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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA – WESTERN DIVISION

CITY OF COLTON, a California municipal corporation, Plaintiff, v. AMERICAN PROMOTIONAL EVENTS, INC., et al. Defendants. AND CONSOLIDATED ACTIONS	CASE NO. ED CV 09-01864 PSG (SSx) [Consolidated with Case Nos. CV 09-6630 PSG (SSx), CV 09-06632 PSG (SSx), CV 09-07501 PSG (SSx), CV 09-07508 PSG (SSx), CV 10-824 PSG (SSx) and CV 05-01479 PSG (SSx)] **CONSENT DECREE**

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I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed, on February 4, 2010, a complaint (Case No. CV 10-0824 PSG (SSx)) pursuant to Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9607, and Section 7003 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973. The City of Rialto and the Rialto Utility Authority (collectively "Rialto") filed, on October 15, 2009, a complaint (Case No. CV 09-07501 PSG (SSx)) pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607, 9613, Section 7002 of RCRA, 42 U.S.C. § 6972, Section 1367 of the Federal Code of Civil Procedure, 28 U.S.C. § 1367, Sections 2201 and 2202 of the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, state statutes, and common law. The City of Colton ("Colton") filed, on October 6, 2009, a complaint (Case No. CV 09-01864 PSG (SSx)) pursuant to Sections 107(a) and 113(g)(2) of CERCLA, 42 U.S.C. §§ 9607(a) and 9613(g)(2), and Sections 2201 and 2202 of the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, state statutes, and common law. Emhart Industries, Inc., Kwikset Locks, Inc., Black & Decker Inc., and Fred Skovgard (the "Emhart Parties") filed, on October 15, 2009, a complaint (Case No. CV 09-07508 PSG (SSx)) pursuant to Sections 107(a) and 113(g)(2) of CERCLA, 42 U.S.C. §§

9607(a) and 9613(g)(2), Sections 2201 and 2202 of the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202. The County of San Bernardino filed, on September 11, 2009, a complaint (Case Nos. CV 09-06632 PSG (SSx)) pursuant to Sections 107, 113 and 113(g)(2) of CERCLA, 42 U.S.C. §§ 9607, 9613 and 9613(g)(2), and sought equitable indemnity. Goodrich Corporation ("Goodrich") also filed, on September 11, 2009, a complaint (CV 09-06630 PSG (SSx)) under CERCLA and state law. These cases were consolidated by orders filed on January 20, 2010 and June 3, 2010.

B. The United States in its complaint seeks, *inter alia*: (1) reimbursement of costs incurred by EPA and the Department of Justice for response actions at the B.F. Goodrich Superfund Site in Rialto, California, together with accrued interest; and (2) performance of response actions by the defendants at the B.F. Goodrich Superfund Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP"). The Cities of Rialto and/or Colton ("Cities") in their complaints seek, *inter alia*: (1) recovery of response costs incurred by the Cities in response to the release and threatened release of hazardous substances from the Rialto Ammunition Backup Storage Point ("RABSP"); (2) injunctive relief directing defendants to investigate, abate, and remediate contamination resulting from releases of hazardous substances from the RABSP; (3) declaratory relief that defendants are responsible for future response

costs incurred by the Cities necessary to respond to the release or threatened release of hazardous substances from the RABSP; and (4) damages under various state law claims. The Emhart Parties in their complaint seek, *inter alia*, reimbursement of costs incurred by them for response actions at the B.F. Goodrich Superfund Site and declaratory relief for future response costs. The County of San Bernardino in its complaint seeks, *inter alia*, reimbursement of costs incurred by it for response actions taken in the Rialto-Colton Groundwater Basin including the RABSP and declaratory relief for future response costs. Goodrich in its complaint seeks reimbursement of costs incurred by it for response actions taken in the RABSP and declaratory relief for future response costs.

C. 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 of California (the "State") on December 9, 2010, of negotiations with potentially responsible parties ("PRPs") regarding the implementation of the remedial design and remedial action for the B.F. Goodrich Superfund Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the U.S. Fish and Wildlife Service and the California Department of Fish and Game on November 15, 2010, of negotiations with PRPs regarding the release of hazardous substances that may have resulted in injury to

the natural resources under federal trusteeship and encouraged the trustees to participate in the negotiation of this Consent Decree.

E. The settling defendants and federal agencies that have entered into this Consent Decree ("Settling Defendants" and "Settling Federal Agencies") do not admit any liability in the Consolidated Federal Action arising out of the transactions or occurrences alleged in the complaints, nor do they acknowledge that the release or threatened release of hazardous substance(s) at or from the B.F. Goodrich Superfund Site or the West Side Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment. Settling Defendants, Settling Federal Agencies, and the Cities do not admit any liability arising out of the transactions or occurrences alleged in any claim or counterclaim asserted by any party in the Consolidated Federal Action.

F. The United States has requested and reviewed Financial Information and Insurance Information from Settling Ability to Pay Defendants to determine whether they are financially able to pay response costs incurred and to be incurred in connection with the B.F. Goodrich Superfund Site. Based upon such Financial Information and Insurance Information, the United States has determined that Settling Ability to Pay Defendants are able to pay no more than the amounts specified in Appendix C to this Consent Decree.

G. The United States' complaint and this Consent Decree, and the

history of the B.F. Goodrich Superfund Site, exist within a larger context of litigation and a larger context of activities in and around the B.F. Goodrich Superfund Site, as follows:

1) During and immediately after World War II, certain United States agencies owned a tract known as the Rialto Ammunition Backup Storage Point ("RABSP") in the City of Rialto in San Bernardino, California;

2) The RABSP sits atop the Rialto-Colton Groundwater Basin;

3) After World War II, the United States agencies sold the RABSP property off in different parcels, including a 160-acre parcel ("160-Acre Area") bounded by West Casa Grande Drive on the north, Locust Avenue on the east, Alder Avenue on the west, and an extension of Summit Avenue on the south. Certain Settling Defendants and other parties to the Consolidated Federal Action owned and/or operated businesses within the area formerly occupied by the RABSP;

4) The United States on behalf of EPA, asserts that there are two source areas within the area formerly occupied by the RABSP (the "RABSP Area") from which contaminated groundwater is emanating. These two source areas are known as the West Side Area and the 160-Acre Area;

5) The West Side Area is in the western portion of the former RABSP Area. For purposes of this Consent Decree, it consists of property

currently owned by San Bernardino County, otherwise known as the Mid Valley Sanitary Landfill ("County Property"), and the Stonehurst Property, which is located adjacent to the County Property;

6) The State of California's Water Resources Control Board and its Santa Ana Regional Water Quality Control Board have assumed jurisdiction over, among other things, the cleanup of the County Property and the Stonehurst Property, and the County of San Bernardino has assumed responsibility for implementing a cleanup of releases from the County Property pursuant to Cleanup and Abatement Order, Regional Water Quality Control Board Order No. R8-2003-0013, as amended by R8-2004-0072, ("CAO");

7) Certain claims in the Consolidated Federal Action are the subject of consent decrees entered in the Central District of California under case number ED CV 09-1864 (SSx) (Docket Nos. 772, 1192, and 1258);

8) The 160-Acre Area is in the eastern portion of the former RABSP, and is the source area encompassed in the B.F. Goodrich Superfund Site;

H. In response to a release or a substantial threat of a release of a hazardous substance(s) at or from the B. F. Goodrich Superfund Site, EPA commenced on January 15, 2009, a Remedial Investigation and Feasibility Study ("RI/FS") for the B. F. Goodrich Superfund Site pursuant to 40 C.F.R. § 300.430;

I. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed

the B.F. Goodrich Superfund Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 23, 2009, 74 Fed. Reg. 48412. By placing the B.F. Goodrich Superfund Site on the National Priorities List, U.S. EPA assumed jurisdiction over its cleanup;

J. EPA completed a Remedial Investigation ("RI") and Feasibility Study ("FS") Report for the B.F. Goodrich Superfund Site on January 25, 2010. 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 remedial action on February 5, 2010, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which an Assistant Director of the Superfund Division, EPA Region 9, based the selection of the response action. The decision by EPA on a first remedial action to be implemented at the B.F. Goodrich Superfund Site is embodied in an Interim Record of Decision ("2010 ROD"), executed on September 30, 2010, on which the State has given its concurrence. The 2010 ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b). The 2010 ROD in part requires installation, operation, and maintenance of a groundwater pump and treat system to

limit the spread of contaminated groundwater from the 160-Acre Area;

K. The Remedial Action Objectives of the 2010 ROD remedy are to: 1) protect water supply wells and groundwater resources downgradient of the target area (as described in the 2010 ROD) by limiting the spread of contaminated groundwater from the 160-Acre Area; and 2) remove the contaminants from the groundwater in that targeted area;

L. EPA is currently performing an additional RI to determine whether any further remedial action will be necessary at the B.F. Goodrich Superfund Site beyond those remedial actions specified in the 2010 ROD and, if so, the extent of such further remedial action;

M. Based on the information presently available to EPA, EPA believes that the Work required by this Consent Decree will be properly and promptly conducted by Settling Work Defendant if conducted in accordance with the requirements of this Consent Decree and its appendices;

N. Solely for the purposes of Section 113(j) of CERCLA, 42 U.S.C. § 9613(j), the remedy set forth in the 2010 ROD and the Work to be performed by Settling Work Defendant, shall constitute a response action taken or ordered by the President for which judicial review shall be limited to the administrative record;

O. 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,

that implementation of this Consent Decree will expedite the cleanup of the B.F. Goodrich Superfund 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 Consolidated Federal Action pursuant to 28 U.S.C. §§ 1331, 1345, and 1367 and to 42 U.S.C. §§ 9607, 9613(b), and 6973. The claims and counterclaims brought in accordance with state law arise from the same common nucleus of operative facts as the claims under federal law. This Court also has personal jurisdiction over Rialto, Colton, Settling Defendants, and Settling Federal Agencies. The Consolidated Federal Action is properly venued in this Court. Settling Defendants, Settling Federal Agencies, Rialto, and Colton shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States, on behalf of the EPA, Rialto, Colton, Settling Defendants, and Settling Federal Agencies and upon their heirs, successors, and assigns. Any change in ownership

or corporate status of a Settling Defendant or change in municipal status for Rialto or Colton, including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's, Rialto's, or Colton's responsibilities under this Consent Decree.

3. Settling Work Defendant shall provide a copy of this Consent Decree to each contractor hired to perform the Work required by this Consent Decree and to each person representing Settling Work Defendant with respect to the B.F. Goodrich Superfund 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. Settling Work Defendant or its contractor shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Work Defendant shall nonetheless be responsible for ensuring that its contractors and subcontractors perform the Work in accordance with the terms of 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 Settling Work Defendant within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided in this Consent Decree, 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 solely for purposes of this Consent Decree:

"160-Acre Area" shall mean the area located in San Bernardino County that is bounded by West Casa Grande Drive on the north, Locust Avenue on the east, Alder Avenue on the west, and an extension of Summit Avenue on the south. The 160-Acre Area is depicted generally on the map included in Appendix A.

"2010 Record of Decision" or "2010 ROD" shall mean the document entitled "USEPA Superfund Interim Action Record of Decision" relating to the Source Area Operable Unit, B.F. Goodrich Superfund Site, San Bernardino County, CA, EPA ID: CAN000905945, dated September 30, 2010, signed by the Assistant Director, Superfund Division, EPA Region 9, and all attachments thereto. The 2010 ROD is attached as Appendix B.

"2010 ROD Capital Costs" shall mean the design, permitting, capital construction and capital equipment costs incurred on and after October 10, 2012, by Settling Work Defendant that are necessary for the implementation or performance of the 2010 ROD and are consistent with the National Contingency Plan. The term includes capital equipment replacement costs necessitated by (1)

an upgrade to capital equipment (less salvage value of original equipment) required by EPA; (2) a weather event, natural disaster, or act of war, not otherwise covered by insurance; or (3) an unavoidable accident, act of arson, or vandalism, not caused by Settling Work Defendant or its contractor and not otherwise covered by insurance. 2010 ROD Capital Costs shall not include attorney's fees, or capital equipment replacement costs that do not meet the above criteria.

"2010 ROD O&M Costs" shall mean all operation and maintenance costs, including equipment replacement, unless such replacement is specifically provided for in the definition of 2010 ROD Capital Costs, incurred by Settling Work Defendant necessary to maintain the effectiveness of the 2010 ROD in accordance with the applicable Performance Standards and consistent with the National Contingency Plan. 2010 ROD O&M Costs shall not include attorney's fees.

"Basin Contaminants" shall mean any type of perchlorate; trichloroethylene ("TCE"); carbon tetrachloride; chloroform; or methylene chloride; including any breakdown or "daughter" products of the foregoing.

"B.F. Goodrich Special Account" shall mean the special account, within the EPA Hazardous Substances Superfund, established for the B.F. Goodrich Superfund Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

"B.F. Goodrich Superfund Site" shall mean the B.F. Goodrich Superfund

Site, which includes the 160-Acre Area and all areas where contamination from the 160-Acre Area otherwise comes to be located.

"B.F. Goodrich Superfund Site 2010 ROD Trust Fund" or "2010 ROD Trust Fund" shall be a trust account held by Settling Work Defendant which may be invested only in Investment-Grade Debt Securities and may be used only to fund and/or reimburse costs of the Work pursuant to the terms of this Consent Decree.

"B.F. Goodrich Superfund Site Disbursement Special Account" or "Initial Disbursement Special Account" shall be the account described in Paragraph 69.

"B.F. Goodrich Superfund Site Escrow Account" shall mean the escrow account into which Settling Defendants and the United States on behalf of Settling Federal Agencies shall pay their funds pursuant to Paragraphs 60, 61, 63-66, and 70 of this Decree.

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

"Certification of Completion of the Final Remedial Action" shall mean the certification of completion of the remedial action associated with the Final Record of Decision for the B.F. Goodrich Site.

"Cities" shall mean Colton and Rialto collectively.

"Colton" shall mean the City of Colton and any of its present, former, or future subdivisions, departments, commissions, agencies, or instrumentalities.

"Consent Decree" or "Decree" shall mean this Consent Decree and all Appendices attached hereto (listed in Section XXVII). In the event of conflict between this Consent Decree and any Appendix, this Consent Decree shall control.

"Consolidated Federal Action" shall mean *City of Colton v. American Promotional Events, Inc., et al.*, Case No. ED CV 09-01864 PSG (SSx); *Goodrich Corporation v. Chung Ming Wong, et al.*, Case No. CV 09-6630 PSG (SSx); *County of San Bernardino, et al., v. Tung Chun Co., et al.*, Case No. CV 09-06632 PSG (SSx); *City of Rialto and Rialto Utility Authority v. United States Department of Defense, et al.*, Case No. CV 09-7501 PSG (SSx); and *Emhart Industries, Inc. v. American Promotional Events, Inc.-West, et al.*, Case No. CV 09-07508 PSG (SSx), all of which were consolidated pursuant to an order issued on January 20, 2010; *United States of America v. Goodrich Corporation, et al.*, Case No. 10-00824 PSG (SSx), which was consolidated with the previously consolidated cases pursuant to an order issued on June 3, 2010; and *City of Colton v. American Promotional Events, Inc., et al.*, Case No. ED CV 05-01479 PSG (SSx), which was consolidated with the previously consolidated cases pursuant to an order issued on March 24, 2011.

"Construction of the Remedial Action" shall mean all activities Settling Work Defendant is required to perform under the Consent Decree to implement the 2010 ROD through the Certification of Completion of Construction of the

Remedial Action described in Paragraph 55, in accordance with the SOW, the final Remedial Design and Remedial Action Work Plans, and other plans approved by EPA, and excluding performance of O&M and the activities required under Section XXIII (Retention of Records).

"County Property" shall mean the property known as the Mid Valley Sanitary Landfill, which is currently owned by the County of San Bernardino, including those areas currently leased to Robertson's Ready Mix. The County Property is bounded by Summit Avenue on the north, generally by Alder Avenue on the east (until Alder Avenue terminates at or within the Robertson's Ready Mix leasehold), generally by the municipal boundaries of the cities of Fontana and Rialto on the west except for a strip of land located in the city of Fontana, and by Casmalia Street on the south. The County Property is depicted generally on the map included in Appendix A.

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

"DOJ" shall mean the United States Department of Justice and its successor departments, agencies, or instrumentalities.

"Effective Date" shall be the earlier of the date upon which this Consent Decree is entered by the Court as recorded on the Court docket, or, if the Court issues an order approving the Consent Decree, the date such order is recorded on the Court docket.

"Emhart Related Parties" shall mean Black & Decker Corporation ("BDC"); Black & Decker Inc. ("BDI"); Kwikset Corporation ("Kwikset"); Kwikset Locks, Inc. ("KLI"); all other parent, subsidiary, and affiliate entities of BDC, BDI, Kwikset, KLI, and Emhart Industries, Inc.; Fred Skovgard and his presumptive heirs and estate; and Mildred Wilkens (deceased) and her heirs and estate.

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

"Federal Contract" means any prime contract, subcontract, or any other agreement transferring value between a party to this Consent Decree and a department, agency, or instrumentality of the United States, including but not limited to, contracts for goods or services, grants, and cooperative agreements. The term "Federal Contract" does not include this Consent Decree.

"Final Record of Decision" shall mean the final Record of Decision (and all attachments) for the B.F. Goodrich Superfund Site that will be signed by EPA in the future, and after lodging of this Consent Decree.

"Final Remedial Action" shall mean activities associated with implementing

the Final Record of Decision.

"Financial Information" shall mean those financial documents identified in Appendix H.

"Further Settlor" shall mean any party to the Consolidated Federal Action and not a signatory to this Consent Decree, with whom the United States, on behalf of EPA, reaches final settlement.

"Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports, and other deliverables submitted pursuant to this Consent Decree, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section VII (Remedy Review), Section IX (Access) (including, but not limited to, the cost of attorney time and any monies paid to secure access including, but not limited to, the amount of just compensation), Section XV (Emergency Response), Paragraph 53 (Funding for Work Takeover), and Section XXVIII (Community Relations).

"Institutional Controls" shall mean Proprietary Controls and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, and/or resource use to minimize the potential for human exposure to Waste Material at or in connection with the B.F. Goodrich

Superfund Site; (b) limit land, water, and/or resource use to implement, ensure non-interference with, or ensure the protectiveness of the Remedial Action; and/or (c) provide information intended to modify or guide human behavior at or in connection with the B.F. Goodrich Superfund Site.

"Insurance Information" shall mean those insurance documents identified in Appendix I.

"Interest" 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.

"Investment Grade Debt Securities" shall mean any government or corporate debt security that, when acquired, was rated "investment grade" by at least one nationally recognized statistical rating agency as set forth in 12 U.S.C. § 1834e(d)4(A).

"MSW" shall mean municipal solid waste material: (a) generated by a household (including a single or multifamily residence); or (b) generated by a commercial, industrial, or institutional entity, to the extent that the waste material: (1) is essentially the same as waste normally generated by a household; (2) is

collected and disposed of with other municipal solid waste as part of normal municipal solid waste collection services; and (3) contains a relative quantity of hazardous substances no greater than the relative quantity of hazardous substances contained in waste material generated by a typical single-family household.

"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.

"Operation and Maintenance" or "O&M" shall mean all activities required to operate and maintain the systems constructed to implement the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to Section VI (Performance of the Work by Settling Work Defendant) and the SOW.

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

"Parties" shall mean the United States, Settling Defendants, Rialto, and Colton.

"Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid (by EPA or by the Department of Justice in representing EPA) at or in connection with the B.F. Goodrich

Superfund Site through September 30, 2010, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

"Performance Standards" shall mean the cleanup standards, the Applicable or Relevant and Appropriate Requirements ("ARARs"), and other measures of achievement of the goals of the Remedial Action, set forth in Section 2.11.2.1, Table 12, and Table 13 of the 2010 ROD. Settling Work Defendant will continue to implement the RD/RA until Settling Work Defendant can demonstrate that: (1) the concentrations of the chemicals of concern identified in the 2010 ROD, in groundwater at monitoring locations to be determined, do not exceed State or federal MCLs identified in the 2010 ROD; and (2) such concentrations are not reasonably expected, based on sound and generally accepted scientific principles, to increase above their respective MCLs after the RD/RA ceases operation.

"Plaintiff" shall mean the United States on behalf of EPA.

"Proprietary Controls" shall mean easements or covenants running with the land that: (a) limit land, water, or resource use and/or provide access rights, and (b) are created pursuant to common law or statutory law by an instrument that is recorded by the owner in the appropriate land records office.

"RABSP Area" shall mean the approximately 2,800 acre parcel of land originally containing the former Rialto Ammunition Backup Storage Point, located in San Bernardino, California. The 160-Acre Area is within the geographic area of

the RABSP Area. The RABSP Area is depicted, generally, in the map included in Appendix A.

"RABSP Site" shall mean the RABSP Area and all areas where contamination from the RABSP Area comes to be located.

"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).

"Remedial Action" or "RA" shall mean all activities Settling Work Defendant is required to perform under this Consent Decree as specified in the SOW, and under the final Remedial Design Work Plan approved by EPA to implement the 2010 ROD, until the Performance Standards are met, excluding the activities required under Section XXIII (Retention of Records). Remedial Action includes Startup Activities.

"Remedial Action Work Plan" shall mean the document developed pursuant to Paragraph 17 and approved by EPA, and any modifications thereto.

"Remedial Design" or "RD" shall mean those activities to be undertaken by Settling Work Defendant to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

"Remedial Design Work Plan" shall mean the document developed pursuant to Paragraph 16 and approved by EPA, and any modifications thereto authorized by this Consent Decree.

"Rialto" shall mean the City of Rialto and any of its present, former, or future subdivisions, departments, commissions, agencies, or instrumentalities, including, but not limited to, the Rialto Utility Authority and the Rialto Redevelopment Agency.

"San Bernardino County Settling Parties" shall include the parties identified in Appendix E.

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

"Settling Ability to Pay Defendants" shall mean the parties identified in Appendix C.

"Settling Cashout Defendants" shall mean the parties identified in Appendix D.

"Settling Defendants" shall mean collectively the Settling Ability to Pay Defendants, the Settling Cashout Defendants, the San Bernardino County Settling Parties, the Emhart Related Parties, and the Settling Work Defendant, as those Parties are identified in this Decree and in Appendices C, D, and E.

"Settling Federal Agencies" shall mean any federal agency, department, or instrumentality named or alleged to be liable for contamination in the Consolidated Federal Action, including but not limited to the United States Army, the Department of the Navy, the United States Air Force, the United States

Department of Defense, the Farm Credit Administration, the United States Customs and Border Protection, the National Aeronautics and Space Administration, the United States Department of Energy, Lawrence Livermore National Laboratory, the United States Forest Service, and any other federal entity that is alleged to have transported, disposed of, or released any Waste Material within the area encompassed by the RABSP Area, as depicted in Appendix A, and any of their predecessors or successors.

"Settling Work Defendant" shall mean Emhart Industries, Inc.

"Startup Activities" shall mean those activities performed by Settling Work Defendant after the Certification of Completion of Construction of the Remedial Action to make the remedy "Operational and Functional," including, but not limited to, activities which fall within the definition of 2010 ROD Capital Costs and/or 2010 ROD O&M Costs. The remedy shall be deemed Operational and Functional when EPA determines that the remedy is functioning properly and is performing as designed.

"State" shall mean the State of California.

"Statement of Work" or "SOW" shall mean the statement of work that Settling Work Defendant has agreed to perform as set forth in this Consent Decree for implementation of the Remedial Design, Remedial Action, and O&M at the B.F. Goodrich Superfund Site, as set forth in Appendix F to this Consent Decree

and any modifications made in accordance with this Consent Decree.

"Stonehurst Property" shall mean the approximately 5-acre property in San Bernardino County, County APNs 1133-07-105, 1133-07-106, and 1133-07-107, collectively, located at 2298 West Stonehurst Drive, Rialto, California. The Stonehurst Property is depicted generally on the map included in Appendix A.

"Supervising Contractor" shall mean the principal contractor retained by Settling Work Defendant to supervise and direct the implementation of the Work under this Consent Decree.

"United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, specifically including EPA and the Settling Federal Agencies.

"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) of CERCLA, 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 all applicable or relevant and appropriate State statutory authority.

"West Side Area" shall mean the County Property and the Stonehurst Property. The West Side Area is depicted generally on the map included in Appendix A.

"West Side Site" shall mean the West Side Area and all areas where

perchlorate and TCE contamination from the West Side Area comes to be located.

"Work" shall mean all activities and obligations Settling Work Defendant is required to perform under this Consent Decree, except the activities required under Section XXIII (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 by the design and implementation of response actions required by this Consent Decree at the B.F. Goodrich Superfund Site by Settling Work Defendant; to have Settling Federal Agencies, Settling Cashout Defendants, Settling Ability to Pay Defendants, and the San Bernardino County Settling Parties pay a portion of the Work costs and/or Plaintiff's response costs; to resolve disputed claims in the Consolidated Federal Action; to provide Rialto, Colton, Settling Defendants, and Settling Federal Agencies with contribution protection pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2); and to provide Rialto, Colton, Settling Defendants, and Settling Federal Agencies with the protections granted by an order from this Court finding that the settlement herein described has been made in good faith, is reasonable, and is fair under federal and state law.

6. Commitments by Settling Work Defendant.

a. Settling Work Defendant shall perform all of the Work and

finance portions of the Work in accordance with this Consent Decree, the 2010 ROD, the SOW, all work plans, other plans, standards, specifications, and schedules set forth in this Consent Decree or developed by Settling Work Defendant and approved by EPA pursuant to this Consent Decree.

b. Settling Work Defendant is not required to perform any of the Work prior to the funding of the 2010 ROD Trust Fund, except that Settling Work Defendant shall commence on October 10, 2012, its obligations to (1) enter into implementation agreements with Rialto, Colton, the County of San Bernardino, and any other third party necessary to perform the Work and (2) prepare groundwater flow modeling, conduct the remedial design (including compliance with associated reporting requirements in the SOW), and initiate permitting and remedial action planning required by the SOW.

c. Additional Limitations on Settling Work Defendant's Obligations to Perform the Work.

1) If Rialto and/or Colton fail to meet their respective obligations set forth in Paragraph 10 of this Consent Decree, Settling Work Defendant's obligations to perform the Work shall cease to the extent Settling Work Defendant is prevented by the actions of Rialto and/or Colton from performing some or all of the Work, unless EPA directs Settling Work Defendant

to perform that work and Settling Work Defendant is reimbursed for any such additional work.

