' review and use of any SBCCOM documents that have not been reviewed for public release that are produced by the United States be governed by the following conditions:

(1) This Order shall apply to documents from SBCCOM that have not yet been reviewed for public release. This Order will refer to these documents as "covered documents." Documents that have been cleared for public release are subject to no restriction under this Protective Order and are not "covered documents." To the extent that the City or State believe that documents initially deemed "covered documents" duplicate information that is already publicly available or are not technical data or are otherwise not subject to 32 C.F.R. Part 250 and should not to be considered "covered documents", the City and/or the State will provide a list of such documents to the United States after the City or State have had an opportunity to review such documents, and may periodically update such list. The United States shall have forty-five (45) days from receipt of such a list to concur or disagree with such a proposed listing. The United States reserves the right to request additional time to complete its review of such documents for good cause. Documents that have been reviewed and determined to require an export license for disclosure are not "covered documents" but are subject to the restrictions set forth in 32 C.F.R. Part 250; the Arms Export Control Act, 22 U.S.C. § 2751, et seq.; and 50 U.S.C. App. 2410, et seq.

(2) All covered documents produced pursuant to this order will contain a stamp which indicates that they are subject to a protective order, but the stamp will not stay that the documents are subject to export control laws unless and until the relevant official(s) make such a determination and relay it to the Plaintiffs in writing.

(3) Defendant will provide the covered documents to Plaintiffs' attorneys on the following schedule: one-third of the documents will be produced to the plaintiffs by June 7, 1999, and second third of the documents will be provided to the plaintiffs by June 14, and the final third of the documents will be provided to the plaintiffs by June 21, or alternatively, defendant will allow the

plaintiffs reasonable access to copy the documents onsite no later than June 7, 1999, with sufficient equipment and personnel to allow the completion of copying by June 22. Until any covered document has been reviewed for release, Plaintiffs' attorneys are authorized to disclose the covered documents only to those persons with American citizenship who are required to use covered documents to assist Plaintiffs' in preparing their cases for trial, or in conjunction with this litigation, withe exceptions noted in paragraph 8 below. Plaintiffs' attorneys must keep a list of the names of all persons who are provided access to covered documents. This list will be periodically filed under seal with Chief Justice Lucas, and released to the United States only upon a showing of good cause.

(4) Plaintiffs' attorneys and agents are permitted to use covered documents only in conjunction with this litigation and remedial work done by EPA, and discussions about the remedial work and the litigation with members of Congress, Senators, and their staffs. Plaintiffs' attorneys and agents are prohibited from using covered documents for any other purpose, including other litigation and personal use, with the exceptions noted in paragraph 8 below.

(5) Plaintiffs' attorneys and agents are permitted to discuss the contents of covered documents only in conjunction with this litigation and only to the extent it is necessary to prepare Plaintiffs' cases for trial, with the exceptions noted in paragraph 8 below. Activities considered to be in conjunction with this litigation include, but are not limited to: trial preparation, interviewing potential factual and expert witnesses, preparing factual and expert witnesses, deposing factual and expert witnesses, and motions and other documents filed with the Court and the Discovery Referee in accordance with Paragraph 10, below.

(6) Plaintiffs' attorneys and agents are prohibited from releasing any covered documents to or discussing the contents of covered documents with any person or organization (other than potential witnesses noted in paragraph 5 above that are American citizens) who is not assisting Plaintiffs' attorneys and agents in conjunction with this litigation and preparing Plaintiffs' cases for trial, including the press, with the exceptions noted in paragraph 8, below.

(7) Plaintiffs' attorneys and agents are authorized to reproduce covered documents only to the extent reproduction is necessary for Plaintiffs in conjunction with this litigation. Plaintiffs are

not permitted to release covered documents to outside companies for reproduction, unless approved, in writing, by the United States, which approval will not be unreasonably withheld or delayed. Any copy of a covered document is to be governed by the terms of this Order. The United States agrees that the City and/or State may hire a copy service to make the initial copies of the documents on site, provided that the copy service and its equipment is approved by the applicable SBCCOM document custodian, which approval shall not be unreasonably delayed or withheld in light of the June 30, 1999, deadline for the completion of factual discovery.

(8) Pursuant to 32 C.F.R. § 250.4, Plaintiffs may have unimpeded discussions with any Members of Congress, any Senators, and their respective staffs, and may submit covered documents as well as documents determined to require an expert license for disclosure as provided in paragraph 9(b) below, to these elected officials and their staffs with notice of the documents' protected status. Plaintiffs also have the right to submit covered documents as well as documents determined to require an expert license for disclosure as provided in paragraph 9(b) below, with notice of the documents' protected status, to the U.S. Environmental Protection Agency.

(9) In addition to the procedure provided in paragraph 1, above, concerning determination as to which documents contain publicly available information or are not technical data or are otherwise not subject to 32 C.F.R. Part 250, at any time during this litigation or during the course of EPA's remedial work Plaintiffs believe it is necessary to release any covered document to the general pubic or believes that it is necessary to exempt any covered document from this protective order, Plaintiffs shall request the United States to conduct a security review. The United States will review the document and determine whether the document requires an export license for disclosure. The United States shall have thirty (30) days to conduct this security review. The United States reserves the right to request additional time to complete its review of such documents for good cause.

(A) If the United States determines that any document may be released to the general public, this Order shall no longer apply to that document and the United States will

provide written authority for Plaintiffs to mark the document to indicate taht it is no longer covered by the Protective Order.

(B) If the United States determines that any document contains technical data for military critical technologies that requires an export license for disclosure, then the United States shall affix the appropriate marking to the document and provide it to the Plaintiffs pursuant to 32 C.F.R. § 250.4, and this Order shall no longer apply. Plaintiffs use of any such documents shall be governed by 32 C.F.R. Part 250; the Arms Export Control Act, 22 U.S.C. § 2751, et seq.; and/or 50 U.S.C. App. 2410, et seq. The plaintiffs retain the right to contest, before the Discovery Referee and/or the District Court, as appropriate, any determination made by the United States that a specific document or a general type of document contains technical data about militarily critical technologies and requires an export license for disclosure. Plaintiffs expressly reserve their right to contest any determination that documents related to the M-1 HC smoke pot, M-4 HC smoke pot, and M-8 HC smoke grenade, and decontaminating agent, non-corrosive (DANC), as those items were designed, manufactured, and used before and during World War II and up to 1948 are "technical data" related to "militarily critical technologies" as those terms are used under 32 C.F.R. part 250, 10 U.S.C. § 130 22 U.S.C. § 2751, et. seq., and 50 U.S.C. App. § 2401 et. seq., and their implementing regulations.

(10) If Plaintiffs believe it is necessary to file any covered document with the Court or the Discovery Referee, Plaintiffs shall file the documents under seal.

(11) Plaintiffs shall also file all exhibits to depositions consisting of covered documents under seal. The United States shall have forty-five (45) days after the date of the deposition to conduct a security review of the documents to determine whether they are subject to export control protections. The United States reserves the right to request additional time to complete its review of such documents for good cause.

(12) At the conclusion of this litigation, Plaintiffs must return any covered documents, documents that have been reviewed and determined to require an export license for disclosure, and any copies of such documents, excluding those filed with the Court or Discovery Referee under seal, to the United States. At the conclusion of this litigation any copies filed with the Discovery Referee under seal will also be returned to the United States. Plaintiffs' attorneys will be required to certify that all covered documents and copies thereof have been returned to the United States.

It is so ORDERED.

On this _____ day of June, 1999.

Hon. Malcolm M. Lucas
Chief Justice (Retired)

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