2) If, at any time, the water rights leased from Colton are insufficient to allow Settling Work Defendant to meet the objectives of the 2010 ROD, Settling Work Defendant shall make good faith efforts to arrange with other water purveyors for the ability to extract sufficient groundwater to meet the objectives of the 2010 ROD. If Settling Work Defendant is unable, after a good faith effort, to have sufficient additional water rights committed to the Work, Settling Work Defendant's obligation to extract groundwater shall be limited to Colton's available water rights, plus – subject to the limitation below – any additional water rights Settling Work Defendant has successfully secured. Settling Work Defendant shall not be obligated to pay any water purveyor materially more than the actual, incremental cost increase the water purveyor incurs because it receives the water from Settling Work Defendant and then delivers that water to its customers, instead of extracting (*i.e.*, pumping) an equivalent amount of groundwater itself and delivering that water to its customers.

3) In connection with the limitations on the Work set forth in this Paragraph 6. c., Settling Work Defendant shall promptly enforce all applicable rights in its implementation agreements with Rialto and Colton.

7. Commitments by Settling Federal Agencies.

The United States, on behalf of the Settling Federal Agencies, shall finance portions of the Work and other response costs by providing a lump sum cash payment to the B.F. Goodrich Superfund Site Escrow Account as provided in Paragraph 66. a. of this Consent Decree, by sharing risks of specified 2010 ROD Capital Costs overruns with Settling Work Defendant as described in Paragraph 66. d., and by agreeing to finance portions of the 2010 ROD O&M Costs as described in Paragraph 66. e.

8. Commitments by Settling Cashout Defendants.

Each Settling Cashout Defendant shall make a lump sum cash payment to the B.F. Goodrich Superfund Site Escrow Account as provided in this Consent Decree and as set forth in Appendix D. The Settling Cashout Defendants shall not bear any obligation or responsibility of Settling Work Defendant, other than those obligations or responsibilities shared by all Settling Defendants or as otherwise specified in this Consent Decree.

9. Commitments by Settling Ability to Pay Defendants.

Each Settling Ability to Pay Defendant shall make a cash payment to the B.F. Goodrich Superfund Site Escrow Account as provided in this Consent Decree and as set forth in Appendix C. The Settling Ability to Pay Defendants shall not bear any obligation or responsibility of Settling Work Defendant, other than those

obligations or responsibilities shared by all Settling Defendants or as otherwise specified in this Consent Decree.

10. Cooperation Commitments by the Cities.

a. Mutual Commitments of Colton and Settling Work Defendant.

1) Colton shall facilitate Settling Work Defendant's performance of the Work by the following commitments enforceable by the United States on behalf of EPA under this Consent Decree:

a) Colton shall lease (for a nominal cost) to Settling Work Defendant its water rights in the Rialto-Colton Groundwater Basin as necessary to perform the Work to the maximum extent Colton has such rights under the 1961 Decree in *The Lytle Creek Water and Improvement Co. v. Fontana Ranchos Water Co., et al.*, San Bernardino County Superior Court Case No. 81254, or any subsequent modification of that Decree, less: (i) the water already committed to the County of San Bernardino pursuant to the settlement agreement referenced in Paragraph 119. a.; and (ii) the water necessary to accommodate seasonal water demands. EPA will work with Colton to provide flexibility to accommodate seasonal water demands.

b) Colton shall accept an equal amount of treated water for distribution to its customers, and Colton shall provide the access necessary to accept the treated water.

2) If, at any time, EPA alleges that Colton has failed to perform its obligations under Paragraph 10. a. 1), prior to EPA seeking enforcement of those obligations under this Consent Decree, EPA shall provide to Colton written notice of such alleged failure, including a reasonably detailed description of the alleged failure and EPA's requested action to correct it. Colton shall have seven (7) working days from receipt of such notice to cure the alleged noncompliance. If Colton chooses instead to contest EPA's allegation of a failure to perform or the corrective action requested by EPA, Colton shall have seven (7) working days from receipt of the notice to serve upon EPA its statement of position, with material factual data, analysis, or opinion supporting that position and supporting documentation. EPA will attempt to serve on Colton its responsive statement of position, with material factual data, analysis, or opinion supporting that position and supporting documentation, within seven (7) working days thereafter. The Division Director of the Superfund Division of EPA Region 9 shall thereafter issue EPA's final decision regarding the dispute. If Colton wishes to dispute this decision by EPA, it may seek resolution of the dispute by filing an appropriate motion with the Court to resolve a dispute under the Consent Decree within thirty (30) days after receipt of EPA's final decision. In such proceeding, the review will be de novo and the decision will be based on a preponderance of evidence.

3) Colton and Settling Work Defendant shall enter into an implementation agreement ("Colton/Settling Work Defendant Implementation Agreement") within ninety (90) Days of Settling Work Defendant's completion of Groundwater Flow Modeling described in Paragraph 16. e., or thirty (30) Days after EPA approves the Remedial Design Work Plan described in Paragraphs 16. a. and 16. b., whichever is later. The Colton/Settling Work Defendant Implementation Agreement shall contain in all material respects:

a) The terms set forth in Paragraph 10. a. 1);

b) Colton's agreement to reimburse Settling Work Defendant only for the lifting costs of the water to be treated and delivered (as potable) to Colton by Settling Work Defendant to the extent such costs do not exceed the lifting costs incurred by Colton when operating its own extraction wells in the Rialto-Colton Groundwater Basin;

c) Colton's agreement to ensure that knowledgeable representatives are available, as reasonably necessary, to work with Settling Work Defendant during the design, permitting, and construction phases of the Work;

d) Mutual indemnification commitments; and

e) All other consistent, necessary, and appropriate terms.

4) If either Colton or Settling Work Defendant fails to enter into the Colton/Settling Work Defendant Implementation Agreement pursuant to Paragraph 10. a. 3), that failure shall be enforceable under this Consent Decree. Upon the execution of the Colton/Settling Work Defendant Implementation Agreement, the obligations of Colton and Settling Work Defendant to each other in this Paragraph shall be governed by the Colton/Settling Work Defendant Implementation Agreement, not Paragraph 10. a. 3). Nothing in this subparagraph shall affect the rights of the United States on behalf of EPA under 10 a. 1) and 10 a. 2).

5) If, at any time, a dispute arises between Colton and the Settling Work Defendant regarding the Colton/Settling Work Defendant Implementation Agreement, that dispute shall be resolved as provided for in Paragraph 86 (Dispute Resolution By or Between Settling Work Defendant, Rialto, Colton, and/or the County of San Bernardino Regarding Implementation Agreements Entered Pursuant to Paragraphs 10 and 12) of Section XIX (Dispute Resolution).

b. <u>Mutual Commitments of Rialto and Settling Work Defendant</u>.

1) Rialto shall facilitate Settling Work Defendant's performance of the Work by the following commitments enforceable by EPA under this Consent Decree:

a) providing access (for a nominal fee) to certain real property for the installation and operation of the groundwater extraction and monitoring wells required by the Remedial Action, and for the construction and operation of a groundwater treatment system and associated connective piping, as follows:

(i) Rialto will provide access to its public rights of way for the installation, monitoring, operation and maintenance of monitoring and extraction wells and associated connective piping;

(ii) Rialto will provide access to its property for the construction and operation of a single treatment plant at the location of the existing groundwater treatment system constructed by the County of San Bernardino at Rialto-03 water supply well, with expansions at that location as necessary to satisfy the objectives of the 2010 ROD if such expansion does not materially increase the area of real property beyond that already designated for the existing treatment plant. In the alternative, Rialto will provide access to its property for the construction and operation of a treatment plant at a location reasonably proximate to Rialto-02 water supply well, subject to Rialto's reasonable approval of the exact location, consistent with Rialto's land use and development plans and entitlements, and aesthetic standards; and

(iii) Rialto will provide access for the siting of wells proposed by EPA in locations owned and controlled by Rialto other than public rights of way if EPA concludes that satisfactory completion of the Remedial Action requires that a well or wells be located other than in a right of way. If EPA so concludes, it shall inform Rialto as to where it generally believes that a well should be located, seek input from Rialto, complete a detailed evaluation of options, and use its best efforts to minimize impacts on Rialto's development and land use plans in determining where it proposes to site the well or wells. The parties shall work in good faith to reach agreement on well location. If Rialto and EPA cannot agree as to appropriate well location, Rialto may invoke the dispute resolution process set forth in Paragraph 10. b. 2). In the event that Rialto files an appropriate motion with the Court, the Court may then decide whether the parties have negotiated in good faith and whether EPA has used its best efforts to minimize impacts and to assure satisfactory completion of the Remedial Action while, to the maximum extent feasible, avoiding detrimental impacts to Rialto.

b) operating the groundwater treatment system and extraction wells (as authorized under Rialto's state drinking water system permit, as it may need to be amended), as a contractor to Settling Work Defendant; provided, however, that Rialto's commitments in this Paragraph 10. b. 1) b) are conditioned upon Settling Work Defendant's satisfactory performance of its

material reciprocal covenants with Rialto in the Rialto/Settling Work Defendant Implementation Agreement as defined below; and

c) transporting the treated water through Rialto's existing water supply system to (i) Colton, and/or (ii) to a water purveyor other than Colton, if the piping and infrastructure exists for such transport and if such water purveyor agrees to accept such water at no increased cost to Rialto.

2) If, at any time, EPA alleges that Rialto has failed to perform its obligations under Paragraph 10. b. 1), prior to EPA's seeking enforcement of those obligations under this Consent Decree, EPA shall provide to Rialto written notice of such alleged failure, including a reasonably detailed description of the alleged failure and EPA's requested action to correct it. Rialto shall have seven (7) working days from receipt of such notice to cure the alleged noncompliance. If Rialto chooses instead to contest EPA's allegation of a failure to perform or the corrective action requested by EPA, Rialto shall have seven (7) working days from receipt of the notice to serve upon EPA its statement of position, with material factual data, analysis, or opinion supporting that position and supporting documentation. EPA will attempt to serve on Rialto its responsive statement of position, with material factual data, analysis, or opinion supporting that position and supporting documentation, within seven (7) working days thereafter. The Division Director of the Superfund Division of EPA Region 9 shall

thereafter issue EPA's final decision regarding the dispute. If Rialto wishes to dispute this decision by EPA, it may seek resolution of the dispute by filing an appropriate motion with the Court to resolve a dispute under the Consent Decree within thirty (30) Days after receipt of EPA's final decision. In such proceeding, the review will be de novo and the decision will be based on a preponderance of evidence.

3) Rialto and Settling Work Defendant shall enter into an implementation agreement ("Rialto/Settling Work Defendant Implementation Agreement") within ninety (90) Days following the completion of Groundwater Flow Modeling described in Paragraph 16. e., or thirty (30) Days following EPA approval of the Remedial Design Work Plan described in Paragraphs 16. a. and 16. b., whichever is later. The Rialto/Settling Work Defendant Implementation Agreement shall contain in all material respects the terms outlined in the Material Terms To Be Included in the Rialto/Settling Work Defendant Implementation Agreement appended hereto as Appendix J, and all other consistent, necessary, and appropriate terms. If either Rialto or Settling Work Defendant fails to enter into the Rialto/Settling Work Defendant Implementation Agreement pursuant to Paragraph 10. b. 3), that failure shall be enforceable under this Consent Decree. Upon the execution of the Rialto/Settling Work Defendant Implementation Agreement, the obligations of Rialto and Settling Work Defendant to each other

addressed in that agreement shall be governed by the Rialto/Settling Work Defendant Implementation Agreement, not Paragraph 10. b. 1) above.

4) If, at any time, a dispute arises between Rialto and Settling Work Defendant regarding the Rialto/Settling Work Defendant Implementation Agreement, that dispute shall be resolved as provided for in Paragraph 86 (Dispute Resolution By or Between Settling Work Defendant, Rialto, Colton, and/or the County of San Bernardino Regarding Implementation Agreements Entered Pursuant to Paragraphs 10 and 12) of Section XIX (Dispute Resolution). Nothing in this subparagraph shall affect the rights of the United States on behalf of EPA under 10. b. 1) and 10. b. 2).

11. Commitments by the San Bernardino County Settling Parties.

The San Bernardino County Settling Parties shall make a cash payment to the B.F. Goodrich Superfund Site Escrow Account as provided in Paragraph 65 of this Consent Decree. The San Bernardino County Settling Parties also shall provide covenants not to sue any Settling Defendant or Settling Federal Agency subject to a reservation of rights, as set forth in this Consent Decree in Section XXI (Covenants, Releases, and Reservations of Rights).

12. Mutual Commitments of the County of San Bernardino and Settling Work Defendant.

a. The County of San Bernardino and Settling Work Defendant

shall negotiate in good faith the terms and conditions of a mutually acceptable implementation agreement which may include, among other things, agreements as to: (1) whether and how to integrate the County of San Bernardino's existing treatment systems (located at Rialto well Rialto-03) with the treatment systems necessary for Settling Work Defendant to meet the objectives of the 2010 ROD; (2) whether and how to integrate the County of San Bernardino's existing capture wells (Rialto-03, Miro 2, and Miro 3), required by the CAO, with the capture well(s) necessary for Settling Work Defendant to meet the objectives of the 2010 ROD; (3) whether and how integrated treatment and/or capture systems can meet the separate and distinct remediation obligations under the CAO (for the County of San Bernardino) and this Consent Decree (for Settling Work Defendant); and (4) whether and how the County of San Bernardino and Settling Work Defendant can terminate their participation in the integrated treatment and/or capture systems upon meeting their respective closure standards under the CAO (for the County of San Bernardino) or this Consent Decree (for Settling Work Defendant), and the remaining party can continue, at its own expense, to operate the integrated treatment and/or capture systems as necessary until that party has terminated all its remedial obligations.

b. If the County of San Bernardino and Settling Work Defendant do not enter into a mutually agreeable implementation agreement as provided for

in Paragraph 12. a., and, if in the future (i) a material portion of the Basin Contaminants being treated by the County of San Bernardino treatment system has originated from the 160-Acre Area and/or (ii) a material portion of the Basin Contaminants being treated by the Settling Work Defendant's treatment system has originated from the County Property, the County of San Bernardino and Settling Work Defendant shall negotiate in good faith the terms of an agreement which fairly allocates between them the operation and maintenance costs and a dispute resolution mechanism to address disputes regarding such costs.

13. Compliance with Applicable Law.

All activities undertaken by Settling Work Defendant pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal, state, and local laws and regulations. Settling Work Defendant must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the 2010 ROD and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be deemed to be consistent with the NCP.

14. 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 that is not on-site requires a federal, state, or local permit or approval, Settling Work Defendant shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. Settling Work Defendant may seek relief under the provisions of Section XVIII (Force Majeure) for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in Paragraph 14. a. and required for the Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

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

VI. PERFORMANCE OF THE WORK BY SETTLING WORK DEFENDANT

15. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Settling Work Defendant pursuant to Sections VI (Performance of the Work by Settling Work Defendant), VII (Remedy Review), VIII (Quality Assurance, Sampling, and Data Analysis), IX (Access), and XV (Emergency Response) shall be under the direction and supervision of the Supervising Contractor, the selection of which

shall be subject to disapproval by EPA. Within 30 Days after lodging of the Consent Decree, Settling Work Defendant shall notify EPA and the Cities in writing of the name, title, and qualifications of any contractor proposed to be the Supervising Contractor. With respect to any contractor proposed to be Supervising Contractor, Settling Work Defendant shall demonstrate that the proposed contractor has a quality assurance system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001, reissued May 2006) or equivalent documentation as determined by EPA. EPA will issue a notice of disapproval or an authorization to proceed regarding hiring of the proposed contractor. If at any time thereafter, Settling Work Defendant proposes to change a Supervising Contractor, Settling Work Defendant shall give notice of such proposal to EPA and the Cities and must obtain an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Decree.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify Settling Work Defendant and the Cities in writing, and Settling Work

Defendant shall submit to EPA a list of contractors, including the qualifications of each contractor, which would be acceptable to Settling Work Defendant within thirty (30) Days of receipt of EPA's disapproval of the contractor previously proposed. EPA 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. Settling Work Defendant may select any contractor from that list that is not disapproved and shall notify EPA and the Cities of the name of the contractor selected within twenty-one (21) Days of EPA's authorization to proceed.

c. If EPA fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents Settling Work Defendant from meeting one or more deadlines in a plan approved by EPA pursuant to this Consent Decree, Settling Work Defendant may seek relief under Section XVIII (Force Majeure).

16. Remedial Design and Remedial Action Planning.

a. Within thirty (30) Days after EPA's issuance of an authorization to proceed pursuant to Paragraph 15, Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, a work plan for the design of the Remedial Action at the B.F. Goodrich Superfund Site (Remedial Design Work Plan). The Remedial Design Work Plan shall provide for design of the

remedy as required by this Consent Decree, the 2010 ROD, and the SOW. Upon its approval by EPA, the Remedial Design Work Plan shall be incorporated into and enforceable under this Consent Decree. Within forty-five (45) Days after EPA's issuance of an authorization to proceed under Paragraph 15, Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, a Health and Safety Plan for field design activities that conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Design Work Plan shall include plans and schedules for implementation of all remedial design tasks identified in the SOW, including, but not limited to, plans and schedules for the completion of: (1) a Remedial Design Investigation sampling and analysis plan (including, but not limited to, a Quality Assurance Project Plan ("QAPP") in accordance with Section VIII (Quality Assurance, Sampling, and Data Analysis) and a Health and Safety Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.); (2) a Remedial Design Investigation; (3) a Remedial Design Investigation Report; (4) Groundwater Flow Modeling; (5) a preliminary design submission; (6) a pre-final/final design submission; (7) an O&M Plan; (8) a Compliance Monitoring Plan; and (9) a Construction Quality Assurance Plan. In

addition, the Remedial Design Work Plan shall include a proposed schedule for completion of the Remedial Action Work Plan.

c. Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State and the Cities, Settling Work Defendant shall implement the Remedial Design Work Plan. Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, all plans, reports, and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables). Unless otherwise directed by EPA, Settling Work Defendant shall not commence further Remedial Design activities at the B.F. Goodrich Superfund Site prior to approval of the Remedial Design Work Plan.

d. The Remedial Design Investigation shall provide (1) updated groundwater data needed for the remedial design; (2) data if needed to support proposals to phase construction of portions of the Remedy; and (3) data to address any concerns about the quantity, quality, completeness, or usability of water quality or other data upon which the design will be based.

e. Groundwater Flow Modeling shall include activities needed to determine final groundwater extraction rates and locations for the remedy, including the use of a numeric groundwater flow model, submittal of preliminary

modeling results to EPA, and submittal of a Groundwater Flow Modeling Report at the completion of the modeling effort. It may also include provisions for one or more submittals that describe the development and calibration of a new model, or any changes to the calibration of the EPA/CH2M Hill model.

f. The preliminary design submission shall include, at a minimum, the following: (1) design criteria; (2) project delivery strategy; (3) preliminary plans, drawings, and sketches; (4) required specifications in outline form; and (5) preliminary construction schedule.

g. The intermediate design submission, if independently submitted by Settling Work Defendant, shall be a continuation and expansion of the preliminary design.

h. The pre-final/final design submission shall include, at a minimum, the following: (1) final plans and specifications; (2) an Operation and Maintenance Plan; and (3) a Compliance Monitoring Plan. A Construction Quality Assurance Project Plan ("CQAPP") shall be submitted no later than ninety (90) Days after receipt of EPA comments on the Preliminary Design Submittal. The CQAPP, which shall detail the approach to quality assurance during construction activities at the B.F. Goodrich Superfund Site, shall specify a quality assurance official, independent of the Supervising Contractor, to conduct a quality assurance program during the construction phase of the project.

i. The Operation and Maintenance Plan shall address material and maintenance needs; recordkeeping; staffing needs; routine data collection and analysis activities; resin and carbon replacement criteria, if applicable; routine reporting to EPA and the State; development of a Health and Safety Plan; potential operating problems; waste disposal; development of a Sampling & Analysis Plan ("SAP") or addendum to an existing SAP; and noncompliance notification to EPA and the State.

j. The Compliance Monitoring Plan shall address data collection, analysis, and reporting activities needed to demonstrate that the Work satisfies Performance Standards related to hydraulic control.

k. The CQAPP shall ensure, with a reasonable degree of certainty, that the completed RA will meet or exceed all design criteria, plans and specifications, relevant Performance Standards, and other relevant requirements.

17. Remedial Action.

a. Except as provided in Paragraph 6. c., within thirty (30) Days after the approval of the final design submission, Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, a work plan for the performance of the Remedial Action at the B.F. Goodrich Superfund Site (Remedial Action Work Plan). The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the 2010 ROD and

achievement of the Performance Standards, in accordance with this Consent Decree, the 2010 ROD, the SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan and approved by EPA. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and enforceable under this Consent Decree.

b. The Remedial Action Work Plan shall include the following: (1) schedule for completion of the Remedial Action; (2) method for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action plans; (4) methods for satisfying permitting requirements; and (5) procedures and plans for the decontamination of equipment and the disposal of contaminated materials. The Remedial Action Work Plan also shall include the methodology for implementing the CQAPP and a schedule for implementing all Remedial Action tasks identified in the final design submission and shall identify the initial formulation of Settling Work Defendant's Remedial Action project team (including, but not limited to, the Supervising Contractor).

c. Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State and the Cities, Settling Work Defendant shall implement the activities required under the Remedial Action Work Plan. Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, all reports and other deliverables required under

the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables). Unless otherwise directed by EPA, Settling Work Defendant shall not commence physical Remedial Action activities at the B.F. Goodrich Superfund Site prior to approval of the Remedial Action Work Plan.

18. Settling Work Defendant shall continue to implement the Remedial Action until the Performance Standards are achieved.

19. Modification of SOW or Work Plans Required by the SOW.

a. If EPA determines that it is necessary to modify the Work specified in the SOW and/or in work plans developed pursuant to the SOW to achieve, maintain, and satisfy the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the 2010 ROD, and such modification is consistent with the scope of the remedy set forth in the 2010 ROD and is consistent with the limitations set forth in Paragraph 6.c., then EPA may issue such modification in writing and shall notify Settling Work Defendant and the Cities of such modification. For the purposes of this Paragraph and Paragraphs 55 (Completion of Construction of the Remedial Action), 56 (Completion of Startup Activities), and 57 (Completion of the Work) only, the "scope of the remedy set forth in the 2010 ROD" is the design, construction, operation, maintenance, and evaluation of groundwater extraction wells, water treatment

systems, pipelines, pumps, conveyance systems, groundwater monitoring wells, and other equipment, needed to: 1) intercept and provide hydraulic control of contaminated groundwater in a targeted area of contamination identified in the 2010 ROD during all expected groundwater flow conditions; 2) deliver the treated groundwater to local water utilities for distribution to their customers; and 3) achieve, maintain, and satisfy the Performance Standards. If Settling Work Defendant objects to the EPA modification made pursuant to this Paragraph, Settling Work Defendant may, within thirty (30) Days after EPA's notification, seek dispute resolution under Paragraph 83 (Record Review).

b. The SOW and/or related work plans shall be modified: (i) in accordance with the modification issued by EPA; or (ii) if Settling Work Defendant invokes dispute resolution, in accordance with the final resolution of the dispute. The modification shall be incorporated into and enforceable under this Consent Decree, and Settling Work Defendant shall implement all work required by such modification. Settling Work Defendant shall incorporate the modification into the Remedial Design or Remedial Action Work Plan under Paragraph 16 or 17, as appropriate.

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

20. 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 Plaintiff that compliance with the Work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

21. Off-Site Shipment of Waste Material.

a. Settling Work Defendant may ship Waste Material from the B.F. Goodrich Superfund Site to an off-Site facility only if it verifies, prior to any shipment, that the off-Site facility is operating in compliance with the requirements of Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440, by obtaining a determination from EPA that the proposed receiving facility is operating in compliance with 42 U.S.C. § 9621(d)(3) and 40 C.F.R. § 300.440.

b. Settling Work Defendant may ship Waste Material from the B.F. Goodrich Superfund Site to an out of state waste management facility only if, prior to any shipment, Settling Work Defendant provides written notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten (10) cubic yards. The written notice shall include the following information, if available: (i) the name and location of the receiving facility; (ii) the type and

quantity of Waste Material to be shipped; (iii) the schedule for the shipment; and (iv) the method of transportation. Settling Work Defendant also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Settling Work Defendant shall provide the written notice after the award of the contract for Remedial Action construction and before the Waste Material is shipped.

VII. REMEDY REVIEW

22. Periodic Review. Settling Work Defendant shall conduct any studies and investigations that EPA requests in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five (5) years as required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations.

23. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the B.F. Goodrich Superfund Site in accordance with the requirements of CERCLA and the NCP.

24. Opportunity to Comment. Settling Work Defendant, the Cities, and if required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. § 9613(k)(2) or 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 and to submit written comments for the record during the comment period.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

25. Quality Assurance.

a. Settling Work Defendant shall use quality assurance, quality control, and chain of custody procedures for all design, compliance, and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" (EPA/240/B-01/003, March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/240/R-02/009, December 2002), and subsequent amendments to such guidelines upon notification by EPA to Settling Work Defendant, with a copy to the Cities, of such amendment. Amended guidelines shall apply only to procedures conducted after such notification.

b. Prior to the commencement of any monitoring project under this Consent Decree, Settling Work Defendant shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State and the Cities, a 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. Settling Work Defendant shall ensure that EPA personnel and its authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Work Defendant in implementing this Consent Decree. In addition, Settling Work Defendant shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. Settling Work Defendant 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 that are documented in the "USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4," and the "USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2," and any amendments made thereto during the course of the implementation of this Decree; however, upon approval by EPA, Settling Work Defendant may use other analytical methods which are as stringent as or more stringent than the CLP-approved methods. Settling Work Defendant shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. Settling Work Defendant shall use only laboratories that have a documented Quality System which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for

Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001, reissued May 2006) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements. Settling Work Defendant shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Consent Decree are conducted in accordance with the procedures set forth in the QAPP approved by EPA.

26. Upon request, Settling Work Defendant shall allow split or duplicate samples to be taken by EPA or its authorized representatives. Settling Work Defendant shall notify EPA not less than twenty-eight (28) Days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Settling Work Defendant to take split or duplicate samples of any samples it takes as part of Plaintiff's oversight of Settling Work Defendant's implementation of the Work.

27. Settling Work Defendant shall submit to EPA and the Cities copies of the results of all sampling and/or tests or other data obtained or generated by or on

behalf of Settling Work Defendant with respect to the B.F. Goodrich Superfund Site and/or the implementation of this Consent Decree unless EPA agrees otherwise.

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

IX. ACCESS

29. Access by Settling Defendants Other Than the San Bernardino County Settling Parties. If the B.F. Goodrich Superfund Site, or any other real property where access is needed or land/water use restrictions are needed, is owned or controlled by any of such Settling Defendants:

a. Such Settling Defendant shall, commencing on the date of lodging of the Consent Decree, provide the United States and Settling Work Defendant, and their representatives, contractors, and subcontractors, with access at all reasonable times, and, where feasible, with three working days' notice, to any portions of the B.F. Goodrich Superfund Site, or such other real property, over which they have ownership or control, to conduct any activity regarding the 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;

3) Conducting investigations regarding contamination at or near the B.F. Goodrich Superfund Site;

4) Obtaining samples;

5) Assessing the need for, planning, or implementing additional response actions at or near the B.F. Goodrich Superfund Site;

6) Assessing implementation of quality assurance and quality control practices as defined in the approved Quality Assurance Project Plans;

7) Implementing the Work pursuant to the conditions set forth in Paragraph 111 (Work Takeover);

8) Inspecting and copying records, operating logs, contracts, or other documents related to the Work that are maintained or generated by such Settling Defendants or Settling Work Defendant or their agents, consistent with Section XXIV (Access to Information);

9) Assessing such Settling Defendants' and Settling Work Defendant’s compliance with the Consent Decree; and

10) Determining whether the B.F. Goodrich Superfund Site or other real property is being used in a manner that is prohibited or restricted

under this Consent Decree, or that may need to be prohibited or restricted under the Consent Decree.

b. Commencing on the date of lodging of the Consent Decree, such Settling Defendants shall not use the B.F. Goodrich Superfund Site, or such other real property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material or interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action.

30. Access by the San Bernardino County Settling Parties. If the B.F. Goodrich Superfund Site, or any other real property where access is needed or land/water use restrictions are needed for the Work, is owned or controlled by any of the San Bernardino County Settling Parties:

a. San Bernardino County Settling Parties shall, commencing on the date of lodging of the Consent Decree, provide the United States and Settling Work Defendant, and their representatives, contractors, and subcontractors, with access at all reasonable times, and, where feasible, with three working days' notice, to any portions of the B.F. Goodrich Superfund Site, or such other real property, over which they have ownership or control, to conduct any activity regarding the 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;

3) Conducting investigations regarding contamination related to the B.F. Goodrich Superfund Site;

4) Obtaining samples related to the B.F. Goodrich Superfund Site;

5) Assessing the need for, planning, or implementing additional response actions related to the B.F. Goodrich Superfund Site;

6) Implementing the Work pursuant to the conditions set forth in Paragraph 111 (Work Takeover);

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

8) Assessing the San Bernardino County Settling Parties' and Settling Work Defendant's compliance with the Consent Decree; and

9) Determining whether the B.F. Goodrich Superfund Site or other real property is being used in a manner that is prohibited or restricted under this Consent Decree, or that may need to be prohibited or restricted under the Consent Decree.

b. Commencing on the date of lodging of the Consent Decree, the San Bernardino County Settling Parties shall not use the B.F. Goodrich Superfund Site, or other real property where access is needed or land/water use restrictions are needed for the Work, in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material or interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action.

31. If the B.F. Goodrich Superfund Site, or any other real property where access and/or land/water use restrictions, needed for performance of the Work, is owned or controlled by persons other than any Party to this Consent Decree, then Settling Work Defendant shall use its best efforts to secure from such persons:

a. An agreement to provide access thereto for the United States and Settling Work Defendant, and their representatives, contractors, and subcontractors, to conduct any activity regarding the Consent Decree including, but not limited to, the activities listed in Paragraph 29. a.;

b. An agreement, enforceable by Settling Work Defendant and the United States, to refrain from using the B.F. Goodrich Superfund Site, or such other real property, in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Materials or interfere with or adversely affect the implementation, integrity, or protectiveness of

the Remedial Action.

c. Such agreements shall include, but not be limited to, the execution and recordation in the appropriate land records office of Proprietary Controls, that (i) grant a right of access to conduct any activity regarding the Consent Decree including, but not limited to, those activities listed in Paragraph 29. a.

32. For purposes of Paragraph 31, "best efforts" include the payment of reasonable sums of money to obtain access, an agreement to restrict land/water use, a Proprietary Control, and/or an agreement to release or subordinate a prior lien or encumbrance. If, after Settling Work Defendant has exhausted its best efforts, Settling Work Defendant has not: (a) obtained agreements to provide access, restrict land/water use or record Proprietary Controls, as required by Paragraph 31. a. or 31. b.; or (b) obtained, pursuant to Paragraph 29 or 30, agreements from the holders of prior liens or encumbrances to release or subordinate such liens or encumbrances to the Proprietary Controls, Settling Work Defendant shall promptly notify the United States and the Cities in writing, and shall include in that notification a summary of the steps that Settling Work Defendant has taken to attempt to comply with Paragraph 29 or 31. The United States may, as it deems appropriate, assist Settling Work Defendant in obtaining access, agreements to restrict land/water use, Proprietary Controls, or the release or

subordination of a prior lien or encumbrance. Settling Work Defendant shall reimburse the United States under Section XVI (Establishment of Escrow and Trust Accounts, and Payments), for all costs incurred, direct or indirect, by the United States in obtaining such access, agreements to restrict land/water use, Proprietary Controls, and/or the release/subordination of prior liens or encumbrances including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

33. If EPA determines that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls are needed, Settling Work Defendant shall cooperate with EPA's, the State's and the Cities' efforts to secure and ensure compliance with such governmental controls.

34. In the event that any of the Settling Federal Agencies acquires an interest in any real property within the B.F. Goodrich Superfund Site, or other affected property, that Settling Federal Agency shall provide reasonable access to EPA and/or Settling Work Defendant, subject to the provisions of federal law and regulations, to effectuate the response actions set forth in this Consent Decree.

35. Notwithstanding any provision of the Consent Decree, the United States, the State, the County of San Bernardino, and the Cities retain all of their access authorities, access rights, rights to require Institutional Controls, and related

enforcement authorities under CERCLA, RCRA, and any other applicable statute, regulations, municipal codes, or ordinances.

X. REPORTING REQUIREMENTS

36. In addition to any other requirement of this Consent Decree, beginning in the first month following the Effective Date, Settling Work Defendant shall submit to EPA, with copies to the State and the Cities, monthly progress reports that: (a) describe deliverables submitted and actions taken during the previous month on each active task required by the SOW or the approved RD or RA Work Plans; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Work Defendant or its contractors or agents in the previous month; (c) describe problems arising since the previous report and steps planned or underway to mitigate the problems; (d) describe actions scheduled for the next two (2) months; (e) describe any anticipated changes in the schedule; (f) describe the nature of, duration of, and response to any noncompliance with Performance Standards or other requirements; and (g) describe any community relations activities completed during the previous month or planned for the next two (2) months. Progress reports are due by the tenth (10th) Day of every month. Settling Work Defendant shall submit these progress reports to EPA, with copies to the State and the Cities, by the tenth (10th) day of every month following the lodging of this Consent Decree until EPA notifies Settling

Work Defendant and the Cities pursuant to Paragraph 55. b. of Section XIV (Certifications of Completion). If requested by EPA, Settling Work Defendant shall also provide briefings for EPA to discuss the progress of the Work. After EPA issues its Certification of Completion of Construction of the Remedial Action pursuant to Paragraph 55 (Certification of Completion of Construction of the Remedial Action), Settling Work Defendant shall submit to EPA, with copies to the Cities, annual reports on the effectiveness of the Remedial Action.

37. Settling Work Defendant shall notify EPA and the Cities of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven (7) Days prior to the performance of the activity.

38. Upon the occurrence of any event during performance of the Work that Settling Work Defendant is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11004, Settling Work Defendant shall within twenty-four (24) 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), or, in the event that neither the EPA Project Coordinator nor Alternate EPA Project Coordinator is

available, the Emergency Response Section, Region 9, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 and/or EPCRA Section 304.

39. Within twenty (20) Days of the onset of such an event, Settling Work Defendant shall furnish to EPA, with copies to the Cities, a written report, signed by Settling Work Defendant's Project Coordinator, setting forth the events that occurred and the measures taken, and to be taken, in response thereto. Within thirty (30) Days of the conclusion of such an event, Settling Work Defendant shall submit a report to EPA setting forth all actions taken in response thereto, and provide copies to the Cities.

40. Settling Work Defendant shall submit all plans, reports, data, written notifications, and other deliverables required by the SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans to EPA in accordance with the schedules set forth in such plans. Settling Work Defendant shall simultaneously submit copies of all such plans, reports, data, written notifications, and other deliverables to the State and the Cities. Upon request by EPA, Settling Work Defendant shall submit in electronic form all or any portion of any deliverables Settling Work Defendant is required to submit pursuant to the provisions of this Consent Decree.

41. All deliverables submitted by Settling Work Defendant to EPA that

purport to document Settling Work Defendant's compliance with the terms of this Consent Decree shall be signed by an authorized representative of Settling Work Defendant.

XI. EPA APPROVAL OF PLANS, REPORTS, AND OTHER DELIVERABLES

42. Initial Submissions.

a. After review of any plan, report, or other deliverable that is required to be submitted for approval pursuant to this Consent Decree, EPA, shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

b. EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable plan, report, or deliverable.

43. Resubmissions. Upon receipt of a notice of disapproval under Paragraph 42. a. (iii) or (iv), or if required by a notice of approval upon specified conditions under Paragraph 42. a. (ii), Settling Work Defendant shall, within fourteen (14) Days or such longer time as specified by EPA in such notice, correct

the deficiencies and resubmit the plan, report, or other deliverable for approval. After review of the resubmitted plan, report, or other deliverable, EPA may: (a) approve, in whole or in part, the resubmission; (b) approve the resubmission upon specified conditions; (c) modify the resubmission; (d) disapprove, in whole or in part, the resubmission, requiring Settling Work Defendant to correct the deficiencies; or (e) any combination of the foregoing.

44. Material Defects. If an initially submitted or resubmitted plan, report, or other deliverable contains a material defect, and the plan, report, or other deliverable is disapproved or modified by EPA under Paragraph 42 or Paragraph 43 due to such material defect, then the material defect shall constitute a lack of compliance for purposes of Paragraph 87. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the accrual and payment of any stipulated penalties regarding Settling Work Defendant's submissions under this Section.

45. Implementation. Upon approval, approval upon conditions, or modification by EPA under Paragraph 42 or Paragraph 43, of any plan, report, or other deliverable, or any portion thereof: (a) such plan, report, or other deliverable, or portion thereof, shall be incorporated into and enforceable under this Consent Decree; and (b) Settling Work Defendant shall take any action required by such plan, report, or other deliverable, or portion thereof, subject only to their right to

invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. The implementation of any non deficient portion of a plan, report, or other deliverable submitted or resubmitted under Paragraph 42 or 43 shall not relieve Settling Work Defendant of any liability for stipulated penalties under Section XX (Stipulated Penalties).

XII. PROJECT COORDINATORS

46. Within forty (40) Days after the lodging of this Consent Decree, Settling Work Defendant and EPA will notify each other, in writing, and provide copies to the Cities, of the name, address, and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. 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 five (5) working days before the change occurs, unless impracticable, but in no event later than the actual day the change is made. Settling Work Defendant's Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. Settling Work Defendant's Project Coordinator shall not be an attorney for any Settling Defendant in this matter. He or she may assign other representatives, including other contractors, to serve as representatives for oversight of performance of daily

operations during remedial activities.

47. EPA may designate other representatives, including, but not limited to, EPA employees, and federal 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. 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 he or she determines that conditions at the B.F. Goodrich Superfund 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.

48. EPA's Project Coordinator and Settling Work Defendant's Project Coordinator will communicate regularly.

XIII. PERFORMANCE GUARANTEE

49. In order to ensure the full and final completion of the Work, Settling Work Defendant shall establish and maintain a performance guarantee, initially in the amount of a performance guarantee by Black & Decker Inc. of eighteen million seven hundred and fifty thousand dollars ($18,750,000) and by Settling Work

Defendant in the amount of the balance in the 2010 ROD Trust Fund (hereinafter collectively "estimated cost of the Work"). Furthermore, Black & Decker Inc. will assume all Settling Work Defendant's obligations under this Consent Decree in the event Settling Work Defendant defaults on those obligations, for the benefit of EPA, and the United States may then enforce those obligations as to Black & Decker Inc. pursuant to this Consent Decree. The performance guarantee, which must be satisfactory in form and substance to EPA, shall be in the form of one or more of the following mechanisms (provided that, if Settling Work Defendant intends to use multiple mechanisms, such multiple mechanisms shall be limited to surety bonds guaranteeing payment, letters of credit, trust funds, and insurance policies):

a. A surety bond unconditionally guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. One or more irrevocable letters of credit, payable to or at the direction of EPA, that is issued by one or more financial institution(s): (i) that has the authority to issue letters of credit and (ii) whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. A trust fund established for the benefit of EPA that is

administered by a trustee: (i) that has the authority to act as a trustee and (ii) whose trust operations are regulated and examined by a federal or state agency. For purposes of this Paragraph, the B.F. Goodrich Superfund Site 2010 ROD Trust Fund may qualify as a performance guarantee mechanism, if it is properly established consistent with this Paragraph and pursuant to other requirements of this Consent Decree. If the B.F. Goodrich Superfund Site 2010 ROD Trust Fund is used as a partial performance guarantee, Settling Work Defendant shall report to EPA the 2010 ROD Trust Fund's most recent balance annually on the anniversary of the Effective Date of this Decree. To the extent that any decrease in the 2010 ROD Trust Fund exceeds any corresponding reduction in the amount of the performance guarantee set forth in Paragraph 54 a., Settling Work Defendant shall offset such decrease with additional performance guarantees within thirty (30) Days after that anniversary date;

d. A policy of insurance that: (i) provides EPA with acceptable rights as a beneficiary thereof; and (ii) is issued by an insurance carrier (a) that has the authority to issue insurance policies in the applicable jurisdiction(s) and (b) whose insurance operations are regulated and examined by a federal or state agency;

e. A demonstration by Settling Work Defendant that it meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost

of the Work (plus the amount(s) of any other federal or any state environmental obligations financially assured through the use of a financial test or guarantee), provided that all other requirements of 40 C.F.R. § 264.143(f) are met to EPA's satisfaction; or

f. A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of a Settling Work Defendant, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with at least one (1) Settling Work Defendant; provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test and reporting requirements for owners and operators set forth in subparagraphs (1) through (8) of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work (plus the amount(s) of any other federal or any state environmental obligations financially assured through the use of a financial test or guarantee) that it proposes to guarantee hereunder.

50. Settling Work Defendant has selected, and EPA has found satisfactory, as the initial performance guarantee, the guarantee in the form set forth in Appendix G. Within ten (10) Days after the later of (1) the Effective Date or (2) the conclusion of the appeal process described in Paragraph 61, Settling Work Defendant shall execute or otherwise finalize all instruments or other

documents required in order to make the selected performance guarantee(s) legally binding in a form substantially identical to the documents attached hereto as Appendix G , and such performance guarantee(s) shall thereupon be fully effective. Within thirty (30) Days of the later of (1) the Effective Date or (2) the conclusion of the appeal process described in Paragraph 61, Settling Work Defendant shall submit copies of all executed and/or otherwise finalized instruments or other documents required in order to make the selected performance guarantee(s) legally binding to the EPA Regional Financial Management Officer in accordance with Section XXV (Notices and Submissions), with copies to the United States and EPA as specified in Section XXV (Notices and Submissions).

51. If, at any time after the Effective Date and before issuance of the Certification of Completion of the Work pursuant to Paragraph 57. b., Settling Work Defendant provides a performance guarantee for completion of the Work by means of a demonstration or guarantee pursuant to Paragraph 49. e. or 49. f., Settling Work Defendant shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f) relating to these mechanisms unless otherwise provided in this Consent Decree, including but not limited to: (a) the initial submission of required financial reports and statements from the relevant entity's chief financial officer ("CFO") and independent certified public accountant ("CPA"), in the form prescribed by EPA in its financial test sample CFO letters and CPA reports

available at:

http://www.epa.gov/compliance/resources/policies/cleanup/superfund/fa-test-samples.pdf; (b) the annual re-submission of such reports and statements within ninety (90) Days after the close of each such entity's fiscal year; and (c) the prompt notification of EPA, with copies to the Cities, after each such entity determines that it no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1) and in any event within ninety (90) Days after the close of any fiscal year in which such entity no longer satisfies such financial test requirements. For purposes of the performance guarantee mechanisms specified in this Section, references in 40 C.F.R. Part 264, Subpart H, to "closure," "post-closure," and "plugging and abandonment" shall be deemed to include the Work; the terms "current closure cost estimate," "current post-closure cost estimate," and "current plugging and abandonment cost estimate" shall be deemed to include the Estimated Cost of the Work; the terms "owner" and "operator" shall be deemed to refer to Settling Work Defendant making a demonstration under Paragraph 49. e.; and the terms "facility" and "hazardous waste facility" shall be deemed to include the B.F. Goodrich Superfund Site.

52. In the event that EPA determines at any time that a performance guarantee provided by Settling Work Defendant pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this

Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, or in the event that any Settling Work Defendant becomes aware of information indicating that a performance guarantee provided pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, Settling Work Defendant, within thirty (30) Days of receipt of notice of EPA's determination or, as the case may be, within thirty (30) Days of Settling Work Defendant becoming aware of such information, shall obtain and present to EPA for approval, with copies to the Cities, a proposal for a revised or alternative form of performance guarantee listed in Paragraph 49 that satisfies all requirements set forth in this Section; provided, however, that if Settling Work Defendant cannot obtain such revised or alternative form of performance guarantee within such thirty (30) Day period, and provided further that Settling Work Defendant shall have commenced to obtain such revised or alternative form of performance guarantee within such thirty (30) Day period, and thereafter diligently proceeds to obtain the same, EPA shall extend such period for such time as is reasonably necessary for Settling Work Defendant in the exercise of due diligence to obtain such revised or alternative form of performance guarantee, such additional period not to exceed sixty (60) Days. On Day thirty (30), Settling Work Defendant shall provide to EPA, with copies to the Cities, a status report on

its efforts to obtain the revised or alternative form of guarantee. In seeking approval for a revised or alternative form of performance guarantee, Settling Work Defendant shall follow the procedures set forth in Paragraph 54. b. 2). Settling Work Defendant's inability to post a performance guarantee for completion of the Work shall in no way excuse performance of any other requirements of this Consent Decree, including, without limitation, the obligation of Settling Work Defendant to complete the Work in strict accordance with the terms of this Consent Decree.

53. Funding for Work Takeover. The commencement of any Work Takeover pursuant to Paragraph 111 shall trigger EPA's right to receive the benefit of any performance guarantee(s) provided pursuant to Paragraphs 49. a., 49. b., 49. c., 49. d., or 49. f., and at such time EPA shall have immediate access to resources guaranteed under any such performance guarantee(s), whether in cash or in kind, as needed to continue and complete the Work assumed by EPA under the Work Takeover. Upon the commencement of any Work Takeover, if (a) for any reason EPA is unable to promptly secure the resources guaranteed under any such performance guarantee(s), whether in cash or in kind, necessary to continue and complete the Work assumed by EPA under the Work Takeover, or (b) in the event that the performance guarantee involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 49. e. or Paragraph 49. f. (ii), Settling

Work Defendant (or in the case of Paragraph 49. f. (ii), the guarantor) shall immediately upon written demand from EPA deposit into a special account within the EPA Hazardous Substance Superfund or such other account as EPA may specify, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of completing the Work as of such date, as determined by EPA. In addition, if at any time EPA is notified by the issuer of a performance guarantee that such issuer intends to cancel the performance guarantee mechanism it has issued, then, unless Settling Work Defendant provides a substitute performance guarantee mechanism in accordance with this Section no later than thirty (30) Days prior to the impending cancellation date, EPA shall be entitled (as of and after the date that is thirty (30) Days prior to the impending cancellation) to draw fully on the funds guaranteed under the then-existing performance guarantee. All EPA Work Takeover costs not reimbursed under this Paragraph shall be reimbursed under Section XVI (Establishment of Escrow and Trust Accounts, and Payments).

54. Modification of Amount and/or Form of Performance Guarantee

a. Reduction of Amount of Performance Guarantee. If Settling Work Defendant believes that the estimated cost of completing the Work has diminished below the amount set forth in Paragraph 49, Settling Work Defendant may, on any anniversary of the Effective Date, or at any other time agreed to by

EPA and Settling Work Defendant, petition EPA in writing, with copies to the Cities, to request a reduction in the amount of the performance guarantee provided pursuant to this Section so that the amount of the performance guarantee is equal to the estimated cost of completing the Work. Settling Work Defendant shall submit a written proposal for such reduction to EPA that shall specify, at a minimum, the estimated cost of completing the Work and the basis upon which such cost was calculated. In seeking approval for a reduction in the amount of the performance guarantee, Settling Work Defendant shall follow the procedures set forth in Paragraph 54. b. 2) for requesting a revised or alternative form of performance guarantee, except as specifically provided in this Paragraph 54. a. If EPA decides to accept Settling Work Defendant's proposal for a reduction in the amount of the performance guarantee, either to the amount set forth in Settling Work Defendant's written proposal or to some other amount as selected by EPA, EPA will notify Settling Work Defendant of such decision in writing and provide copies of the notification to the Cities. Upon EPA's acceptance of a reduction in the amount of the performance guarantee, the Estimated Cost of the Work shall be deemed to be the estimated cost of completing the Work set forth in EPA's written decision. After receiving EPA's written decision, Settling Work Defendant may reduce the amount of the performance guarantee in accordance with and to the extent permitted by such written acceptance and shall submit copies of all executed

and/or otherwise finalized instruments or other documents required in order to make the selected performance guarantee(s) legally binding in accordance with Paragraph 54. b. 2). In the event of a dispute, Settling Work Defendant may reduce the amount of the performance guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute pursuant to Section XIX (Dispute Resolution). No change to the form or terms of any performance guarantee provided under this Section, other than a reduction in amount, is authorized except as provided in Paragraph 52 or Paragraph 54. b.

b. Change of Form of Performance Guarantee.

1) If, after the Effective Date, Settling Work Defendant desires to change the form or terms of any performance guarantee(s) provided pursuant to this Section, Settling Work Defendant may, on any anniversary of the Effective Date, or at any other time agreed to by the United States and Settling Work Defendant, petition EPA in writing, and provide copies to the Cities, to request a change in the form or terms of the performance guarantee provided hereunder. The submission of such proposed revised or alternative performance guarantee shall be as provided in Paragraph 54. b. 2). Any decision made by EPA on a petition submitted under this Paragraph shall be made in EPA's sole and unreviewable discretion, and such decision shall not be subject to challenge by Settling Work Defendant pursuant to the dispute resolution provisions of this

Consent Decree or in any other forum.

2) Settling Work Defendant shall submit a written proposal for a revised or alternative performance guarantee to EPA, and provide copies to the Cities, which shall specify, at a minimum, the estimated cost of completing the Work, the basis upon which such cost was calculated, and the proposed revised performance guarantee, including all proposed instruments or other documents required in order to make the proposed performance guarantee legally binding. The proposed revised or alternative performance guarantee must satisfy all requirements set forth or incorporated by reference in this Section. Settling Work Defendant shall submit such proposed revised or alternative performance guarantee to the EPA Regional Financial Management Officer in accordance with Section XXV (Notices and Submissions). EPA will notify Settling Work Defendant in writing of its decision, and provide copies to the Cities of its decision, to accept or reject a revised or alternative performance guarantee submitted pursuant to this Paragraph. Within ten (10) Days after receiving a written decision approving the proposed revised or alternative performance guarantee, Settling Work Defendant shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected performance guarantee(s) legally binding in a form substantially identical to the documents submitted to EPA as part of the proposal, and such performance guarantee(s) shall thereupon be fully effective. Settling

Work Defendant shall submit copies of all executed and/or otherwise finalized instruments or other documents required in order to make the selected performance guarantee(s) legally binding to the EPA Regional Financial Management Officer and to the Cities within thirty (30) Days of receiving a written decision approving the proposed revised or alternative performance guarantee in accordance with Section XXV (Notices and Submissions) and to the United States and EPA as specified in Section XXV.

c. Release of Performance Guarantee. Settling Work Defendant shall not release, cancel, or discontinue any performance guarantee provided pursuant to this Section except as provided in this Paragraph. If Settling Work Defendant receives written notice from EPA in accordance with Paragraph 57 that the Work has been fully and finally completed in accordance with the terms of this Consent Decree, or if EPA otherwise so notifies Settling Work Defendant in writing, with copies to the Cities, Settling Work Defendant may thereafter release, cancel, or discontinue the performance guarantee(s) provided pursuant to this Section. In the event of a dispute, Settling Work Defendant may release, cancel, or discontinue the performance guarantee(s) required hereunder only in accordance with a final administrative or judicial decision resolving such dispute pursuant to Section XIX (Dispute Resolution).

XIV. CERTIFICATIONS OF COMPLETION

55. Completion of Construction of the Remedial Action

a. Within ninety (90) Days after Settling Work Defendant concludes that the Construction of the Remedial Action has been fully performed, consistent with the requirements in the SOW, Settling Work Defendant shall schedule and conduct a Final Construction Inspection to be attended by Settling Work Defendant and EPA, with an opportunity for the Cities to attend at their discretion. If, after the Final Construction Inspection, Settling Work Defendant still believes that Construction of the Remedial Action has been fully performed and the requirements of the SOW related to Construction of the Remedial Action have been achieved, it shall submit a written report and request for certification to EPA for approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables), with copies to the Cities and County of San Bernardino, within thirty (30) Days after the inspection. In the report, a registered professional engineer and Settling Work Defendant's Project Coordinator shall state that Construction of the Remedial Action has been completed in full satisfaction of the requirements of the SOW and this Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of Settling Work Defendant or Settling Work Defendant's Project

Coordinator:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, 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 completion of the Final Construction Inspection and receipt and review of the written report, EPA determines that the Construction of the Remedial Action or any portion thereof has not been completed in accordance with the SOW or this Consent Decree, EPA will notify Settling Work Defendant in writing, and provide copies to the Cities, of the activities that must be undertaken by Settling Work Defendant pursuant to this Consent Decree to complete the Construction of the Remedial Action, provided, however, that EPA may only require Settling Work Defendant to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with Settling Work Defendant's obligations in Paragraph 6 and the "scope of the remedy set forth in the 2010 ROD," as that term is defined in Paragraph 19. a. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require Settling Work Defendant to submit a schedule to EPA for approval

pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables). Settling Work Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to its right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion of Construction of the Remedial Action, that Construction of the Remedial Action has been performed in accordance with the SOW and this Consent Decree, EPA will so certify in writing to Settling Work Defendant, and provide copies to the Cities and County of San Bernardino. This certification shall constitute the Certification of Completion of Construction of the Remedial Action for purposes of this Consent Decree. Certification of Completion of Construction of the Remedial Action shall not affect Settling Work Defendant's remaining obligations under this Consent Decree, and specifically shall not affect Settling Work Defendant's obligation under this Consent Decree to achieve and maintain Performance Standards.

56. Completion of Startup Activities.

a. Within ninety (90) Days after Settling Work Defendant concludes that the remedy is Operational and Functional, Settling Work Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling

Work Defendant and EPA, with an opportunity for the Cities to attend at their discretion. If, after the pre-certification inspection, Settling Work Defendant still believes that the remedy is Operational and Functional, it shall submit a Request for Certification and draft Remedial Action Report to EPA for approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables), with copies to the State, the Cities, and the County of San Bernardino, within thirty (30) Days of the inspection. In the report, a registered professional engineer and Settling Work Defendant's Project Coordinator shall state that the remedy is Operational and Functional. The Remedial Action Report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of Settling Work Defendant or Settling Work Defendant's Project Coordinator:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, 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 completion of the pre-certification inspection and receipt and review of the draft Remedial Action Report, EPA, determines that the remedy or any portion

thereof is not Operational and/or Functional, EPA will notify Settling Work Defendant in writing, and provide copies to the Cities and the County of San Bernardino, of the activities that must be undertaken by Settling Work Defendant pursuant to this Consent Decree to complete Startup Activities, provided, however, that EPA may only require Settling Work Defendant to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with Settling Work Defendant's obligations in Paragraph 6 and the "scope of the remedy set forth in the 2010 ROD," as that term is defined in Paragraph 19. a. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require Settling Work Defendant to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables). Settling Work Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to its right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion of Startup Activities, that Startup Activities have been performed in accordance with this Consent Decree, EPA will so certify in writing to Settling Work Defendant and provide copies to the Cities and the County of San Bernardino. This certification shall constitute the Certification of

Completion of Startup Activities for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants, Releases, and Reservations of Rights). Certification of Completion of Startup Activities shall not affect Settling Work Defendant's remaining obligations to complete the Work pursuant to this Consent Decree.

57. Completion of the Work.

a. Within ninety (90) Days after Settling Work Defendant concludes that the Work, other than any remaining activities required under Section VII (Remedy Review), have been fully performed, Settling Work Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendant and EPA, with an opportunity for the Cities and the County of San Bernardino to attend at their discretion. If, after the pre-certification inspection, Settling Work Defendant still believes that the Work has been fully performed, Settling Work Defendant shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree to EPA for approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables), with copies to the Cities and the County of San Bernardino. The report shall contain the statement set forth in Paragraph 55. a., signed by a responsible corporate official of Settling Work Defendant or Settling Work Defendant's Project Coordinator. If,

after review of the written report, EPA, after reasonable opportunity for review and comment by the State and the Cities, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Work Defendant in writing, and provide Copies to the Cities and the County of San Bernardino of the activities that must be undertaken by Settling Work Defendant pursuant to this Consent Decree to complete the Work, provided, however, that EPA may only require Settling Work Defendant to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with Settling Work Defendant's obligations in Paragraph 6 and the "scope of the remedy set forth in the 2010 ROD," as that term is defined in Paragraph 19. a. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require Settling Work Defendant to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans, Reports, and Other Deliverables). Settling Work Defendant 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).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion of the Work by Settling Work Defendant and after a reasonable opportunity for review and comment by the State and Rialto,

that the Work has been performed in accordance with this Consent Decree, EPA will so notify Settling Work Defendant in writing and provide copies to the Cities and the Settling Defendants.

XV. EMERGENCY RESPONSE

58. If any action or occurrence during the performance of the Work causes or threatens a release of Waste Material from the B.F. Goodrich Superfund Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Work Defendant 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. If neither of these persons is available, Settling Work Defendant shall notify the EPA Emergency Response Unit, Region 9. Settling Work Defendant shall also immediately notify Rialto and Colton. Settling Work Defendant shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer 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 Settling Work Defendant fails to take appropriate response action as required by this Section, and EPA takes such action instead, Settling Work Defendant shall

reimburse EPA all costs of the response action under Section XVI (Establishment of Escrow Account, Trust Fund, and Payments). To the extent the emergency situation requires Settling Work Defendant to take any action involving further 2010 ROD Capital Costs and/or 2010 ROD O&M Costs, the United States shall, as provided in Paragraphs 66. d. and 66. e., reimburse Settling Work Defendant for fifty percent (50%) of those costs; provided that, in the event the emergency situation was caused by the Settling Work Defendant or any of its contractors or subcontractors, Settling Work Defendant shall pay the costs of any response action needed to address the emergency situation.

59. Subject to Section XXI (Covenants, Releases, and Reservations of Rights), nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States: (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 B.F. Goodrich Superfund 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 B.F. Goodrich Superfund Site.

XVI. ESTABLISHMENT OF ESCROW ACCOUNT, TRUST FUND, AND PAYMENTS

60. General Statement Regarding Purpose and Use of B. F. Goodrich Superfund Site Escrow Account and B.F. Goodrich Superfund Site 2010 ROD Trust Fund. This Paragraph is intended to explain the mechanisms and purposes of the remainder of this Section, and does not alter or supersede any other portion of this Consent Decree. The mechanisms and purposes are as follows: All funds paid by any Settling Defendant and by Settling Federal Agencies will be paid into the B.F. Goodrich Superfund Site Escrow Account described in Paragraph 61 below. The Escrow Account will in turn fund: (1) a payment of twenty-one million four hundred fifty thousand ($21,450,000) to the B.F. Goodrich Superfund Site 2010 ROD Trust Fund as described in Paragraph 70. a. 1) a), which shall be used by Settling Work Defendant to fund and/or reimburse the cost of the Work; (2) payments to Colton and Rialto as described in Paragraphs 70. a. 1) b) and 70. a. 1) c); and (3) payment of the residuary, if any, to EPA, which EPA will deposit into the B.F. Goodrich Special Account as described in Paragraph 70. a. 1) d). In addition, EPA shall transfer two million eight hundred thousand dollars ($2,800,000) to the B. F. Goodrich Superfund Site Disbursement Special Account ("Initial Disbursement Special Account"), from which account Settling Work Defendant may seek reimbursement for certain costs of the Work as described in

Paragraph 69. Settling Work Defendant generally bears the responsibility of funding and performing the Work, and may draw on the 2010 ROD Trust Fund and/or seek reimbursement from the Initial Disbursement Special Account to do so. However, Settling Work Defendant is only permitted to spend up to ten million dollars ($10,000,000) in total from the 2010 ROD Trust Fund and the Initial Disbursement Special Account combined for the 2010 ROD Capital Costs. 2010 ROD Capital Costs beyond ten million dollars ($10,000,000) will not be funded by the 2010 ROD Trust Fund or Initial Disbursement Special Account; rather, they will be funded equally by Settling Work Defendant (50 percent) and Settling Federal Agencies (50 percent) as described in Paragraph 66. d. below. Settling Work Defendant shall be responsible for the 2010 ROD O&M Costs for the first twenty-five (25) years of operation, and may use the 2010 ROD Trust Fund for that purpose until it is exhausted. Settling Work Defendant and Settling Federal Agencies shall equally (50 percent each) fund 2010 ROD O&M Costs beyond the first twenty-five (25) years of the 2010 ROD's operation, as described in Paragraph 66. e. below.

61. Establishment and Maintenance of the B.F. Goodrich Superfund Site Escrow Account. No later than ten (10) working days after Settling Work Defendant receives notice that this Consent Decree has been lodged with the Court, Settling Work Defendant shall assure that an escrow account entitled the B.F.

Goodrich Superfund Site Escrow Account is established at a bank whose trust operations are regulated and examined by a federal or state agency. The purpose of the B.F. Goodrich Superfund Site Escrow Account is to receive, hold, and distribute (as jointly authorized by Rialto, Colton, EPA, and Settling Work Defendant) certain settlement payments required by this Consent Decree. However, if the Court's entry or failure to enter this Consent Decree is appealed for any reason which would implicate funds placed in the B.F. Goodrich Superfund Site Escrow Account, and the appeal process results in the Consent Decree being vacated, funds in the B.F. Goodrich Superfund Site Escrow Account shall be returned to each Party that made payment into the B.F. Goodrich Superfund Site Escrow Account in the amount of such payment, together with the interest earned thereon, if any, within fifteen (15) Days of the conclusion of the appeal process. These and other terms of the B.F. Goodrich Superfund Site Escrow Account, and the instructions to the Escrow Agent, shall be mutually agreed upon by Settling Work Defendant and the United States, consistent with this Consent Decree. Settling Work Defendant is responsible for establishing and maintaining the B.F. Goodrich Superfund Site Escrow Account, including but not limited to paying all account fees, if any. The B.F. Goodrich Superfund Site Escrow Account shall be subject to the continuing jurisdiction of the Court. All disputes related to the B.F. Goodrich Superfund Site Escrow Account shall be subject to the dispute resolution

procedures set forth in Section XIX (Dispute Resolution).

62. Establishment and Maintenance of the B.F. Goodrich Superfund Site 2010 ROD Trust Fund. No later than thirty (30) Days after the later of (1) the Effective Date or (2) the conclusion of the appeal process described in Paragraph 61, Settling Work Defendant shall establish a trust fund entitled the B.F. Goodrich Superfund Site 2010 ROD Trust Fund ("2010 ROD Trust Fund"). Settling Work Defendant is responsible thereafter for maintaining the 2010 ROD Trust Fund, including but not limited to paying all account fees, if any. Funds in the 2010 ROD Trust Fund may be invested only in Investment-Grade Debt Securities. The purpose of the B.F. Goodrich Superfund Site 2010 ROD Trust Fund is to receive, hold, and distribute certain settlement funds which Settling Work Defendant shall use only to pay for and/or reimburse necessary costs of response in implementing the Work, and, if Settling Work Defendant so chooses, as a performance guarantee, in accordance with the terms of this Consent Decree, except Settling Work Defendant may use no more than ten million dollars ($10,000,000) from the 2010 ROD Trust Fund and/or Initial Disbursement Special Account combined to pay for and/or reimburse 2010 ROD Capital Costs. Any funds remaining in the B.F. Goodrich Superfund Site 2010 ROD Trust Fund after EPA has certified the Completion of the Work pursuant to this Consent Decree shall be deposited into the B.F. Goodrich Superfund Site Special Account or deposited into the EPA

Hazardous Substances Superfund, whichever of the two EPA chooses.

63. Payment by Settling Cashout Defendants to the B.F. Goodrich Superfund Site Escrow Account. Within ten (10) working days of the Effective Date, or ten (10) working days after receiving payment instructions from the United States on behalf of EPA, whichever is later, Settling Cashout Defendants shall pay to the B.F. Goodrich Superfund Site Escrow Account the amounts set forth in Appendix D, in accordance with those payment instructions.

64. Payments by Settling Ability to Pay Defendants to the B.F. Goodrich Superfund Site Escrow Account. Within ten (10) working days of the Effective Date, or ten (10) working days after receiving payment instructions from the United States on behalf of EPA, whichever is later, Settling Ability to Pay Defendants shall pay to the B.F. Goodrich Superfund Site Escrow Account the amounts set forth in Appendix C, in accordance with those payment instructions.

65. Payments by the San Bernardino County Settling Parties to the B.F. Goodrich Superfund Site Escrow Account. Within ten (10) working days of the Effective Date, or ten (10) working days after receiving payment instructions from the United States on behalf of EPA, whichever is later, the San Bernardino County Settling Parties shall pay to the B.F. Goodrich Superfund Site Escrow Account two million dollars ($2,000,000), in accordance with those payment instructions.

66. Payments by Settling Federal Agencies.

a. Payment to B.F. Goodrich Superfund Site Escrow Account and Cities. Within sixty (60) Days after a final judgment, including any appeals, the United States, on behalf of Settling Federal Agencies, shall pay to the B.F. Goodrich Superfund Site Escrow Account twenty-one million two hundred fifty thousand dollars ($21,250,000), together with Interest accrued on that twenty-one million two hundred fifty thousand dollars ($21,250,000), if any. In the event that the United States, on behalf of the Settling Federal Agencies, enters into a settlement subsequent to the lodging of this Consent Decree with any entity, not a party to this Consent Decree, and provides additional consideration in that subsequent settlement, the payment of this subparagraph shall be reduced to nineteen million five hundred thousand dollars ($19,500,000), together with Interest accrued, if any. Interest on any amounts due under this subparagraph shall be paid at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the 61st day from the Effective Date of this Decree until the payment is made.

b. Any reduction in payment as described in Paragraph 66. a. will not affect the payments made by the B.F. Goodrich Superfund Site Escrow Account to the 2010 ROD Trust Fund, to Colton, and to Rialto, or the funds transferred by EPA to the Initial Disbursement Special Account, which shall remain as described in Paragraphs 70. a. 1) a), b), and c), and in Paragraph 69,

respectively.

c. The United States, on behalf of the Settling Federal Agencies, reserves the right to pay directly to the Cities in a separate agreement a portion of the payments that are otherwise due to Colton under Paragraph 70. a. 1) b) and Rialto under Paragraph 70. a. 1) c). Any such direct payment would reduce the amounts received by Colton under Paragraph 70. a. 1) b) by the amount of the direct payment to Colton, and to Rialto under Paragraph 70. a. 1) c) by the amount of the direct payment to Rialto, and would reduce the amount the Settling Federal Agencies pay to the B.F. Goodrich Superfund Site Escrow Account by the amount of the combined direct payment. The total amount of the Settling Federal Agencies' obligations would not change, and the obligations and commitments of Parties other than the United States, Rialto, and Colton would not change.

d. Payment to Settling Work Defendant for 2010 ROD Capital Costs in Excess of Ten Million Dollars. Subject to and in the manner described in Paragraph 66. f.-p., the United States, on behalf of Settling Federal Agencies, shall pay directly to Settling Work Defendant, and not into the B.F. Goodrich Superfund Site Escrow Account, fifty percent (50 percent) of Settling Work Defendant's 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000). Settling Work Defendant shall be solely responsible for the remaining fifty percent (50 percent) of the 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000).

e. Payment to Settling Work Defendant for 2010 ROD O&M Costs. Subject to and in the manner described in Paragraph 66. f.-p., the United States, on behalf of Settling Federal Agencies, shall, commencing twenty-five (25) years after the date of EPA's Certification of Completion of Construction of the Remedial Action issued pursuant to Paragraph 55 (Completion of Construction of the Remedial Action), pay directly to Settling Work Defendant, and not to the B.F. Goodrich Superfund Site Escrow Account, fifty percent (50 percent) of Settling Work Defendant's 2010 ROD O&M Costs; provided, however, that this cost sharing shall not take effect until after all funds in the 2010 ROD Trust Fund have been exhausted. Settling Work Defendant shall be solely responsible for the first twenty-five (25) years of 2010 ROD O&M Costs and thereafter the remaining fifty percent (50 percent) of those costs.

f. On or before August 15 of each calendar year, Settling Work Defendant will send the United States a statement that includes an accounting of 2010 ROD Capital Costs and 2010 ROD O&M Costs paid from January 1 to June 30 of that year (if any). On or before February 15 of each succeeding calendar year, Settling Work Defendant will send the United States a statement that includes an accounting of 2010 ROD Capital Costs or 2010 ROD O&M Costs paid from July 1 to December 31 of the preceding calendar year (if any). No accounting is required by this Paragraph if Settling Work Defendant has not incurred 2010 ROD

Capital Costs or 2010 ROD O&M Costs during the applicable six (6) month period. In no event shall Settling Work Defendant submit or be entitled to recover from the United States a 2010 ROD Capital Cost or 2010 ROD O&M Cost more than two (2) years after it has been incurred by Settling Work Defendant.

g. Included with each statement shall be copies of invoices, a description of the Work underlying the invoices, and other documentation reasonably requested by the United States sufficient to support the claimed 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000) and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M. Each statement shall also contain a certification by Settling Work Defendant under penalty of perjury that each claimed item qualifies as 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000) and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, and was incurred and paid by Settling Work Defendant. As a precondition for seeking reimbursement, Settling Work Defendant shall also certify under penalty of perjury that they have not recovered any claimed 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, from the United States or from any other source, including insurers. Settling Work Defendant shall notify the United States before making any claims to other parties for reimbursement of 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or

2010 ROD O&M Costs beyond twenty-five (25) years of O&M.

h. Within ninety (90) Days of the United States' receipt of each accounting statement, the United States, on behalf of Settling Federal Agencies, shall reimburse Settling Work Defendant fifty percent (50 percent) of the 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, contained in the statement that are properly included and supported, except as otherwise provided in Paragraph 66. i. of this Consent Decree. Payment shall be made pursuant to instructions given by Settling Work Defendant, provided these instructions comply with federal and any other applicable law.

i. If Settling Work Defendant fails to support 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, with documentation required in Paragraph 66. g., or otherwise fails to demonstrate that a cost is properly reimbursable under this Consent Decree, the United States may object, in writing, within sixty (60) Days of receipt of the statement, and said objection shall be sent to Settling Work Defendant's designated counsel. Any such objection shall identify the contested cost item and the basis for objection. In the event of an objection, the United States, on behalf of Settling Federal Agencies, shall, within the ninety (90) Day period, reimburse its share of any uncontested 2010 ROD

Capital Costs in excess of ten million dollars ($10,000,000) and 2010 ROD O&M Costs beyond twenty-five (25) years of O&M to Settling Work Defendant. After the transmission of any objection, the United States shall initiate the dispute resolution procedures provided in this Paragraph.

j. If any payment required to be made by this Paragraph is not made in accordance with the provisions of this Section, Interest on the unpaid balance shall accrue from the date on which the payment was due.

k. If the United States determines for any reason that a portion of 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, for which reimbursement was made to Settling Work Defendant pursuant to this Consent Decree was not properly subject to reimbursement, the United States, on behalf of Settling Federal Agencies, may demand credit, with Interest, of all payments made previously with regard to those costs, which credit shall be applied to Settling Work Defendant's subsequent demands for 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M. Within sixty (60) Days of receiving such a demand, Settling Work Defendant shall credit such prior payments to the United States, on behalf of Settling Federal Agencies, with Interest from the date of the prior payments to the date of return of those payments, unless Settling Work Defendant

provides written notice contesting that demand for credit within said sixty (60) Day period, in which case the dispute resolution provisions of this Paragraph shall take effect. The United States, on behalf of Settling Federal Agencies, shall not demand credit for any payment of 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, more than two (2) years after it has made that payment, except in cases of fraud or bad faith, or where the United States could not have reasonably determined, from the information submitted by Settling Work Defendant before the payment, that a claimed cost was not a valid 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M.

l. A determination by the United States not to object to 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, shall not constitute an admission, agreement, understanding, or other indication by the United States that any such cost is within the scope of this Consent Decree, that such cost was necessary or incurred consistent with the NCP, or is otherwise reimbursable under this Consent Decree or under any statute, regulation, or other provision of law or equity.

m. <u>Dispute Resolution for Settling Work Defendant's 2010 ROD</u>

Capital Costs in Excess of Ten Million Dollars and 2010 ROD O&M Costs Beyond Twenty-Five Years of O&M. Any dispute with respect to the obligation of the United States, on behalf of Settling Federal Agencies, to reimburse 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25) years of O&M, under this Consent Decree shall in the first instance be the subject of informal negotiations between the United States and Settling Work Defendant. The period for informal negotiations shall last sixty (60) Days from the date the United States transmits its objection pursuant to this Paragraph, or Settling Work Defendant transmits an intention to contest a demand for credit, unless this period is extended by written agreement of the United States and Settling Work Defendant. If informal negotiations are unsuccessful, the United States and Settling Work Defendant may notify the Court of the dispute and the need for a resolution, either by the Court or through the use of Court-annexed alternative dispute resolution procedures, unless the United States and Settling Work Defendant agree in writing, and provide copies to the Cities, to an alternative method of dispute resolution.

n. In the event informal negotiations are unsuccessful, neither the United States nor Settling Work Defendant shall submit or rely on any evidence, in any form, to resolve the disputed 2010 ROD Capital Costs in excess of ten million dollars ($10,000,000), and/or 2010 ROD O&M Costs beyond twenty-five (25)

years of O&M, that was not disclosed to the other party prior to the expiration of the informal negotiation period, except upon leave of Court or appointed/agreed mediator. However, nothing in this Paragraph shall preclude a party from submitting or relying on: (i) expert testimony; (ii) factual evidence not in existence at the time of the informal negotiation period; (iii) factual evidence not known to the party at the time of the informal negotiation period; or (iv) evidence that is, or was at the time of the informal negotiation period, exclusively within the possession of the other party.

o. If a reimbursement is determined to be due, the United States, on behalf of Settling Federal Agencies, shall pay the sum determined to be due within sixty (60) Days of the resolution of the dispute (with accrued Interest pursuant to this Consent Decree). If a credit is determined to be due to the United States, on behalf of Settling Federal Agencies, pursuant to this Paragraph, such credit shall be applied to Settling Work Defendant's subsequent claims for reimbursement. In the event Settling Work Defendant makes no subsequent claims for reimbursement exceeding the credit, then it shall refund any remaining credit to the United States, on behalf of Settling Federal Agencies, with Interest accruing from the date the credit was determined due.

p. Interest. In the event that any payment required by Paragraph 66. d. or e. is not made within the time frame provided therein, Interest on the

unpaid balance shall be paid at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the date it was due.

67. The Parties to this Consent Decree recognize and acknowledge that the payment obligations of Settling Federal Agencies under 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 any Settling Federal Agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

68. Payments by Settling Work Defendant to EPA for Future Response Costs. In the event that EPA incurs Future Response Costs, Settling Work Defendant is required to pay under this Consent Decree only those Future Response Costs that are related to Section IX (Access) and/or Paragraph 111 (Work Takeover) and are necessary and not inconsistent with the NCP.

69. Establishment of B.F. Goodrich Superfund Site Disbursement Special Account and Reimbursement of Settling Work Defendant's Expenditures. Within thirty (30) Days after the Effective Date, EPA shall establish the B.F. Goodrich Superfund Site Disbursement Special Account ("Initial Disbursement Special Account") and shall transfer two million eight hundred thousand dollars ($2,800,000) from the B.F. Goodrich Superfund Site Special Account to the Initial

Disbursement Special Account. Subject to the terms and conditions set forth in this Paragraph, EPA agrees to make the funds in the Initial Disbursement Special Account, including Interest earned on such funds, available for disbursement to Settling Work Defendant as partial reimbursement for performance of portions the Work undertaken by Settling Work Defendant.

a. Requests for Disbursement of Initial Disbursement Special Account Funds.

1) Within sixty (60) Days after the Effective Date, and no more frequently than twice per year thereafter, Settling Work Defendant shall submit to EPA a Cost Summary and Certification, as defined in Paragraph 69. a. 2), covering the Work performed pursuant to this Consent Decree up to the date of submission of that Cost Summary and Certification. Settling Work Defendant shall not include in any submission costs included in a previous Cost Summary and Certification if those costs have been previously sought and reimbursed, but may include any costs for Work not previously sought or reimbursed regardless of when the Work was performed.

2) Each Cost Summary and Certification shall include a complete and accurate written cost summary and certification of the necessary costs incurred and paid by Settling Work Defendant for the Work covered by the particular submission, excluding costs not eligible for disbursement under

Paragraph 69. c. Each Cost Summary and Certification shall contain the following statement signed by an Independent Certified Public Accountant:

> I certify that, to the best of my knowledge, after thorough investigation and review of Emhart Industries, Inc.'s documentation of costs incurred and paid for work performed pursuant to a certain Consent Decree entered by the District Court in Central District of California Case No. 09-01864 PSG (SSx) as Docket No. [____] on [DATE] during the period covered by this Cost Summary and Certification, the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

The Independent Certified Public Accountant shall also provide EPA a list of the documents that he or she reviewed in support of the Cost Summary and Certification. Upon request by EPA, Settling Work Defendant shall submit to EPA any additional information that EPA deems necessary for its review and approval of a Cost Summary and Certification.

3) If EPA finds that a Cost Summary and Certification includes a mathematical error, costs excluded under Paragraph 69. c., costs that are inadequately documented, or costs submitted in a prior Cost Summary and Certification, it will notify Settling Work Defendant and provide it an opportunity to cure the deficiency by submitting a revised Cost Summary and Certification. If Settling Work Defendant fails to cure the deficiency within thirty (30) Days after being notified of, and given the opportunity to cure, the deficiency, EPA will recalculate Settling Work Defendant's costs eligible for disbursement for that

submission and disburse the corrected amount to Settling Work Defendant. Settling Work Defendant may dispute EPA's recalculation under this Paragraph pursuant to Section XIX (Dispute Resolution). In no event shall Settling Work Defendant be disbursed funds from the Initial Disbursement Special Account in excess of amounts properly documented in a Cost Summary and Certification accepted or modified by EPA.

b. Timing, Amount, and Method of Disbursing Funds From the Initial Disbursement Special Account. Within thirty (30) Days after EPA's receipt of a Cost Summary and Certification, as defined by Paragraph 69. a. 2), or if EPA has requested additional information under Paragraph 69. a. 2), or a revised Cost Summary and Certification under Paragraph 69. a. 3), within thirty (30) Days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Paragraph, EPA shall disburse the funds from the Initial Disbursement Special Account.

c. Costs Excluded from Disbursement. The following costs are excluded from, and shall not be sought by Settling Work Defendant for, disbursement from the Initial Disbursement Special Account: (1) any payments made by Settling Work Defendant to the United States pursuant to this Consent Decree, including, but not limited to, any interest or stipulated penalties paid pursuant to Section XX (Stipulated Penalties); (2) attorneys' fees and costs, except

for reasonable attorneys' fees and costs necessarily related to obtaining access or institutional controls, as required by Section IX (Access); (3) costs of any response activities Settling Work Defendant performs that are not required under, or approved by EPA pursuant to, this Consent Decree; (4) costs related to Settling Work Defendant's litigation, settlement, development of potential contribution claims, or identification of defendants; (5) internal costs of Settling Work Defendant, including but not limited to, salaries, travel, or in-kind services, except for those costs that represent the work of employees of Settling Work Defendant directly performing the Work; (6) any costs incurred by Settling Work Defendant prior to the Effective Date, except for the Work required by Paragraph 6.b. and/or for other approved Work completed pursuant to this Consent Decree; or (7) any costs incurred by Settling Work Defendant pursuant to Section XIX (Dispute Resolution).

d. Termination of Disbursements from the Initial Disbursement Special Account. EPA's obligation to disburse funds from the Initial Disbursement Special Account under this Consent Decree shall terminate upon EPA's determination that Settling Work Defendant: (1) has knowingly submitted a materially false or misleading Cost Summary and Certification; (2) has submitted a materially inaccurate or incomplete Cost Summary and Certification, and has failed to correct the materially inaccurate or incomplete Cost Summary and

Certification within thirty (30) Days after being notified of, and given the opportunity to cure, the deficiency; or (3) failed to submit a Cost Summary and Certification as required by Paragraph 69 within thirty (30) Days (or such longer period as EPA agrees) after being notified that EPA intends to terminate its obligation to make disbursements pursuant to this Section because of Settling Work Defendant's failure to submit the Cost Summary and Certification as required by Paragraph 69. a. 2). EPA's obligation to disburse funds from the Initial Disbursement Special Account shall also terminate upon EPA's assumption of performance of any portion of the Work pursuant to Paragraph 111 (Work Takeover), when such assumption of performance of the Work is not challenged by Settling Work Defendant or, if challenged, is upheld under Section XIX (Dispute Resolution). Settling Work Defendant may dispute EPA's termination of special account disbursements under Section XIX (Dispute Resolution).

e. Recapture of Initial Disbursement Special Account Disbursements.

1) Upon termination of disbursements from the Initial Disbursement Special Account under Paragraph 69, if EPA has previously disbursed funds from the Initial Disbursement Special Account for activities specifically related to the reason for termination, *i.e.*, discovery of a materially false or misleading submission after disbursement of funds based on that

submission, EPA shall submit a bill to Settling Work Defendant for those amounts already disbursed from the Initial Disbursement Special Account specifically related to the reason for termination, plus Interest on that amount covering the period from the date of disbursement of the funds by EPA to the date of repayment of the funds by Settling Work Defendant.

2) Within 30 days after receipt of EPA's bill, Settling Work Defendant shall reimburse the EPA Hazardous Substance Superfund for the total amount billed. Payment shall be made in accordance with Paragraph 70. b. (Instructions for Future Response Cost Payments).

3) Upon receipt of payment, EPA may deposit all or any portion thereof in the B.F. Goodrich Superfund Site Special Account, the Initial Disbursement Special Account, or the EPA Hazardous Substance Superfund. The determination of where to deposit or how to use the funds shall not be subject to challenge by Settling Work Defendant pursuant to the dispute resolution provisions of this Consent Decree or in any other forum. Settling Work Defendant may dispute EPA's determination as to recapture of funds pursuant to Section XIX (Dispute Resolution).

f. Balance of Special Account Funds. After EPA issues its written Certification of Completion of the Work pursuant to this Consent Decree and after EPA completes all disbursements to Settling Work Defendant in

accordance with this Section, if any funds remain in the Initial Disbursement Special Account, EPA may transfer such funds to the B.F. Goodrich Superfund Site Special Account or to the EPA Hazardous Substance Superfund. Any transfer of funds to the B.F. Goodrich Superfund Site Special Account or to the EPA Hazardous Substance Superfund shall not be subject to challenge by Settling Work Defendant pursuant to the dispute resolution provisions of this Consent Decree or in any other forum.

70. Payment and Disbursement Instructions.

a. Payments to, and Disbursements from, the B.F. Goodrich Superfund Site Escrow Account. Each Settling Defendant, and the United States on behalf of Settling Federal Agencies, shall deposit its respective payment into the B.F. Goodrich Superfund Site Escrow Account in accordance with Paragraphs 61 and 63-66. Funds in the B.F. Goodrich Superfund Site Escrow Account shall be disbursed as follows:

1) The funds placed in the B.F. Goodrich Superfund Site Escrow Account, together with interest earned thereon, if any, shall be disbursed as described in this Paragraph 70.

a) Payment from the B.F. Goodrich Superfund Site Escrow Account to the 2010 ROD Trust Fund. Within seventy-five (75) Days of the Effective Date, or within seventy-five (75) Days of the conclusion of the appeal

process described in Paragraph 61, whichever comes later, the B.F. Goodrich Superfund Site Escrow Account Agent shall pay to the 2010 ROD Trust Fund the amount of twenty-one million four hundred fifty thousand dollars ($21,450,000) plus the interest, if any, earned on that sum to be used by Settling Work Defendant for necessary costs of response to implement the Work, in accordance with the terms of this Consent Decree.

b) Payment from the B.F. Goodrich Superfund Site Escrow Account to the City of Colton. Within seventy-five (75) Days of the Effective Date or within twenty-five (25) Days of the conclusion of the appeal process described in Paragraph 61, whichever comes later, the B.F. Goodrich Superfund Site Escrow Account Agent shall pay to Colton three million eight hundred thousand dollars ($3,800,000), plus the Interest, if any, earned on that sum.

c) Payment from the B.F. Goodrich Superfund Site Escrow Account to the City of Rialto. Within seventy-five (75) Days of the Effective Date or within twenty-five (25) Days of the conclusion of the appeal process described in Paragraph 61, whichever comes later, the B.F. Goodrich Superfund Site Escrow Account Agent shall pay to Rialto four million two hundred thousand dollars ($4,200,000), plus the interest, if any, earned on that sum.

d) Payment from the B.F. Goodrich Superfund Site Escrow Account to EPA. Upon request by the EPA, but no earlier than either seventy-five (75) Days after the Effective Date, or twenty-five (25) Days after the conclusion of the appeal process described in Paragraph 61, whichever comes later, the B.F. Goodrich Superfund Site Escrow Account Agent shall pay to the EPA from the funds remaining in the B.F. Goodrich Superfund Site Escrow Account (after the payments described in Paragraph 70. a. 1) a), b), and c) have been made from the account) any amount of remaining funds as specified by EPA, up to and including all remaining funds. Payments to the EPA shall be made in accordance with Paragraph 70. b., and shall be deposited by EPA in the B.F. Goodrich Superfund Site Special Account to be retained and used to conduct or finance response actions at or in connection with the B.F. Goodrich Superfund Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

2) If the Court's entry or failure to enter this Consent Decree is appealed for any reason which would implicate the funds placed in the B.F. Goodrich Superfund Site Escrow Account, and the appeal process results in the Consent Decree not being entered, the funds in the B.F. Goodrich Superfund Site Escrow Account shall be returned to each Party that made payment into the B.F. Goodrich Superfund Site Escrow Account in the amount of such payment, together with interest earned thereon, if any, within fifteen (15) Days of the

conclusion of the appeal process.

b. Instructions for Future Response Costs Payments and Stipulated Penalties. All payments required, elsewhere in this Consent Decree, to be made in accordance with this Paragraph 70. b. shall be made in accordance with instructions to be provided by EPA following lodging of the Consent Decree, and shall be identified as "future response costs payments" or "stipulated penalties" as applicable. All payments to be made under this Paragraph shall reference the EPA Site/Spill ID Number 09JW and DOJ Case Number 90-11-2-09952. At the time of any payment required to be made in accordance with Paragraph 70. b., Settling Defendants shall send notice that payment has been made to the United States, and to EPA, in accordance with Section XXV (Notices and Submissions), and to the EPA Cincinnati Finance Office by email at acctsreceivable.cinwd@epa.gov, or by mail at 26 Martin Luther King Drive, Cincinnati, Ohio 45268. Such notice shall also reference the EPA Site/Spill ID Number 09JW and DOJ Case Number 90-11-2-09952.

71. Settling Work Defendant may contest any Future Response Costs billed under Paragraph 68 (Payments by Settling Work Defendant to EPA for Future Response Costs) if it determines that EPA has made a mathematical error or included a cost item that is not within the categories of Future Response Costs Settling Work Defendant is required to pay as set forth in Paragraph 68, or if it

believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Such objection shall be made in writing within thirty (30) Days after receipt of the bill and must be sent to the United States pursuant to Section XXV (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Settling Work Defendant shall pay all uncontested Future Response Costs to the United States within thirty (30) Days after Settling Work Defendant's receipt of the bill requiring payment. Simultaneously, Settling Work Defendant shall establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation ("FDIC"), and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Settling Work Defendant shall send to the United States, as provided in Section XXV (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested Future 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, Settling Work Defendant shall initiate the dispute resolution procedures in Section XIX (Dispute

Resolution). If the United States prevails in the dispute, Settling Work Defendant shall pay the sums due (with accrued interest) to the United States within five (5) Days after the resolution of the dispute. If Settling Work Defendant prevails concerning any aspect of the contested costs, Settling Work Defendant shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States within five (5) Days after the resolution of the dispute. Settling Work Defendant shall be disbursed any balance of the escrow account. All payments to the United States under this Paragraph shall be made in accordance with Paragraph 70. b. (Instructions for Future Response Cost Payments). 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 Settling Work Defendant's obligation to reimburse the United States for its Future Response Costs.

72. Interest. In the event that any payment for Response Costs required under this Section is not made by the date required, any Settling Defendant that makes late payment shall pay Interest on the unpaid balance. The Interest to be paid under this Paragraph shall begin to accrue on the date the payment is required. The Interest shall accrue through the date of that Settling Defendant's payment. Payments of Interest made under this Paragraph shall be in addition to such other

remedies or sanctions available to Plaintiffs by virtue of any Settling Defendant's failure to make timely payments under Section XVI including, but not limited to, payment of stipulated penalties pursuant to Paragraph 87.

XVII. INDEMNIFICATION AND INSURANCE

73. Settling Work Defendant's Indemnification of the United States.

a. The United States does not assume any liability by entering into this Consent Decree or by virtue of any designation of Settling Work Defendant as EPA's authorized representative under Section 104(e) of CERCLA, 42 U.S.C. § 9604(e). Settling Work Defendant shall indemnify, save and hold harmless the United States and its 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 Settling Work Defendant, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of Settling Work Defendant as EPA's authorized representative under Section 104(e) of CERCLA. Further, Settling Work Defendant agrees to pay the United States all costs it incurs 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 based on negligent

or other wrongful acts or omissions of Settling Work Defendant, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Consent Decree. The United States shall not be held out as a party to any contract entered into by or on behalf of Settling Work Defendant in carrying out activities pursuant to this Consent Decree. Neither Settling Work Defendant nor any such contractor shall be considered an agent of the United States.

b. The United States shall give Settling Work Defendant notice of any claim for which it plans to seek indemnification pursuant to Paragraph 73. a., and shall consult with Settling Work Defendant prior to settling such claim.

c. Nothing in this Paragraph shall alter any obligations of the Settling Federal Agencies set forth elsewhere in this Consent Decree.

74. Settling Work Defendant covenants not to sue and agrees not to assert any claims or causes of action against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Settling Work Defendant and any person for performance of Work on or relating to the B.F. Goodrich Superfund Site, including, but not limited to, claims on account of construction delays. In addition, Settling Work Defendant shall indemnify and hold harmless the United States with respect to any and all claims

for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Settling Work Defendant and any person for performance of Work on or relating to the B.F. Goodrich Superfund Site, including, but not limited to, claims on account of construction delays.

75. No later than fifteen (15) Days before commencing any on-Site Work, Settling Work Defendant shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Work pursuant to Paragraph 57. b. of Section XIV (Certifications of Completion) commercial general liability insurance with limits of two million dollars ($2,000,000), for any one occurrence, and automobile liability insurance with limits of one million dollars ($1,000,000), combined single limit, naming the United States as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Settling Work Defendant pursuant to this Consent Decree. In addition, for the duration of this Consent Decree, Settling Work Defendant 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 Settling Work Defendant in furtherance of this Consent Decree. Prior to commencement of any on-Site Work under this Consent Decree, Settling Work Defendant shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Work

Defendant shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Work Defendant 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, Settling Work Defendant needs to provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

76. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Settling Defendants, of any entity controlled by Settling Defendants, or of Settling Defendants' contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the obligation. The requirement that Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (1) as it is occurring and (2) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. "Force majeure" does not include financial inability to complete the Work or a failure to achieve the Performance Standards.

77. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree for which Settling Defendants intend or may intend to assert a claim of force majeure, Settling Defendants 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, within forty-eight (48) hours of when Settling Defendants first knew that the event might cause a delay. Settling Defendants shall also provide such notification to the Cities. Within five (5) Days thereafter, Settling Defendants shall provide in writing to EPA, with copies to the Cities, 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; Settling Defendants' rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of Settling Defendants, such event may cause or contribute to an endangerment to public health or welfare, or the environment. Settling Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Settling Defendants shall be deemed to know of any circumstance of which Settling Defendants, any entity controlled by Settling Defendants, or Settling Defendants'

contractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Settling Defendants from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite the late notice, is able to assess to its satisfaction whether the event is a force majeure under Paragraph 76 and whether Settling Defendants have exercised their best efforts under Paragraph 76, EPA may, in its unreviewable discretion, excuse in writing Settling Defendants' failure to submit timely notices under this Paragraph.

78. If EPA agrees that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this Consent Decree that are affected by the force majeure 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 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, EPA will notify Settling Defendants in writing of its decision, and provide copies to the Cities. If EPA agrees that the delay is attributable to a force majeure, EPA will notify Settling Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure, and provide copies to the Cities.

79. If Settling Defendants elect to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than fifteen (15) Days after receipt of EPA's notice. In any such proceeding, Settling Defendants 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, 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 Settling Defendants complied with the requirements of Paragraphs 76 and 77. If Settling Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

80. Unless otherwise expressly provided for in this Consent Decree, such as in Paragraph 10. a. 2), 10. b. 2), or 66. m.-o., the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes regarding this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of Settling Defendants that have not been disputed in accordance with this Section.

81. Any dispute regarding this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The

period for informal negotiations shall not exceed twenty (20) 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 parties a written Notice of Dispute.

82. Statement of Position

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within twenty (20) Days after the conclusion of the informal negotiation period, Settling Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States, with copies to the Cities, 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 Settling Defendants. The Statement of Position shall specify Settling Defendants' position as to whether formal dispute resolution should proceed under Paragraph 83 or Paragraph 84.

b. Within forty (40) Days after receipt of Settling Defendants' Statement of Position, EPA will serve on Settling Defendants, with copies to the Cities, 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 83 or Paragraph 84. Within ten (10) Days after receipt of EPA's Statement of Position, Settling Defendants may submit a reply, with copies to the Cities.

c. If there is disagreement between EPA and Settling Defendants as to whether dispute resolution should proceed under Paragraph 83 or Paragraph 84, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if Settling Defendants ultimately appeal 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 83 and 84.

83. Record Review. Formal dispute resolution for disputes 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, the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree, and 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 Settling Defendants regarding the validity of the

2010 ROD's 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 by the parties to the dispute.

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 83. a. This decision shall be binding upon Settling Defendants, subject only to the right to seek judicial review pursuant to Paragraphs 83. c. and 83. d.

c. Any administrative decision made by EPA pursuant to Paragraph 83. b. shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by Settling Defendants with the Court and served on all Parties within ten (10) 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. Within ten (10) days of the filing of such motion, the United States may file a response to Settling Defendants' motion. The Cities will be served on all

pleadings, and will be allowed, at their discretion, to file a response within the timeline that applies to the United States.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants 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 83. a.

84. Unless otherwise provided in this Consent Decree, formal dispute resolution for disputes 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 Settling Defendants' Statement of Position submitted pursuant to Paragraph 82, 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 Settling Defendants unless, within ten (10) Days of receipt of the decision, Settling Defendants file with the Court and serve on the parties 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 Settling Defendants' motion.

b. Notwithstanding Paragraph N (CERCLA Section 113(j) Record Review of 2010 ROD and Work) of Section I (Background), judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

85. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone, or affect in any way any obligation of Settling Defendants under this Consent Decree, not directly in dispute, unless EPA 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 94. 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 Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

86. <u>Dispute Resolution By or Between Settling Work Defendant, Rialto, Colton, and/or the County of San Bernardino Regarding Implementation Agreements Entered Pursuant to Paragraphs 10 and 12</u>.

a. Informal Dispute Resolution. Any dispute regarding the implementation agreements entered into by and between Rialto, Colton, the County of San Bernardino, and Settling Work Defendant as provided for in Paragraphs 10 and 12 initially shall be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed twenty (20) 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 parties a written Notice of Dispute, a copy of which shall be provided to EPA, Rialto, Colton, the County of San Bernardino, the Settling Federal Agencies, and the Settling Work Defendant.

b. Resolution by this Court. If the parties are unable to resolve their dispute through informal dispute resolution, any party to the dispute may commence a proceeding in this action before this Court by motion as provided for in the Local Rules of the Central District of California.

c. Standard for Dispute Resolution. This Court shall resolve any dispute brought before it under this Paragraph under California contract law.

d. Additional Dispute Resolution Terms in Implementation Agreements. In their respective implementation agreements with each other as referenced in this Consent Decree, Settling Work Defendant, Rialto, Colton, and/or the County of San Bernardino may provide for additional or substitute terms

regarding dispute resolution of their commitments to each other. If they so provide, the terms of such implementation agreements will control the disputes between those parties in lieu of the dispute resolution procedure of this Paragraph 86.

XX. STIPULATED PENALTIES

87. Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraphs 88, 89. a., and 90 to the United States, and in the amounts set forth in Paragraph 89. b. to the Cities, for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XVIII (Force Majeure). "Compliance" by a Settling Defendant shall include completion of all payments and activities required of that Settling Defendant under this Consent Decree, or any plan, report, or other deliverable approved under this Consent Decree, in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans, reports, or other deliverables approved under this Consent Decree and within the specified time schedules established by and approved under this Consent Decree. No Settling Defendant shall be liable or otherwise responsible for any other Settling Defendant's violation of or failure to comply with the requirements of this Consent Decree, except where specifically provided.

88. <u>Stipulated Penalty Amounts - Work (Including Specifically</u>

Enumerated Deliverables).

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 88. b.:

Penalty Per Violation Per Day	Period of Noncompliance
$2,500	1st through 14th day
$5,000	15th through 30th day
$10,000	31st day and beyond

b. Performance of the Work and Compliance Milestones.

1) Failure to perform the Work as set forth in any and all EPA approved plans, and/or to submit the following deliverables in a timely and adequate fashion:

a) Remedial Design Work Plan;

b) Sampling & Analysis Plan and Health and Safety Plan for Remedial Design Investigation;

c) Remedial Design Investigation Report;

d) Preliminary Design;

e) Prefinal Design;

f) Final Design;

g) Construction Quality Assurance Plan;

h) Operation and Maintenance (O&M) Plan;

i) Compliance Monitoring Plan;

j) Sampling & Analysis Plan and Health and Safety Plan to support O&M and Compliance Monitoring;

k) Construction Health and Safety Plan;

l) Remedial Action Work Plan;

m) Remedial Action Report;

n) Submittal of Analytical Data; and/or

o) Submittal of Well Construction Information.

2) Failure to comply with the following Work schedule milestones:

a) Remedial Design Investigation;

b) Groundwater Flow Modeling;

c) Providing or arranging for access as set forth in Section IX (Access);

d) Start of RA Implementation;

e) Pre-Certification Inspections;

f) Completion of all outstanding items identified in the Pre-Certification Inspections; and/or

g) Start of Operation and Maintenance.

89. Stipulated Penalty Amounts - Late Payments.

a. Any Settling Defendant that makes a payment required by this Consent Decree after it is due shall be in violation of this Consent Decree and shall pay to the United States, as a stipulated penalty, as follows:

Penalty Per Violation Per Day	Period of Noncompliance
$1,000	1st through 7th day
$5,000	8th through 14th day
$10,000	15th through 30th day
$20,000	31st day and beyond

b. If the full payments due to the Cities, pursuant to Paragraphs 70. a. 1) b) and c) are not paid by their respective required date(s) as set forth therein, any Settling Defendant that has not made its payment required by Paragraphs 63-66 as of five (5) days before such payments are due to the Cities, shall be in violation of this Consent Decree and shall pay five thousand dollars ($5,000) per day to the unpaid City for each day after that Settling Defendant's payment required by Paragraphs 63, 64, 65, and/or 66 is due. Any payments pursuant to this subparagraph (89. b.) are due and payable within thirty (30) days after the date of the demand for payment.

90. Stipulated Penalty Amounts - Plans, Reports, and Other Deliverables Not Specified in Paragraph 88. The following stipulated penalties shall accrue per violation per day for failure to submit any plan, report, or other deliverable not specifically set forth in Paragraph 88. b.:

Penalty Per Violation Per Day	Period of Noncompliance
$1,250	1st through 14th day
$2,500	15th through 30th day
$7,500	31st day and beyond

91. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 111 (Work Takeover), Settling Work Defendant shall be liable for a stipulated penalty in the amount of the lesser of two million dollars ($2,000,000) or three times the Response Costs incurred in performance of all such Work. Stipulated penalties under this Paragraph are in addition to the remedies available under Paragraphs 53 (Funding for Work Takeover) and 111 (Work Takeover).

92. 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: (a) with respect to a deficient submission under Section XI (EPA Approval of Plans, Reports, and Other Deliverables), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendants of any deficiency; (b) with respect to a decision by the Director of the Superfund Division, EPA Region 9, under Paragraph 83. b. or 84. a. of Section XIX (Dispute

Resolution), during the period, if any, beginning on the 21st day after the date that Settling Defendants' reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (c) 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 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 in this Consent Decree shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

93. Following EPA's determination that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written notification, and provide copies to the Cities, of the same and describe the noncompliance. EPA may send Settling Defendants a written demand for the payment of the penalties, and provide Copies to the Cities. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Settling Defendants of a violation.

94. All penalties accruing under this Section shall be due and payable to the United States within thirty (30) Days of Settling Defendants' receipt from EPA of a demand for payment of the penalties, unless Settling Defendants invoke the dispute resolution procedures under Section XIX (Dispute Resolution) within the

thirty (30) Day period. All payments to the United States under this Section shall indicate that the payment is for stipulated penalties, and shall be made in accordance with Paragraph 70. b. (Payment Instructions). Under no circumstance may a stipulated penalty, or any portion thereof, be paid from the B. F. Goodrich Superfund Site 2010 ROD Trust Fund or funds derived therefrom.

95. Penalties shall continue to accrue as provided in Paragraph 92 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of EPA that is not appealed to this Court, accrued penalties so determined to be owed shall be paid to EPA within fifteen (15) Days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendants shall pay all accrued penalties determined by the Court to be owed to EPA within sixty (60) Days of receipt of the Court's decision or order, except as provided in Paragraph 95. c.;

c. If the District Court's decision is appealed by any Party, Settling Defendants shall pay all accrued penalties determined by the District Court to be owed to the United States into an interest-bearing escrow account within sixty (60) 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 sixty (60) Days. Within

fifteen (15) Days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to Settling Defendants to the extent that they prevail.

96. If any Settling Defendant fails to pay stipulated penalties when due, that Settling Defendant shall pay Interest on the unpaid stipulated penalties as follows: (a) if that Settling Defendant has timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to Paragraph 94 until the date of payment; and (b) if that Settling Defendant fails to timely invoke dispute resolution, Interest shall accrue from the date of demand under Paragraph 94 until the date of payment. If any Settling Defendant fails to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest against that Settling Defendant.

97. The payment of penalties and Interest, if any, shall not alter in any way Settling Work Defendant's obligation to complete the performance of the Work required under this Consent Decree.

98. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Settling Defendants' violation of this

Consent 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 provided in this Consent Decree, except in the case of a willful violation of this Consent Decree. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

99. Stipulated Penalty Amounts Regarding Colton's and Rialto's Commitments Under Paragraphs 10. a. 1) and 10. b. 1). Rialto and Colton shall be liable for per day/per violation stipulated penalties, for each day that such penalties accrue as provided below, for their failure to comply with their respective commitments under Paragraphs 10. a. 1) and/or 10. b. 1):

Penalty Per Violation Per Day	Period of Noncompliance
Up to $250	1st through 30th day
Up to $500	31st through 60th day
Up to $1000	61st day and beyond

All stipulated penalties shall begin to accrue on the day after Rialto or Colton (as appropriate) receives from EPA written notice of an alleged failure to perform

pursuant to Paragraph 10. a. 2) or 10. b. 2), unless Rialto or Colton (as appropriate) within seven (7) working days after receipt of such notice either (i) corrects the failure to perform, or (ii) serves upon EPA its statement of position and backup documentation to contest the alleged failure to perform or the corrective action requested by EPA, in which event the stipulated penalties which otherwise would have accrued during this period are waived. If Rialto or Colton has timely served upon EPA its statement of position to contest the alleged failure or the requested corrective action, stipulated penalties shall not accrue until Rialto or Colton receives the final written decision regarding the dispute from the Division Director of the Superfund Division of EPA Region 9. If the Division Director finds in favor of Rialto or Colton regarding the dispute, no stipulated penalties will be due. If the Division Director's decision is not in favor of Rialto or Colton, stipulated penalties will accrue on the day after receipt of that decision, and will continue accruing until Rialto or Colton either corrects the performance failure or until Rialto or Colton files with the Court its motion to resolve the dispute with EPA. Stipulated penalties will thereafter not accrue until the Court issues a final decision regarding the dispute. No stipulated penalties will be due if Rialto or Colton prevails in its dispute with the Court, or it the Court finds that Rialto's or Colton's delay or failure to perform was excusable nonperformance under the same standards and procedures set forth in Section XVIII (Force Majeure). Nothing in this Consent

Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States on behalf of EPA to seek any other remedies or sanctions available by virtue of violation by Rialto or Colton of this Consent 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 against Rialto or Colton for any violation for which a stipulated penalty is provided pursuant to this Paragraph. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XXI. COVENANTS, RELEASES, AND RESERVATIONS OF RIGHTS

A. COVENANTS AND RESERVATIONS OF RIGHTS BY THE UNITED STATES ON BEHALF OF EPA

100. Covenants for Settling Work Defendant and Emhart Related Parties by United States on Behalf of EPA. In consideration of the actions that will be performed and the payments that will be made by Settling Work Defendant under this Consent Decree, and except as specifically provided in Paragraphs 105-109 of this Section, the United States on behalf of EPA covenants not to sue or to take administrative action against Settling Work Defendant and/or Emhart Related

Parties pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for the B.F. Goodrich Superfund Site. These covenants are conditioned upon the satisfactory performance by Settling Work Defendant of its obligations under this Consent Decree or stipulated penalties due under Section XX (Stipulated Penalties). These covenants extend only to Settling Work Defendant and Emhart Related Parties and do not extend to any other person except as specifically set forth in this Consent Decree.

101. Covenants for Settling Cashout Defendants by United States on Behalf of EPA. In consideration of the payments that will be made by Settling Cashout Defendants under this Consent Decree, and except as specifically provided in Paragraphs 105-107 and 109 of this Section, the United States on behalf of EPA covenants not to sue or to take administrative action against Settling Cashout Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for the B.F. Goodrich Superfund Site. For each Settling Cashout Defendant, these covenants shall take effect upon the receipt by EPA of the payment required of that Settling Cashout Defendant by Paragraph 63 and any Interest or stipulated penalties due thereon under Paragraph 72 (Interest) or Section XX (Stipulated Penalties). For each Settling Cashout Defendant, these covenants are conditioned upon the satisfactory performance by that Settling Cashout Defendant of its obligations under this Consent Decree. These covenants extend

only to Settling Cashout Defendants and do not extend to any other person except as specifically set forth in this Consent Decree.

102. Covenants for Settling Ability to Pay Defendants by United States on Behalf of EPA. In consideration of the payments that will be made by Settling Ability to Pay Defendants under this Consent Decree, the United States on behalf of EPA covenants not to sue or to take administrative action against Settling Ability to Pay Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for the B.F. Goodrich Superfund Site. For each Settling Ability to Pay Defendant, these covenants shall take effect upon the receipt by EPA of the payment required of that Settling Ability to Pay Defendant by Paragraph 64 and any Interest or stipulated penalties due thereon under Paragraph 72 (Interest) or Section XX (Stipulated Penalties). For each Settling Ability to Pay Defendant, these covenants are conditioned upon the satisfactory performance by that Settling Ability to Pay Defendant of its obligations under this Consent Decree. These covenants extend only to Settling Ability to Pay Defendants and do not extend to any other person except as specifically set forth in this Consent Decree. These covenants are also conditioned upon the veracity and completeness of the financial information and the insurance information provided to EPA by Settling Ability to Pay Defendants, and the financial, insurance, and indemnity certifications made by Settling Ability to Pay Defendants, as described in

Paragraph 145. If the Financial Information or Insurance Information provided by any Settling Ability to Pay Defendant, or the financial, insurance, or indemnity certification made by any Settling Ability to Pay Defendant is subsequently determined by EPA to be false or, in any material respect, inaccurate, such Settling Ability to Pay Defendant shall forfeit all payments made pursuant to this Consent Decree and these covenants and the contribution protection in Paragraphs 135 and 136 shall be null and void as to such Settling Ability to Pay Defendant. Such forfeiture shall not constitute liquidated damages and shall not in any way foreclose the United States' right to pursue any other causes of action arising from such Settling Ability to Pay Defendant's false or materially inaccurate information. These covenants extend only to Settling Ability to Pay Defendants and do not extend to any other person.

103. Covenants for San Bernardino County Settling Parties by United States on Behalf of EPA. In consideration of the payments that will be made by the San Bernardino County Settling Parties under this Consent Decree, and except as specifically provided in Paragraphs 105-107 and 109 of this Section, the United States on behalf of EPA covenants not to sue or to take administrative action against the San Bernardino County Settling Parties pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for the B.F. Goodrich Superfund Site. These covenants shall take effect upon the receipt by EPA of the payments

required by Paragraph 65 and any Interest or stipulated penalties due thereon under Paragraph 72 (Interest) or Section XX (Stipulated Penalties). These covenants are conditioned upon the satisfactory performance by the San Bernardino County Settling Parties of their obligations under this Consent Decree. These covenants extend only to the San Bernardino County Settling Parties and do not extend to any other person except as specifically set forth in this Consent Decree.

104. Covenant for Settling Federal Agencies by EPA. In consideration of the payments that will be made by the United States on behalf of Settling Federal Agencies under this Consent Decree, and except as specifically provided in Paragraphs 105-107 and 109, EPA covenants not to take administrative action against Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for the B.F. Goodrich Superfund Site. EPA's covenant is conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Decree. EPA's covenant extends only to Settling Federal Agencies and does not extend to any other person except as specifically set forth in this Consent Decree.

105. United States' Pre-Certification Reservations.

a. As to Settling Work Defendant and Emhart Related Parties: Notwithstanding any other provision of this Consent Decree, the United States, on behalf of EPA, 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 Settling Work Defendant and/or Emhart Related Parties to perform further response actions relating to the Source Area Operable Unit of the B.F. Goodrich Superfund Site and/or to pay the United States for additional costs of response if, (a) prior to Certification of Completion of the Work, (i) conditions at the Source Area Operable Unit of the B.F. Goodrich Superfund Site, previously unknown to EPA, are discovered, or (ii) information, previously unknown to EPA, is received, in whole or in part, and (b) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Work is not protective of human health or the environment. The Source Area Operable Unit of the B.F. Goodrich Superfund Site does not include soils at the Site or groundwater downgradient of the Target Area as defined in the 2010 ROD. If the United States institutes any such action under this Paragraph, nothing in this Consent Decree shall preclude Settling Work Defendant or Emhart Related Parties from, at their discretion, bringing a claim for contribution, or otherwise, against Settling Defendants, Settling Federal Agencies, and/or any other entity not a party to this Consent Decree and the defendants in such action shall be entitled to assert any claims against Settling Work Defendant and/or Emhart Related Parties; provided, however, that Settling Work Defendant and Emhart Related Parties agree that they

shall not bring such claim against any of the San Bernardino County Settling Parties. Except as provided in Paragraph 140 (Res Judicata and Certain Other Defenses), nothing in this Consent Decree precludes any Party from raising any defense, whether asserted or not in the Consolidated Federal Action, to such new action or order.

b. As to Settling Cashout Defendants, Settling Federal Agencies, and the San Bernardino County Settling Parties: Notwithstanding any other provision of this Consent Decree, the United States, on behalf of EPA, 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 Settling Cashout Defendants, Settling Federal Agencies, and/or the San Bernardino County Settling Parties to perform further response actions relating to the B.F. Goodrich Superfund Site and/or to pay the United States for additional costs of response if, (a) prior to Certification of Completion of the Final Remedial Action for the B.F. Goodrich Superfund Site, (i) conditions at the B.F. Goodrich Superfund Site, previously unknown to EPA, are discovered, or (ii) information, previously unknown to EPA, is received, in whole or in part, and (b) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Final Remedial Action for the B.F. Goodrich Superfund Site is not protective of human health or the

environment. If the United States institutes any such action under this Paragraph, nothing in this Consent Decree shall preclude any Settling Cashout Defendant, Settling Federal Agency, or the San Bernardino County Settling Parties, at their discretion, from bringing a claim for contribution, or otherwise, against other Settling Cashout Defendants, Settling Work Defendant, Emhart Related Parties, Settling Federal Agencies, and/or any other entity not a party to this Consent Decree. Except as provided in Paragraph 140 (Res Judicata and Certain Other Defenses), nothing in this Consent Decree precludes any Party from raising any defense, whether asserted or not in the Consolidated Federal Action, to such new action or order.

106. United States' Post-Certification Reservations.

a. As to Settling Work Defendant and Emhart Related Parties: Notwithstanding any other provision of this Consent Decree, the United States, on behalf of EPA, 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 Settling Work Defendant and/or Emhart Related Parties to perform further response actions relating to the Source Area Operable Unit of the B.F. Goodrich Superfund Site and/or to pay the United States for additional costs of response if, (a) subsequent to Certification of Completion of the Work, (i) conditions at the Source Area Operable Unit of the B.F. Goodrich

Superfund Site, previously unknown to EPA, are discovered, or (ii) information, previously unknown to EPA, is received, in whole or in part, and (b) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Work is not protective of human health or the environment. The Source Area Operable Unit of the B.F. Goodrich Superfund Site does not include soils at the Site or groundwater downgradient of the Target Area. If the United States institutes any such action under this Paragraph, nothing in this Consent Decree shall preclude Settling Work Defendant or Emhart Related Parties from, at their discretion, bringing a claim for contribution, or otherwise, against Settling Defendants, Settling Federal Agencies, and/or any other entity not a party to this Consent Decree and the defendants in such action shall be entitled to assert any claims against Settling Work Defendant and/or Emhart Related Parties; provided, however, that Settling Work Defendant and Emhart Related Parties agree that they shall not bring such claim against any of the San Bernardino County Settling Parties. Except as provided in Paragraph 140 (Res Judicata and Certain Other Defenses), nothing in this Consent Decree precludes any Party from raising any defense, whether asserted or not in the Consolidated Federal Action, to such new action or order.

b. <u>As to Settling Cashout Defendants, Settling Federal Agencies, and the San Bernardino County Settling Parties</u>: Notwithstanding any other

provision of this Consent Decree, the United States, on behalf of the EPA, 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 Settling Cashout Defendants, Settling Federal Agencies, and/or the San Bernardino County Settling Parties to perform further response actions relating to the B.F. Goodrich Superfund Site and/or to pay the United States for additional costs of response if, (a) subsequent to Certification of Completion of the Final Remedial Action for the B.F. Goodrich Superfund Site, (i) conditions at the B.F. Goodrich Superfund Site, previously unknown to EPA, are discovered, or (ii) information, previously unknown to EPA, is received, in whole or in part, and (b) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Final Remedial Action for the B.F. Goodrich Superfund Site is not protective of human health or the environment. If the United States institutes any such action under this Paragraph, nothing in this Consent Decree shall preclude any Settling Cashout Defendant, Settling Federal Agency, or the San Bernardino County Settling Parties, at their discretion, from bringing a claim for contribution, or otherwise, against other Settling Cashout Defendants, Settling Work Defendant, Emhart Related Parties, Settling Federal Agencies, and/or any other entity not a party to this Consent Decree. Except as provided in Paragraph 140 (Res Judicata and Certain Other

Defenses), nothing in this Consent Decree precludes any Party from raising any defense, whether asserted or not in the Consolidated Federal Action, to such new action or order.

107. For purposes of Paragraph 105. a., the information and the conditions known to EPA will include only that information and those conditions known to EPA as of the date this Consent Decree is lodged with the Court. For purposes of Paragraph 105. b., the information and the conditions known to EPA will include only that information and those conditions known to EPA as of the date the Final Record of Decision is signed. For purposes of Paragraph 106. a., the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Work, and set forth in the Record of Decision, the administrative record supporting the Record of Decision, the post-2010 ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to the Certification of Completion of the Work. For purposes of Paragraph 106. b., the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Final Remedial Action for the B.F. Goodrich Superfund Site.

108. Reservations of Rights Regarding Scope of 2010 ROD. The United States, on behalf of EPA, reserves, and this Consent Decree is without prejudice to,

its right to institute proceedings in a new action, or to issue an administrative order, to require reinjection of treated groundwater generated by the Remedial Action. Absent such an action or order, Settling Work Defendant has no obligation under this Consent Decree to reinject such groundwater. If the United States institutes any such action under this Paragraph, nothing in this Consent Decree shall preclude Settling Work Defendant or Emhart Related Parties from, at their discretion, bringing a claim for contribution, or otherwise, relating to the costs of reinjection against Settling Federal Agencies, and/or any other entity not a party to this Consent Decree, and the defendants in such action shall be entitled to assert any claims and defenses against Settling Work Defendant and/or Emhart Related Parties relating to Settling Work Defendant's and/or Emhart Related Parties' claims.

109. General Reservations of Rights. The United States on behalf of EPA and the federal natural resource trustee reserves, and this Consent Decree is without prejudice to, all rights against Settling Defendants and Settling Federal Agencies with respect to all matters not expressly included within Plaintiff's covenants in Paragraphs 100-104. Notwithstanding any other provision of this Consent Decree, the United States on behalf of EPA and the federal natural resource trustee reserves all rights against Settling Defendants and Settling Federal Agencies, with respect to:

a. claims based on a failure by Settling Defendants or Settling Federal Agencies to meet their respective requirements under this Consent Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the B.F. Goodrich Superfund Site;

c. liability based on the ownership or operation of any portion of the B.F. Goodrich Superfund Site by Settling Defendants or Settling Federal Agencies when such ownership or operation commences after signature of this Consent Decree and does not arise solely out of performance of the Work;

d. liability based on Settling Defendants' or Settling Federal Agencies' transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the B.F. Goodrich Superfund Site, other than as provided in the 2010 ROD, the Work, or otherwise ordered by EPA, after signature of this Consent Decree;

e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

f. criminal liability;

g. liability for violations of federal or state law which occur during or after implementation of the Work;

h. liability against Settling Work Defendant and/or Emhart

Related Parties, prior to Certification of Completion of the Work, for additional response actions that EPA determines are necessary to achieve and maintain Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the 2010 ROD, but that cannot be required pursuant to Paragraph 19 (Modification of SOW or Work Plans Required by the SOW); and

i. liability against Settling Work Defendant for costs to be incurred by the Agency for Toxic Substances and Disease Registry regarding the B.F. Goodrich Superfund Site.

110. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to reinstitute or reopen this action, or to commence a new action seeking relief other than as provided in this Consent Decree, if the Financial Information or the Insurance Information provided by Settling Ability to Pay Defendants, or the financial, insurance, or indemnity certification made by Settling Ability to Pay Defendants in Paragraph 145, is materially false or, in any material respect, inaccurate. This Paragraph only applies to Settling Ability to Pay Defendants.

111. Work Takeover.

a. In the event EPA determines that Settling Work Defendant: (1) has ceased implementation of any portion of the Work; (2) is seriously or repeatedly deficient or late in its performance of the Work; or (3) is implementing

the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to Settling Work Defendant. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notice was issued and will provide Settling Work Defendant a period of ten (10) Days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

b. If, after expiration of the ten (10) Day notice period specified in Paragraph 111. a., Settling Work Defendant has not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portion(s) of the Work as EPA deems necessary ("Work Takeover"). EPA will notify Settling Work Defendant in writing (which writing may be electronic), and provide copies to Rialto and Colton, if EPA determines that implementation of a Work Takeover is warranted under this Paragraph 111. b. Funding of Work Takeover costs is addressed under Paragraph 53.

c. Settling Work Defendant may invoke the procedures set forth in Paragraph 83 (Record Review), to dispute EPA's implementation of a Work Takeover under Paragraph 111. b. However, notwithstanding Settling Work Defendant's invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and

continue a Work Takeover under Paragraph 111. b. until the earlier of: (1) the date that Settling Work Defendant remedies, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, or (2) the date that a final decision is rendered in accordance with Paragraph 83 (Record Review) requiring EPA to terminate such Work Takeover.

112. Notwithstanding any other provision of this Consent Decree, the United States on behalf of EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

B. COVENANTS, RELEASES, AND RESERVATIONS OF RIGHTS BY ALL OTHER PARTIES

113. Covenants. Except as specifically provided in Paragraph 10, Paragraphs 115 through 119, and this Paragraph, Rialto, Colton, Settling Defendants, and Settling Federal Agencies each release and covenant not to sue or take administrative action against each other, pursuant to Sections 107(a) or 113 of CERCLA, 42 U.S.C. §§ 9607(a) and 9613, Section 7002 of RCRA, 42 U.S.C. § 6972, or any other federal or state statute or common law with respect to all claims, of any kind, known and unknown, against Rialto, Colton, Settling Defendants, and/or Settling Federal Agencies in connection with the alleged release or threatened release of any of the Basin Contaminants at, on, or under the RABSP Site. These covenants and releases are also conditioned upon the satisfactory performance by Rialto, Colton, Settling Defendants, and Settling Federal Agencies

of their obligations under this Consent Decree, and the veracity and completeness of the Financial Information and the Insurance Information provided to EPA by Settling Ability to Pay Defendants. If the Financial Information or the Insurance Information provided by any Settling Ability to Pay Defendant is subsequently determined by EPA to be false or, in any material respect, inaccurate, such Settling Ability to Pay Defendant shall forfeit all payments made pursuant to this Consent Decree and these releases and covenants and the contribution protection in Paragraphs 135 and 136 shall be null and void as to such Settling Ability to Pay Defendant.

114. In releasing all unknown claims as set forth in Paragraph 113, Rialto, Colton, Settling Defendants, and Settling Federal Agencies each expressly waive the provisions of Section 1542 of the California Civil Code, which provides:

> A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor.

115. Rialto and Colton each reserve, and this Consent Decree is without prejudice to, all rights against Settling Defendants and Settling Federal Agencies with respect to:

a. liability of the breaching Party for its failure to meet a requirement of this Consent Decree;

b. criminal liability;

c. liability based on the ownership or operation of any portion of the RABSP Site when such ownership or operation commences after lodging of this Consent Decree and there is a new release of a Waste Material on or related to such property;

d. liability based on transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of a Waste Material at or in connection with the RABSP Site, after lodging of this Consent Decree;

e. liability arising from the past, present, or future disposal, release or threat of release of a Waste Material outside of the RABSP Site;

f. liability arising from the release, threat of release, or disposal of a Waste Material either within or outside of the RABSP Site, where such release, threat of release, or disposal occurs after the lodging of this Consent Decree;

g. liability arising from past, present, or future releases or threatened releases at the RABSP Site, where the Waste Material at issue is not a Basin Contaminant;

h. liability related to bodily injury;

i. any rights to enforce the land use covenant on the Stonehurst Property, pursuant to the terms of that document, against current or future owners of the Stonehurst Property, their heirs, successors, assignees, agents, and

employees, and/or anyone who currently or at any time in the future holds title to all or any portion of the Stonehurst Property and/or any person or entity currently or in the future entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Stonehurst Property;

j. claims for contribution whether based on federal or state statutes or common law arising out of: (1) claims in *City of Riverside v. Black & Decker (U.S.), Inc., et al.*, Case No. BC410878; (2) claims asserted by any person or entity that was not a party to the Consolidated Federal Action on August 24, 2012; or, (3) claims for natural resource damages; and

k. any rights of Rialto that arise from the exercise and enforcement of its municipal police power regulatory authority over persons, entities, properties, and business transactions within the jurisdiction of the City of Rialto. However, nothing in the foregoing sentence of this subparagraph k. reserves Rialto's rights under any federal, state, or local law to seek enforcement against the Settling Defendants and/or Settling Federal Agencies to remediate soil or groundwater for existing Waste Material unless such right is reserved in other subparagraphs of this Paragraph.

For purposes of subparagraphs c., d., and f. of this Paragraph, migration of existing Waste Material is not a new release or disposal of Waste Material into soil, groundwater, or atmosphere.

116. The San Bernardino County Settling Parties each reserve, and this Consent Decree is without prejudice to, all rights against Rialto, Colton, Settling Defendants, and Settling Federal Agencies with respect to:

a. liability of the breaching Party for its failure to meet a requirement of this Consent Decree;

b. criminal liability;

c. liability based on the ownership or operation of any portion of the RABSP Site when such ownership or operation commences after lodging of this Consent Decree and there is a new release of a Waste Material on or related to such property;

d. liability based on transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of a Waste Material at or in connection with the RABSP Site, after lodging of this Consent Decree;

e. liability arising from the past, present, or future disposal, release or threat of release of a Waste Material outside of the RABSP Site;

f. liability arising from the release, threat of release, or disposal of a Waste Material either within or outside of the RABSP Site, where such release, threat of release, or disposal occurs after the lodging of this Consent Decree;

g. liability arising from past, present, or future releases or

threatened releases at the RABSP Site, where the Waste Material at issue is not a Basin Contaminant;

h. liability related to bodily injury;

i. any rights to enforce the land use covenant on the Stonehurst Property, pursuant to the terms of that document, against current or future owners of the Stonehurst Property, their heirs, successors, assignees, agents, and employees, and/or anyone who currently or at any time in the future holds title to all or any portion of the Stonehurst Property and/or any person or entity currently or in the future entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Stonehurst Property; and

j. claims for contribution whether based on federal or state statutes or common law arising out of: (1) claims in *City of Riverside v. Black & Decker (U.S.), Inc., et al.*, Case No. BC410878; (2) claims asserted by any person or entity that was not a party to the Consolidated Federal Action on August 24, 2012; or, (3) claims for natural resource damages.

For purposes of subparagraphs c., d., and f. of this Paragraph, migration of existing Waste Material is not a new release or disposal of Waste Material into soil, groundwater, or atmosphere.

117. The Settling Work Defendant, Settling Cashout Defendants, Settling

Federal Agencies, Settling Ability to Pay Defendants, and Emhart Related Parties each reserves, and this Consent Decree is without prejudice to, all rights against Rialto, Colton, Settling Defendants, and Settling Federal Agencies with respect to:

a. liability of the breaching Party for its failure to meet a requirement of this Consent Decree;

b. liability based on the ownership or operation of any portion of the RABSP Site when such ownership or operation commences after lodging of this Consent Decree and there is a new release of a Waste Material on or related to such property;

c. liability based on transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of a Waste Material at or in connection with the RABSP Site, after lodging of this Consent Decree;

d. liability arising from the past, present, or future disposal, release or threat of release of a Waste Material outside of the RABSP Site;

e. liability arising from the release, threat of release, or disposal of a Waste Material either within or outside of the RABSP Site, where such release, threat of release, or disposal occurs after the lodging of this Consent Decree;

f. liability arising from past, present, or future releases or threatened releases at the RABSP Site, where the Waste Material at issue is not a

Basin Contaminant;

g. liability related to bodily injury; and

h. claims for contribution whether based on federal or state statutes or common law arising out of: (1) claims in *City of Riverside v. Black & Decker (U.S.), Inc., et al.*, Case No. BC410878; (2) claims asserted by any person or entity that was not a party to the Consolidated Federal Action on August 24, 2012; or, (3) claims for natural resource damages.

For purposes of subparagraphs b., c., and e. of this Paragraph, migration of existing Waste Material is not a new release or disposal of Waste Material into soil, groundwater, or atmosphere.

118. Reservation of Rights Among the San Bernardino County Settling Parties. Nothing in this Consent Decree affects the rights among the San Bernardino County Settling Parties as to each other, and the covenants provided herein shall not be construed as a release or covenant not to sue from one of the San Bernardino County Settling Parties to any other of the individual San Bernardino County Settling Parties.

119. Reservation of Prior Settlements of San Bernardino County Settling Parties.

a. The releases and covenants not to sue in this Consent Decree do not abrogate, supersede, release, covenant not to sue, or modify the commitments

made to Rialto and Colton by the San Bernardino County Settling Parties in the Settlement Agreement in Case No. ED CV 09-01864 PSG (SSx), entered by U.S. District Court for the Central District of California on December 22, 2011, including the underlying settlement agreement dated August 19, 2010 and executed by Rialto, Colton, the County of San Bernardino, Robertson's Ready Mix, Inc., Robertson's Ready Mix, Ltd., RRM Properties, Ltd., Edward Stout individually and as trustee of the Stout-Rodriguez Trust (also known as the "Schulz Family Trust"), Elizabeth Rodriguez, John Callagy individually and as trustee of the Frederiksen Children's Trust Under Trust Agreement Dated February 20, 1985 and the E.F. Schulz Trust, Linda Frederiksen individually and as trustee of the Walter M. Pointon Trust dated 11/19/91, the Michelle Ann Pointon Trust under Trust Agreement dated February 15, 1985 and the E.F. Schulz Trust, Mary Callagy, Jeanine Elzie, Stephen Callagy, Michelle Farris, and Anthony Rodriguez, attached as Exhibit 69 to the Declaration of Martin N. Refkin [Docket No. 549] in support of the County of San Bernardino, Robertson's Ready Mix, Inc., and Schulz Trust Parties' Motion for Determination of Good Faith Settlement and Barring of Claims [Docket No. 533] which was adopted and approved by the Court's Amended Order Determining Good Faith Settlement and Barring Claims [Docket No. 1192] both of which are expressly preserved by the parties to this Decree.

b. The releases and covenants not to sue in this Consent Decree do not abrogate, supersede, release, covenant not to sue, or modify the commitments made to Rialto and Colton by the Zambelli Settling Parties in the Settlement Agreement in Case No. ED CV 09-01864 PSG (SSx), entered by U.S. District Court for the Central District of California on June 10, 2011, including the underlying settlement agreement executed in August 2010 by Rialto, Colton, Zambelli Fireworks Manufacturing Company, Inc., Zambelli Fireworks Company, aka Zambelli Fireworks Internationale, and Zambelli Fireworks Manufacturing Company (collectively, "Zambelli"), attached as Exhibit 1 to the Declaration of Martin N. Refkin [Docket No. 573] in support of Zambelli's Motion for Determination of Good Faith Settlement and Barring of Claims [Docket No. 564] which was adopted and approved by the Court's Order For Determination of Good Faith Settlement and Barring of Claims [Docket No. 772] both of which are expressly preserved by the parties to this Decree.

120. Further Settlors. Rialto, Colton, Settling Defendants, and Settling Federal Agencies agree that in the event that: (a) the United States, on behalf of EPA, reaches or has reached settlement with any other party to the Consolidated Federal Action who is not a signatory to this Consent Decree ("Further Settlor"); and (b) the United States, on behalf of the EPA, gives notice in accordance with Section XXV (Notices and Submissions) to Rialto, Colton, Settling Defendants,

and Settling Federal Agencies that such party has become a Further Settlor; then upon Court approval of a future settlement, Rialto, Colton, Settling Defendants, and Settling Federal Agencies commit that they shall extend to any such Further Settlor identical releases and covenants not to sue and waiver to those set forth in Paragraphs 113 and 114, without further monetary consideration for such covenants and waiver, subject to the reservations of rights in Paragraphs 115-117, and in exchange for mutual releases of claims and appeals by that Further Settlor against Rialto, Colton, Settling Defendants, and Settling Federal Agencies identical to the releases and covenants not to sue and waiver set forth in Paragraphs 113-114. The commitments of Rialto, Colton, Settling Defendants, and Settling Federal Agencies to provide such covenants not to sue, subject to the reservation of rights, in the foregoing sentence shall not take effect as to any Future Settlor unless and until the settlement with such Future Settlor becomes a final judgment following any appeal. The United States, on behalf of EPA, has sole discretion to determine whether a party is to be deemed a "Further Settlor" for purposes of this Paragraph.

121. Covenants Not to Sue the United States on Behalf of EPA by Rialto, Colton, and Settling Defendants. Except as provided in Paragraph 124, Rialto, Colton, and Settling Defendants covenant not to sue and agree not to assert any

claims or causes of action against the United States on behalf of EPA, or its contractors or employees, with respect to the B.F. Goodrich Superfund Site and this Consent Decree, 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 or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113, RCRA Section 7002(a), 42 U.S.C. § 6972(a), or state law regarding, the B.F. Goodrich Superfund Site, the Work, past response actions regarding the B.F. Goodrich Superfund Site, Past Response Costs, Future Response Costs and this Consent Decree;

c. any claims arising out of response actions at or in connection with the B.F. Goodrich Superfund Site relating to the United States, including any claim under the United States Constitution, 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;

d. any claim, whether express or deemed by court order, in the Consolidated Federal Action; and

e. any direct or indirect claim for disbursement from the B.F.

Goodrich Superfund Site Special Account or B. F. Goodrich Superfund Site Disbursement Special Account, except as provided in Paragraph 69 (Establishment of B.F. Goodrich Superfund Site Disbursement Special Account and Reimbursement of Settling Work Defendant's Expenditures).

122. Settling Defendants' Agreement Regarding Recovery Under Federal Contracts. Each Settling Defendant hereby agrees that it shall not in the future seek or receive any portion of any amount it has agreed to pay in this Consent Decree, through any Federal Contract. Pursuant to this Paragraph, each Settling Defendant expressly acknowledges that it is prohibited from including any portion of the payments made pursuant to this Consent Decree as either direct or indirect costs, or otherwise, in any invoice, claim, or demand associated with any Federal Contract.

123. Covenant by Settling Federal Agencies. Settling Federal Agencies agree not to assert 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 or any other provision of law with respect to the B.F. Goodrich Superfund Site. The covenant by Settling Federal Agencies described in this Paragraph does not preclude demand for reimbursement from the Superfund of costs incurred by any of Settling Federal Agencies in the performance of its duties (other than pursuant

to this Consent Decree) as lead or support agency under the National Contingency Plan (40 C.F.R. Part 300).

124. Except as provided in Paragraph 129 (Claims Against MSW Generators and Transporters), Paragraph 131 (Claims Against *De Minimis* and Ability to Pay Parties), Paragraph 132 (Claims Against *De Micromis* Parties), and Paragraph 140 (Res Judicata and Certain Other Defenses), the covenants in Paragraph 121 (Covenants Not to Sue the United States by Rialto, Colton, and Settling Defendants) shall not apply if the United States brings a cause of action or issues an order pursuant to any of the reservations in Section XXI (Covenants, Releases, and Reservations of Rights), other than in Paragraphs 109. a. (claims for failure to meet a requirement of the Decree), 109. f. (criminal liability), and 109. g. (violations of federal/state law during or after implementation of the Work), but only to the extent that Settling Defendants' claims arise from the same response action, response costs, or damages that the United States on behalf of EPA is seeking pursuant to the applicable reservation.

125. <u>Claims Against Other Parties in the Consolidated Federal Action</u>. Settling Defendants, Settling Federal Agencies, Rialto, and Colton agree not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) or any other federal or state law that they may have for response costs relating to

the B.F. Goodrich Superfund Site and/or the West Side Site against each other or any other person who is or was a party in the Consolidated Federal Action. This waiver shall not apply with respect to any defense, claim, or cause of action that a Settling Defendant, Settling Federal Agency, Rialto, or Colton may have against any person if such person asserts a claim or cause of action relating to the B.F. Goodrich Superfund Site and/or the West Side Site against such Settling Defendant, Settling Federal Agency, Rialto, or Colton, after lodging of this Consent Decree.

126. Pursuant to the "Settlement Terms for Resolving Pending Appeals" set forth in Appendix K, hereto, the United States, Settling Work Defendant, BDI, and KLI shall dismiss their appeals before the Ninth Circuit in *United States of America v. Zambelli Fireworks Manufacturing Co., et al.*, No. 11-56309, and *United States of America v. City of Rialto, and County of San Bernardino, et al.*, No. 12-55342, *Emhart Industries, Inc. v. Zambelli Fireworks Manufacturing Co. et al.*, No 11-56159, and *Emhart Industries, Inc. v. County of San Bernardino, et al.*, No. 12-55083, including associated appeals and each case subject to the Amended Order Consolidating Appeals filed on April 16, 2012 (Dkt. 12), within thirty (30) Days after the Effective Date of this Consent Decree.

127. Settling Defendants, Rialto, and Colton reserve, and this Consent Decree is without prejudice to, claims arising after the Effective Date against the

United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, 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, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, 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, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Settling Work Defendant's plans, reports, other deliverables or activities. Settling Defendants, Rialto, and Colton also reserve, and this Consent Decree is without prejudice to, contribution claims against Settling Federal Agencies in the event any claim is asserted by the United States against Settling Defendants pursuant to any of the reservations in Section XXI (Covenants, Releases, and Reservations of Rights) other than in Paragraphs 109. a. (claims for failure to meet a requirement of the Consent Decree), 109. f. (criminal liability), and 109. g. (violations of federal/state law during or after implementation of the Work), but only to the extent that Settling Defendants' claims arise from the same response action, response costs, or damages that the

United States is seeking pursuant to the applicable reservation and the Settling Federal Agencies shall be entitled to assert all claims and defenses in connection with such actions.

128. 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).

129. Claims Against MSW Generators and Transporters. Settling Defendants agree not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have for all matters relating to the B.F. Goodrich Superfund Site against any person where the person's liability to Settling Defendants with respect to the B.F. Goodrich Superfund Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of MSW at the B.F. Goodrich Superfund Site, if the volume of MSW disposed, treated, or transported by such person to the B.F. Goodrich Superfund Site did not exceed 0.2 percent of the total volume of waste at the B.F. Goodrich Superfund Site.

130. The waiver in Paragraph 129 (Claims Against MSW Generators and Transporters) shall not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person meeting the criteria in

Paragraph 129 if such person asserts a claim or cause of action relating to the B.F. Goodrich Superfund Site against such Settling Defendant. This waiver also shall not apply to any claim or cause of action against any person meeting the above criteria if EPA determines that: (a) the MSW contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the B.F. Goodrich Superfund Site; (b) the person has failed to comply with any information request or administrative subpoena issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. § 9604(e) or § 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927; or (c) the person impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the B.F. Goodrich Superfund Site.

131. Claims Against *De Minimis* and Ability to Pay Parties. Settling Defendants agree not to assert any claims or causes of action and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have for all matters relating to the B.F. Goodrich Superfund Site against any person that has entered or in the future enters into a final CERCLA Section 122(g) *de minimis* settlement, or a final settlement based on limited ability to pay, with EPA with respect to the B.F. Goodrich Superfund Site. This waiver shall not apply with respect to any defense,

claim, or cause of action that a Settling Defendant may have against any person if such person asserts a claim or cause of action relating to the B.F. Goodrich Superfund Site against such Settling Defendant.

132. Claims Against *De Micromis* Parties. Settling Defendants agree not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have for all matters relating to the B.F. Goodrich Superfund Site against any person where the person's liability to Settling Defendants with respect to the B.F. Goodrich Superfund Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the B.F. Goodrich Superfund Site, or having accepted for transport for disposal or treatment of hazardous substances at the B.F. Goodrich Superfund Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the B.F. Goodrich Superfund Site was less than 110 gallons of liquid materials or 200 pounds of solid materials.

133. The waiver in Paragraph 132 (Claims Against *De Micromis* Parties) shall not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person meeting the criteria in Paragraph 132 if such person asserts a claim or cause of action relating to the B.F. Goodrich

Superfund Site against such Settling Defendant. This waiver also shall not apply to any claim or cause of action against any person meeting the criteria in Paragraph 132 if EPA determines:

a. that such person has failed to comply with any EPA requests for information or administrative subpoenas issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. § 9604(e) or 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the B.F. Goodrich Superfund Site, or has been convicted of a criminal violation for the conduct to which this waiver would apply and that conviction has not been vitiated on appeal or otherwise; or

b. that the materials containing hazardous substances contributed to the B.F. Goodrich Superfund Site by such person have contributed significantly, or could contribute significantly, either individually or in the aggregate, to the cost of response action or natural resource restoration at the B.F. Goodrich Superfund Site.

XXII. EFFECT OF SETTLEMENT CONTRIBUTION

134. Except as provided in Paragraph 125 (Claims Against Other Parties in the Consolidated Federal Action), Paragraph 129 (Claims Against MSW Generators and Transporters), Paragraph 131 (Claims Against *De Minimis* and

Ability to Pay Parties), and Paragraph 132 (Claims Against *De Micromis* Parties), 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. Except as provided in Paragraph 120 (Further Settlors), Paragraph 125 (Claims Against Other Parties in the Consolidated Federal Action), Paragraph 129 (Claims Against MSW Generators and Transporters), Paragraph 131 (Claims Against *De Minimis*/Ability to Pay Parties), and Paragraph 132 (Claims Against *De Micromis* Parties), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), 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 B.F. Goodrich Superfund Site and the RABSP Site against any person not a Party hereto. Nothing in this Consent Decree diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

135. The Parties agree, and by entering this Consent Decree this Court finds, that this Consent Decree constitutes a judicially-approved settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Rialto,

Colton, Settling Defendants, and 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, or as may be otherwise provided by law, for "matters addressed" in this Consent Decree. The "matters addressed" in this Consent Decree are all response actions taken or to be taken and all response costs incurred or to be incurred at or in connection with the B.F. Goodrich Superfund Site or the West Side Site by the United States or any other person; provided, however, that if the United States, on behalf of EPA, exercises rights against Settling Defendants (or if EPA or the federal natural resource trustee assert rights against Settling Federal Agencies) under the reservations in Section XXI (Covenants, Releases, and Reservations of Rights), other than in Paragraphs 109. a. (claims for failure to meet a requirement of the Consent Decree), 109. f. (criminal liability), or 109. g. (violations of federal/state law during or after implementation of the Work), the "matters addressed" in this Consent Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation. Nothing in this Paragraph shall limit or affect the ability of any Settling Defendant, any Settling Federal Agency, Rialto, or Colton from exercising their reservations of rights as to each other in Paragraphs 115, 116, 117, 118, or 119 as applicable.

136. The Parties further agree, and by entering this Consent Decree this

Court further finds, that the payments and obligations provided for in this Consent Decree represent a good faith compromise of disputed claims and that the compromise represents a fair, reasonable, and equitable resolution. With regard to any claims for costs, damages, or other claims against the Parties, the Parties agree and this Court finds that the Settling Defendants and Settling Federal Agencies are entitled to contribution protection pursuant to the California Code of Civil Procedure §§ 877 and 877.6, and any other applicable provision of federal or state law, whether by statute or common law.

137. The Parties intend the broadest possible protection from contribution actions provided by law for "matters addressed" in this Consent Decree.

138. Rialto, Colton, each Settling Defendant, and each Settling Federal Agency shall, with respect to any suit or claim brought by it for matters related to this Consent Decree, notify the United States in writing no later than sixty (60) Days, if practicable, prior to the initiation of such suit or claim, and provide a copy to the Cities of such notification. If sixty (60) Days' notice is not practicable, the Party bringing such suit or claim shall provide whatever notice is practicable. This Paragraph does not apply to suits or claims brought by any Party against its contractors.

139. Rialto, Colton, each Settling Defendant, and each Settling Federal Agency shall, with respect to any suit or claim brought against it for matters related

to this Consent Decree, notify in writing the United States, on behalf of EPA, within ten (10) Days of service of the complaint or claim. In addition, Rialto, Colton, Settling Defendants, and Settling Federal Agencies shall notify the United States, on behalf of EPA, within ten (10) Days of service or receipt of any motion for summary judgment and within ten (10) Days of receipt of any order from a court setting a case for trial. This Paragraph does not apply to suits or claims brought by any Party against its contractors or by any Party's contractor against that Party.

140. Res Judicata and Certain Other Defenses. In any subsequent administrative or judicial proceeding initiated by the United States, on behalf of EPA, for injunctive relief, recovery of response costs, or other appropriate relief relating to the B.F. Goodrich Superfund Site, Settling Defendants 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 by the United States, on behalf of EPA, 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, Releases, and Reservations of Rights).

XXIII. RETENTION OF RECORDS

141. By signing this Consent Decree, the Settling Defendants hereby severally certify that they have, as of February 29, 2012, produced in the Consolidated Federal Action all non-identical and non-privileged copies of records, reports, or information in their possession or control (if any) that relate in any manner to response actions taken at the B.F. Goodrich Superfund Site or the liability of any person under CERCLA with respect to the B.F. Goodrich Superfund Site and the RABSP Site. Except for the records, reports, and information produced in the Consolidated Federal Action as certified above, or as produced by other Parties to the Consolidated Federal Action, the Settling Defendants shall preserve and retain, until one (1) year after EPA's Certification of Completion of the Work pursuant to paragraph 57 (Certification of Completion of the Work), all non-identical copies of records, reports, or information now in their possession or control, or that come into their possession or control, that relate in any manner to response actions taken at the B.F. Goodrich Site, RABSP Site, or the liability of any person under CERCLA with respect to the B.F. Goodrich Site or RABSP Site regardless of any governmental or corporate retention policy to the contrary, except for those documents generated during the course of the Consolidated Federal Action which are subject to the attorney-client privilege, the attorney work-product doctrine, or were communications among counsel for the

parties in the Consolidated Federal Action. The materials described in the preceding sentence are hereinafter referred to as "Records."

142. After the conclusion of the document retention period in the preceding Paragraph, each Settling Defendant shall notify EPA at least ninety (90) days prior to the destruction of any Records, and, upon request by EPA, shall deliver the requested Records to EPA. Each Settling Defendant may assert that certain Records are privileged under the attorney-client privilege or any other privilege recognized by federal law. If a Settling Defendant asserts such a privilege in lieu of providing Records, it shall provide EPA with the following: (a) the title of the Record; (b) the date of the Record; (c) the name, title, affiliation (e.g., company or firm), and address of the author of the Record; (d) the name and title of each addressee and recipient; (e) a description of the subject of the Record; and (f) the privilege asserted. If a claim of privilege applies only to a portion of a Record, the Record shall be provided to EPA in redacted form to mask the privileged portion only. Each Settling Defendant shall retain all Records that they claim to be privileged until EPA has had a reasonable opportunity to dispute the privilege claim and any such dispute has been resolved in such Settling Defendant's favor. The requirements in this Paragraph shall not apply to any Record withheld as privileged in the Consolidated Federal Action and exempted by this Court's Order (Case Management Order No. 1, Docket No. 601, February 15, 2011) from the

requirement to be listed in a privilege log.

143. Settling Defendants shall each certify that, to the best of their knowledge and belief, after thorough inquiry, they have not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to their potential liability regarding the B.F. Goodrich Superfund Site or the RABSP Site since the earlier of notification of potential liability by the United States or the State or the filing of suit against it regarding the B.F. Goodrich Superfund Site or the RABSP Site and that it has fully complied with any and all 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.

144. The United States acknowledges that each Settling Federal Agency (1) is subject to all applicable Federal record retention laws, regulations, and policies; and (2) hereby confirms that it has produced all relevant documents responsive to discovery requests in the Consolidated Federal Action.

145. Each Ability to Pay Settling Defendant certifies that, to the best of its knowledge and belief, after thorough inquiry, it has:

a. not altered, mutilated, discarded, destroyed or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the B.F. Goodrich Superfund Site or the RABSP Site since the earlier of notification of potential liability by the United States or the State or the

filing of suit against it regarding the B.F. Goodrich Superfund Site or the RABSP Site, and that it has fully complied with any and all EPA requests for information regarding the B.F. Goodrich Superfund Site and the RABSP Site and such Settling Defendant's financial circumstances, including but not limited to insurance and indemnity information, pursuant to Sections 104(3) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927;

b. submitted to EPA financial information that fairly, accurately, and materially sets forth its financial circumstances, and that those circumstances have not materially changed between the time the financial information was submitted to EPA and the time such Settling Defendant executes this Consent Decree; and

c. fully disclosed any information regarding the existence of any insurance policies or indemnity agreements that may cover claims relating to cleanup of the B.F. Goodrich Superfund Site and/or other locations in the RABSP Site, and submitted to EPA upon request such insurance policies, indemnity agreements, and information.

XXIV. ACCESS TO INFORMATION

146. Information Related to the Work. Settling Work Defendant shall provide to EPA and the Cities, upon request, copies of all Records within its possession or control or that of its contractors or agents relating to sampling,

analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Work. Settling Defendants shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

147. Business Confidential and Privileged Documents.

a. Any Party may assert business confidentiality claims covering part or all of the Records submitted to EPA 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). Records 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 Records when they are submitted to EPA, or if EPA has notified the Party that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to the Party.

b. Any Party may assert that certain Records are privileged under the attorney-client privilege or any other privilege recognized by federal law. If any Party asserts such a privilege in lieu of providing Records, it shall provide EPA with the following: (1) the title of the Record; (2) the date of the Record; (3)

the name, title, affiliation (e.g., company or firm), and address of the author of the Record; (4) the name and title of each addressee and recipient; (5) a description of the contents of the Record; and (6) the privilege asserted by any Party. If a claim of privilege applies only to a portion of a Record, the Record shall be provided to the EPA in redacted form to mask the privileged portion only. Any Party shall retain all Records that it claims to be privileged until the EPA has had a reasonable opportunity to dispute the privilege claim and any such dispute has been resolved in that Party's favor.

c. No Records created or generated that are required by this Consent Decree shall be withheld from the United States on the grounds that they are privileged or confidential.

148. No claim of confidentiality or privilege shall be made with respect to the analytical results of any sampling of media (including soil, soil gas, groundwater, surface water, air, drinking water) at or around the B.F. Goodrich Superfund Site.

XXV. NOTICES AND SUBMISSIONS

149. 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 directed 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 in this Section shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, Settling Federal Agencies and Settling Defendants, respectively. Notices required to be sent to EPA, and not to the United States, under the terms of this Consent Decree should not be sent to the U.S. Department of Justice.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611
Re: DJ # 90-11-2-09952

-and-

Chief, Environmental Defense Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611
Re: DJ # 90-11-6-17144/1

As to EPA:

Remedial Project Manager, B.F. Goodrich Site
Wayne Praskins
United States Environmental Protection Agency
Region 9
75 Hawthorne St.
San Francisco, CA 94105

As to Settling Work Defendant and Emhart Related Parties:

Theodore C. Morris, Esq.
Assistant General Counsel and Assistant Secretary
Stanley Black & Decker, Inc.
701 East Joppa Road
Towson, MD 21286

Deborah Geyer
Vice President Environmental Health and Safety
Stanley Black & Decker, Inc.
1000 Stanley Drive
New Britain, CT 06053

Joseph W. Hovermill, Esq
Miles & Stockbridge PC
100 Light Street
Baltimore, MD 21202

As to Rialto:

City Attorney for City of Rialto
Attn: Jimmy Gutierrez
12616 Central Avenue
Chino, CA 91710

-and-

Paul Hastings LLP
55 Second Street
Twenty-Fourth Floor
San Francisco, CA 94105
Attn: Peter H. Weiner (for notice only, not service of process)

-and-

Paul Hastings LLP
55 Second Street
Twenty-Fourth Floor
San Francisco, CA 94105

Attn: Deborah J. Schmall (for notice only, not service of process)

As to Colton:

City Manager
Attn: Rod Foster
City of Colton
650 North LaCadena Dr.
Colton, CA 92324

-and-

City Attorney
Attn: Dean Derleth
Best Best & Krieger LLP
3500 Porsche Way, Suite 200
Ontario, CA 91764

As to the County of San Bernardino:

County of San Bernardino County Counsel
385 North Arrowhead Avenue, 4th Floor
San Bernardino CA 92415-0140

-and-

Gallagher & Gallagher, a Professional Corporation (for notice only, not for service of process)
1925 Century Park East, Suite 950
Los Angeles, CA 90067
Attn: Timothy V.P. Gallagher

As to Robertson's Ready Mix, Inc.:

Rob Binam
Robertson's Ready Mix
200 South Main Street
Corona, California 92882

As to the Schulz Parties:

John Callagy
c/o Asage Financial LLC
1910 Olympic Blvd., Suite 330
Walnut Creek, CA 90017

-and-

Elizabeth Rodriguez; Linda Frederiksen;
Edward Stout; Mary Callagy;
Stephen Callagy; Jeanine Elzie; and
Michelle Ferris
c/o William W. Funderburk, Jr.
Castellón & Funderburk LLP
811 Wilshire Blvd., Suite 1025
Los Angeles, CA 90017

As to the Zambelli Parties:

David Acker, Esq.
For Zambelli Fireworks Manufacturing Company, Inc.
25 North Mill Street
First Merit Plaza, Suite 500
New Castle, PA 16101

-and-

Jad Davis, Esq.
Kutak Rock LLP
18201 Von Karman, Suite 1100
Irvine, CA 92612-1077

As to APE, Inc.-West and APE, Inc.:

Tad Trout
President
American Promotional Events, Inc.-West
P.O. Box 2437
Fullerton, CA 92837

-and-

Vince Schilleci
General Counsel
American Promotional Events, Inc.
4511 Helton Drive
Florence, AL 35630

-and-

Steven H. Goldberg
Downey Brand LLP
621 Capitol Mall, 18th Floor
Sacramento, CA 95814

As to Broco, Inc. and J.S. Brower & Associates, Inc.:

Paul A. Brower
4197 La Junta Drive
Claremont, CA 91711

-and-

Allan E. Ceran
Burke, Williams & Soresnen, LLP
444 South Flower Street, Suite 2400
Los Angeles, CA 90071-2953

As to The Ensign-Bickford Co.:

Attn: Dorothy Hammett
The Ensign-Bickford Co.
125 Powder Forest Drive
P.O. Box 7
Simsbury, CT 06070

-and-

Tom Boer
Barg Coffin Lewis & Trapp, LLP
350 California Street, 22nd Floor
San Francisco, CA 94104-1435

As to Raytheon:

Molly Brown
Raytheon Company
870 Winter Street
Waltham, Massachusetts 02451

-and-

Steven E. Soule
Kirkland & Ellis LLP
333 S. Hope Street
Los Angeles, California 90071

As to Whittaker Corporation:

Eric Lardiere, President
Whittaker Corporation
1955 North Surveyor Avenue
Simi Valley, CA 93063-3369

-and-

Christopher T. Johnson
Dongell Lawrence Finney LLP
1629 K Street NW, Suite 300
Washington, DC 20006
(for notice only, not for service of process)

-and-

Matthew Clark Bures
Dongell Lawrence Finney LLP
707 Wilshire Blvd., 45th Floor
Los Angeles, CA 90017

(for notice only, not for service of process)

-and-

Reynold L. Siemens
Pillsbury Winthrop Shaw Pittman LLP
725 South Figueroa Street, Suite 2800
Los Angeles, CA 90017
(for notice only, not for service of process)

XXVI. RETENTION OF JURISDICTION

150. This Court retains jurisdiction over the subject matter of this Consent Decree, and over Rialto, Colton, Settling Defendants, and Settling Federal Agencies 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).

XXVII. APPENDICES

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

"Appendix A" is a map of the 160-Acre Area, West Side Area, and RABSP Area.

"Appendix B" is the 2010 ROD, together with its attachments.

"Appendix C" is the list of Settling Ability to Pay Defendants and Payment Amounts.

"Appendix D" is the list of Settling Cashout Defendants and Payment Amounts.

"Appendix E" is the list of San Bernardino County Settling Parties.

"Appendix F" is the SOW.

"Appendix G" is the performance guarantee.

"Appendix H" is a list of the financial documents submitted to EPA by Settling Ability to Pay Defendants.

"Appendix I" is a list of the insurance documents submitted to EPA by Settling Ability to Pay Defendants.

"Appendix J" sets forth Material Terms To Be Included in the Rialto/Settling Work Defendant Implementation Agreement.

"Appendix K" sets forth "Settlement Terms for Resolving Pending Appeals."

XXVIII. COMMUNITY RELATIONS

152. If requested by EPA, Settling Work Defendant shall participate in community relations activities pursuant to the community involvement plan ("Plan") to be developed by EPA. EPA will determine the appropriate role for Settling Work Defendant under the Plan. Settling Work Defendant shall also cooperate with EPA in providing information regarding the Work to the public. As

requested by EPA, Settling Work Defendant 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 to explain activities at or relating to the B.F. Goodrich Superfund Site.

XXIX. MODIFICATION

153. Except as provided in Paragraph 19 (Modification of SOW or Related Work Plans) and in Paragraph 154, material modifications to this Consent Decree, including the SOW, shall be in writing, signed by the United States, Rialto, Colton, and Settling Defendants, and shall be effective upon approval by the Court. Except as provided in Paragraph 19 (Modification of SOW or Related Work Plans) and in Paragraph 154, non-material modifications to this Consent Decree, including the SOW, shall be in writing and shall be effective when signed by duly authorized representatives of the United States, Rialto, Colton and Settling Defendants. A modification to the SOW shall be considered material if it fundamentally alters the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(ii). Before providing its approval to any modification to the SOW, the United States will provide the State and the Cities with a reasonable opportunity to review and comment on the proposed modification.

154. Modifications (non-material or material) that do not affect the rights or obligations of, or the protections afforded to, Settling Cashout Defendants,

Settling Ability to Pay Defendants, the Emhart Related Parties (other than BDI), and/or the San Bernardino County Settling Parties (other than the County of San Bernardino itself) may be executed without the signatures of the unaffected Parties. Non-material modifications that do not affect the rights or obligations of, or the protections afforded to, Rialto, Colton, Settling Work Defendant, BDI, and/or the County of San Bernardino may be executed without the signatures of the unaffected Parties.

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

XXX. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

156. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) 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. Rialto, Colton, and Settling Defendants consent to the entry of this Consent Decree without further notice.

157. 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 between the Parties.

XXXI. SIGNATORIES/SERVICE

158. Each undersigned representative of a Settling Defendant to this Consent Decree, Rialto, Colton, and the Associate Attorney General of the Department of Justice and/or Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice on behalf of the United States, as reflected in the signature block below, 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.

159. Rialto, Colton, Settling Defendants, and Settling Federal Agencies 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, on behalf of EPA, has notified Settling Defendants, Settling Federal Agencies, Rialto, and Colton in writing that it no longer supports entry of the Consent Decree.

160. Rialto, Colton, and Settling Defendants agree that the agents identified in Paragraph 149 (Notices) are 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. Rialto, Colton, and Settling Defendants agree 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.

XXXII. FINAL JUDGMENT

161. This Consent Decree and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties regarding the settlement embodied in the Consent Decree. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Decree.

162. Upon entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States, Rialto, Colton, and Settling Defendants. 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 _____, 2013.

_____
JUDGE PHILIP S. GUTIERREZ
UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

Dated: 11/20/12 By: Ignacia S. Moreno

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice
Washington, DC 20530

Dated: 12/4/12 By: Deborah A. Gitin

DEBORAH A. GITIN
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
301 Howard St., Suite 1050
San Francisco, CA 94105

Dated: 12/4/12 By: Michael C. Augustini

MICHAEL C. AUGUSTINI
MARK A. RIGAU
ROBERT FOSTER
Environmental Defense Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, DC 20044-7611

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Dated: 11/30/2012 By: _____

JANE DIAMOND
Director, Superfund Division, Region IX
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Dated: November 20, 2012 By: _____

THOMAS B. BUTLER
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

FOR THE CITY OF COLTON:

Dated: 10.17.2012 By: _____
ROD FOSTER
CITY MANAGER

Dated: 10.17.12 By: Gene Tanaka
GENE TANAKA
DANIELLE G. SAKAI
Best Best & Krieger LLP

FOR CITY OF RIALTO AND RIALTO UTILITY AUTHORITY:

Dated: 11/21/12

By: _____
ED SCOTT, MAYOR PRO TEM
City of Rialto

FOR SETTLING WORK DEFENDANT AND EMHART RELATED PARTIES:

Dated: 15 November 2012 By: _____

JOSEPH W. HOVERMILL
Miles & Stockbridge PC

FOR THE COUNTY OF SAN BERNARDINO:

Dated: 11/16/2012

By: _____
TIMOTHY V.P. GALLAGHER
THOMAS A. BLOOMFIELD
Gallagher & Gallagher

FOR ROBERTSON'S READY MIX, INC.:

Dated: November 16, 2012 By: _____
THOMAS N. JACOBSON
Law Offices of Thomas N. Jacobson

FOR THE SCHULZ PARTIES:

Dated: November 16, 2012

By: _____
For: WILLIAM W. FUNDERBURK, JR.
Castellón & Funderburk LLP

FOR THE ZAMBELLI PARTIES:

Dated: 11/16/2012

By: Jad T. Davis
JAD T. DAVIS
Kutak Rock LLP

FOR AMERICAN PROMOTIONAL EVENTS, INC.-WEST AND AMERICAN PROMOTIONAL EVENTS, INC.:

Dated: 10/10/12

By: _____
TAD TROUT, President
American Promotional Events, Inc.-West
Executive Vice President, APE, Inc.

Dated: October 10, 2012

By: _____
STEVEN H. GOLDBERG
Downey Brand LLP
621 Capitol Mall, 18th Floor
Sacramento, CA 95814

Attorneys for American Promotional Events, Inc. and American Promotional Events, Inc.-West

FOR BROCO, INC. AND J.S. BROWER & ASSOCIATES, INC.:

BURKE, WILLIAMS & SORENSEN, LLP

Dated: 11/19/12

By: _____
ALLAN E. CERAN
AMY E. HOYT
Attorneys for BROCO, INC. and
J.S. BROWER & ASSOCIATES, INC.

FOR THE ENSIGN-BICKFORD CO.:

Dated: 11-28-12

By: Dorothy Hammett
DOROTHY T. HAMMETT
Secretary, The Ensign-Bickford Co.

FOR RAYTHEON COMPANY AND RELATED ENTITIES LISTED IN APPENDIX D:

Dated: 19 Nov 2012 By: _____

STEVEN E. SOULE
Kirkland & Ellis LLP
333 S. Hope Street
Los Angeles, California 90071

Attorneys for Raytheon Company

FOR WHITTAKER CORPORATION:

Dated: 11/26/12 By: _____

ERIC G. LARDIERE
President
Whittaker Corporation
1955 North Surveyor Avenue
Simi Valley, California 93063-3369

Dated: 19 nov 12 By: _____

CHRISTOPHER T. JOHNSON
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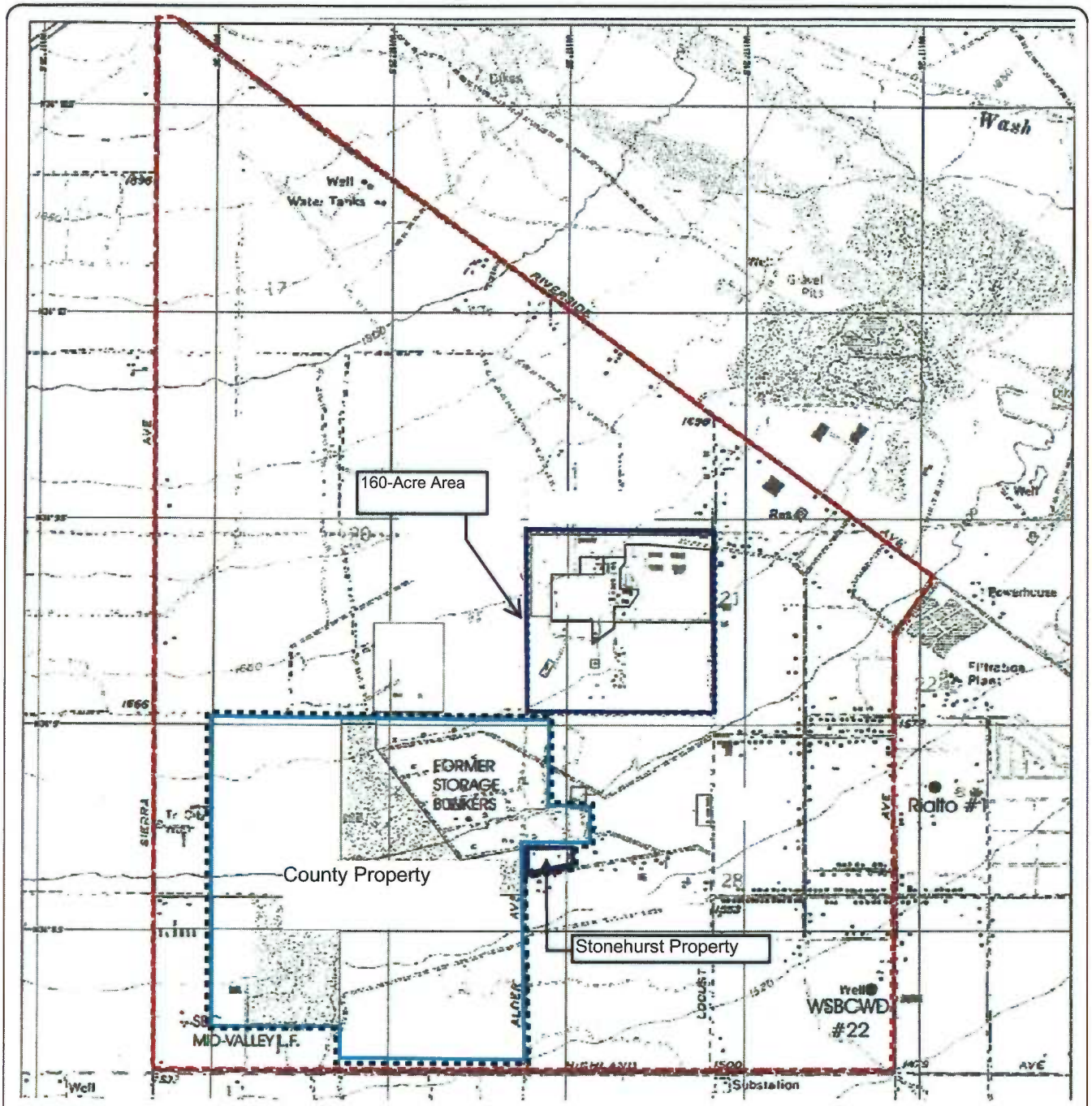
Appendix A

APPENDIX A



LEGEND

- West Side Area
- Rialto Ammunition Backup Storage Point ("RABSP")

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Appendix B

Part 1

Appendix B

USEPA Superfund
Interim Action Record of Decision

Source Area Operable Unit
B.F. Goodrich Superfund Site
San Bernardino County, CA
EPA ID: CAN000905945

September 30, 2010

EPA

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Acronyms and Abbreviations

ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
CDPH	California Department of Public Health
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Chemicals of Concern
DOD	U.S. Department of Defense
DOJ	U.S. Department of Justice
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
HQ	hazard quotient
LGAC	liquid-phase granular-activated carbon
MCLs	Maximum Contaminant Levels
MSL	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NPV	Net Present Value
O&M	operation and maintenance
OU	operable unit
PRPs	potentially responsible parties
RAOs	Remedial Action Objectives
RASP	Rialto Ammunition Backup Storage Point
RCB	Rialto-Colton groundwater basin
RCRA	Resource Conservation and Recovery Act
RfD	reference dose
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RSL	Regional Screening Level

SA OU	Source Area Operable Unit
SCAQMD	South Coast Air Quality Management District
TCE	trichloroethene
TSD	Treatment, Storage, and Disposal
VFD	variable frequency drive
VGAC	vapor-phase granular-activated carbon
VOCs	volatile organic compounds
Water Board	California Regional Water Quality Control Board, Santa Ana Region
WVWD	West Valley Water District

Part 1: The Declaration

1.1 Site Name and Location

The Source Area Operable Unit (Source Area OU or SA OU) of the B.F. Goodrich Superfund Site (Site) is located in San Bernardino County in the city of Rialto, California. See Figure 1 for the Site location. The CERCLIS ID for the Site is CAN000905945.

1.2 Statement of Basis and Purpose

This Record of Decision (ROD) selects an interim remedy for the Source Area OU of the B.F. Goodrich Superfund Site. The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for the Site. The State of California concurs with the selected remedy.

1.3 Assessment of the Site

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment, and/or from pollutants or contaminants from this Site which may present an imminent and substantial endangerment to public health or welfare.

1.4 Description of the Selected Remedy

EPA's selected remedy for the Source Area OU of the B.F. Goodrich Site is a groundwater pump and treat system intended to limit the movement of contaminated groundwater from the 160-acre source area. The 160-acre source area (160-acre area) is where most or all of the contaminants entered the groundwater and testing has identified the highest levels of groundwater contamination. The selected remedy is the first of at least two planned remedies to address contaminated groundwater at the Site. The Remedial Action Objectives (RAOs) of this first remedy are to: 1) protect water supply wells and groundwater resources by limiting the spread of contaminated groundwater from the 160-acre area; and 2) remove the contaminants from the groundwater. The remedy will be designed to intercept and provide hydraulic control (also known as hydraulic containment or hydraulic capture) of contaminated groundwater in a targeted area of contamination during all expected groundwater flow conditions.

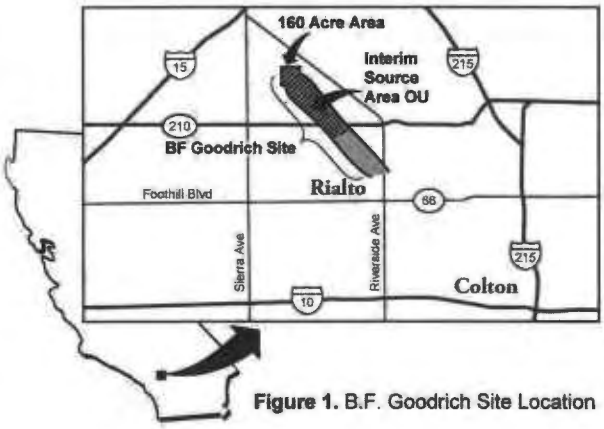

Figure 1. B.F. Goodrich Site Location

To evaluate compliance with EPA's objectives, the remedy includes a monitoring program that will provide data to determine if the remedy is achieving hydraulic control of the targeted area of contamination. The evaluation will examine if the hydraulic capture zone created by the remedy encompasses the targeted portions of the aquifers during all groundwater flow conditions.

Compliance with EPA's objectives will also be evaluated by determining if contaminant concentrations in groundwater at compliance wells constructed downgradient of the extraction locations decrease over time.

In addition to the SA OU, one or more additional remedies are planned to address human health risks posed by contaminated groundwater that has already moved past the area targeted by this remedy. EPA also plans to determine the appropriate in situ cleanup goals for the aquifer and evaluate the feasibility of cleaning up contaminated soil.

The remedy for the SA OU includes the construction and operation of the following components, as depicted in Figure 2.

- Groundwater extraction wells pumping approximately 1,500 to 3,200 gallons per minute (gpm) of contaminated water, located approximately 1.5 miles downgradient of the 160-acre source area and no more than 1,500 feet downgradient of the Intermediate and Regional Aquifer Target area defined in Section 2.4.8
- Liquid-phase granular-activated carbon (LGAC) or other effective water treatment systems to reduce the concentrations of trichloroethene (TCE) and other volatile organic compounds (VOCs) in the extracted groundwater below levels allowed by federal and state drinking water standards

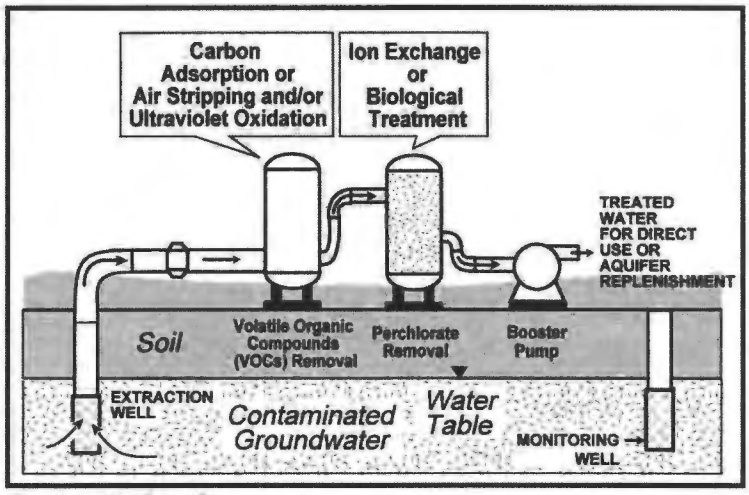

Figure 2. Site Remedy

- Ion exchange water treatment systems or other effective water treatment systems to reduce the concentration of perchlorate in the extracted groundwater below the level allowed by the state drinking water standard
- Pipelines and pumps to convey the contaminated water from the groundwater extraction wells to the treatment plant
- Pipelines and pumps to convey the treated water from the treatment plant to one or more local water utilities for distribution to the utility's customers as drinking water supply (or to reinjection wells to replenish the aquifer if agreements cannot be reached with the water utilities in a reasonable period of time to distribute the water)
- A groundwater monitoring program

The extraction, treatment, and conveyance systems will have a capacity of 3,200 gpm unless EPA determines during the remedial design process that more or less capacity is required to meet the RAOs.

1.5 Statutory Determinations

The selected remedy is protective of human health and the environment in the short term and is intended to provide adequate protection until a final ROD is signed. The remedy complies with federal and state requirements that are applicable or relevant and appropriate to this interim remedial action, and is cost-effective.

Although this interim action is not intended to fully address the statutory mandate for permanence and treatment to the maximum extent practicable, the remedy does utilize treatment and thus supports the statutory mandate. 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, although partially addressed in this remedy, will be addressed by the final response action. Subsequent actions are planned to fully address the threats posed by conditions at this Site.

Because this remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment within 5 years after commencement of the remedial action. Because this is an interim action ROD, review of this Site and remedy will be ongoing as EPA continues to develop remedial alternatives for the Site.

1.6 ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this Site.

- Chemicals of concern (COCs) and their respective concentrations (Section 2.6.1)
- Baseline risk represented by the COCs (Section 2.6.4)
- Cleanup levels established for COCs and the basis for these levels (Section 2.11.2.2)
- Current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (Section 2.5)
- Potential groundwater use that will be available at the Site as a result of the selected remedy (Section 2.11.4)
- Estimated capital, annual operation and maintenance (O&M), and total present value costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.11.3)
- Key factors that led to selecting the remedy (such as how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria) (Section 2.11.1)

1.7 *Authorizing Signatures and Support Agency Acceptance of Remedy*

This ROD documents the Interim Remedy for contaminated groundwater at the Source Area Operable Unit of the B.F. Goodrich Site. The remedy was selected with the concurrence of the State of California. The Assistant Director of the Regional Superfund Division has been delegated the authority to approve and sign this ROD.

Kathleen Salyer

Kathleen Salyer
Assistant Director, Superfund Division
California Site Cleanup Branch
U.S. Environmental Protection Agency Region IX

9/30/10
Date

Part 2: Decision Summary

2.1 Site Name, Location, and Description

The B.F. Goodrich Superfund Site includes soil and groundwater contaminated with perchlorate, trichloroethene, and other chemicals in an industrial area in Rialto, California known as the 160-acre area. The Site, located about 60 miles east of the city of Los Angeles, also includes contaminated groundwater that has spread from the 160-acre area. See Figure 1 for the Site location and Figure 3 for an aerial photo of the Rialto area (looking to the northwest toward the San Gabriel and San Bernardino Mountains). Land use in the area overlying the contaminated groundwater is largely industrial, commercial, and residential, and a limited amount of open space. EPA's CERCLIS ID No. for the Site is: CAN000905945.

Figure 3. Aerial Photo of the Rialto Area (looking to the northwest)

From 2002 until about 2008, the California Regional Water Quality Control Board, Santa Ana Region (Water Board) led investigation and cleanup efforts at the Site. EPA added the Site to the Superfund National Priorities List (NPL) in September 2009 and is now the lead agency for the Site. The Water Board is the primary state agency supporting EPA's efforts.

The California Department of Toxic Substances Control (DTSC) is also involved at the Site. DTSC's primary responsibility is the investigation and remediation of an operation on the 160-acre area associated with a former treatment, storage, and disposal facility (a TSD facility).

The groundwater at or near the Site is a vital resource for residents of the cities of Rialto and Colton. The Rialto-Colton groundwater basin (RCB), in which some or all of the Site is located, has in recent years supplied more than 8 million gallons of drinking water per day, enough water to meet the needs of tens of thousands of area residents. The contamination has forced the closure of many drinking water supply wells in the basin.

EPA's response activities at the Site have been conducted primarily under the authority established in the federal Superfund law, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. Section 9601 et seq. Remedial investigation work at and near the Site has been completed by EPA, Potentially Responsible Parties, local water utilities, the County of San Bernardino, the U.S. Geological Survey, and others.

Since about 2005, the U.S. Department of Defense (DOD) has spent or committed approximately $20 million in public funds to the Rialto area, primarily to demonstrate and evaluate water treatment technologies capable of removing perchlorate from contaminated water supply wells. Some of water treatment systems installed with DOD funding are now operated by local water utilities. The water treatment systems have been installed on wells some distance from the 160-acre area; not in the areas targeted by the SA OU. The State of California has also provided or committed approximately $19 million in funds to pay for water treatment systems at and near the Site.

The SA OU is not intended to address an area of groundwater contamination to the south and west of the 160-acre area, which originates, at least in part, in an area where earthen-covered concrete storage igloos were constructed by the U.S. Army in the 1940s. That area is now known as the former bunker area and is shown in Figure 4. Most of the igloos were demolished in 1998 after the County of San Bernardino purchased the property for expansion of the Mid-Valley Sanitary Landfill (MVSL).

2.2 Site History and Enforcement Activities

The following sections provide a site history, and summarize enforcement activities and community participation activities at the Site.

2.2.1 Site History

In 1942, the U.S. Army acquired 2,822 acres of mostly undeveloped land for use as the Rialto Ammunition Backup Storage Point (RASP). The U.S. Army subsequently developed and operated on approximately 740 of the 2,822 acres. The 740-acre area includes most or all of the 160-acre area. The RASP included a network of rail spurs to store rail cars, bunkers adjacent to the rail spurs, approximately 20 earthen-covered concrete storage igloos, approximately four magazines used to store ammunition, and assorted buildings. The RASP was an inspection, consolidation, and storage facility for railcars transporting bombs, ammunition, and other ordnance to the Port of Los Angeles, California. The materials handled at the RASP are likely to have included flares and other pyrotechnics containing perchlorate salts.

In 1946, after World War II ended, the United States government sold the RASP property. Since then, portions of the former RASP property have been used by a variety of defense contractors, fireworks manufacturers, and others who used perchlorate salts and other chemicals in their manufacturing processes or in their products.

From about 1952 to 1957, the West Coast Loading Corporation tested and manufactured pyrotechnic devices onsite. West Coast Loading Corporation manufactured photoflash flares and ground-burst simulators, both containing potassium perchlorate, used its facility in 1957 to dry a large amount of ammonium perchlorate, and disposed of wastes onsite.

From about 1957 to 1962, B.F. Goodrich Corporation (Goodrich) conducted research, development, testing, and production of solid-fuel rocket propellant and solid-fuel missile and rocket motors containing ammonium perchlorate, used chlorinated solvents in its operations, and disposed of wastes in one or more onsite pits.

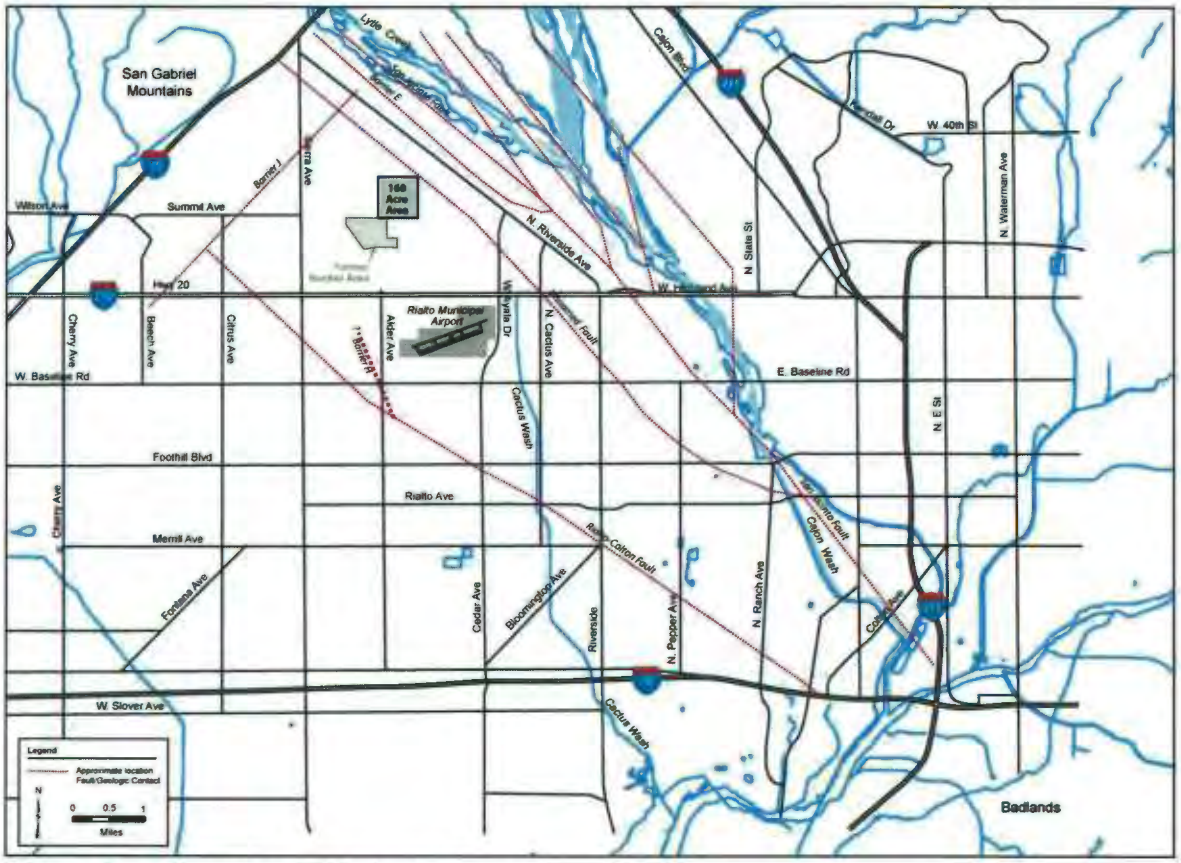

Figure 4. B.F. Goodrich Site and Vicinity Key Features

From about 1968 to 1987, Pyrotronics (including its Apollo, Red Devil, and California Display Fireworks divisions) manufactured, tested, and distributed pyrotechnics containing potassium perchlorate, and disposed of wastes onsite.

Since 1979, Pyro Spectaculars Inc. (PSI), a public display fireworks operator, wholesaler, and importer and exporter of fireworks, has operated on the 160-acre area. PSI has tested fireworks, burned waste materials, and disposed of wastes onsite.

Since about 1989, American Promotional Events – West (APE-West) has operated on the 160-acre area. APE-West has tested and stored fireworks containing potassium perchlorate and burned defective and off-spec fireworks onsite.

2.2.2 Enforcement Activities

Enforcement efforts by the State of California began in about 2002, when the Water Board directed multiple parties to investigate the extent of soil and/or groundwater contamination at and near the Site. Between 2002 and 2008, the Water Board issued approximately 23 directives to current and past property owners and tenants pursuant to state authority, requiring submittal of information, soil testing, and/or groundwater testing. Since 2005, the California Department of Toxic Substances Control (DTSC) has also directed and overseen soil testing on a portion of the Site.

EPA enforcement efforts have included the issuance of a Unilateral Administrative Order for Remedial Investigation (RI) work (2003), notifications to three companies that operated at the Site (or their corporate successors) and two current property owners that may be responsible for the contamination (2008), an Administrative Order on Consent for RI work (2009), and a complaint filed by the U.S. Department of Justice (DOJ) on EPA's behalf pursuant to CERCLA and the Resource Conservation and Recovery Act (RCRA) seeking reimbursement of costs and performance of response actions by the defendants to the lawsuit (2010).

2.2.3 Community Participation

The January 2010 Remedial Investigation/Feasibility Study (RI/FS) Report and Proposed Plan for the SA OU of the B.F. Goodrich Site were made available to the public on or about February 2, 2010. (Note that the RI/FS and Proposed Plan refer to the OU as the Interim Source Area Operable Unit. The name has been shortened to the Source Area Operable Unit to improve the readability of the ROD.) They were added to EPA's website and EPA's two information repositories maintained at the EPA Superfund Records Center (located at 95 Hawthorne Street in San Francisco, CA 94105) and at the Rialto Branch Library (located at 251 West 1st Street in Rialto, CA 92376). Documents included in the Administrative Record file were also made available at the two repositories. Copies of the Proposed Plan were sent on February 3, 2010, by email to approximately 68 parties and by regular mail to approximately 40 parties on EPA's site mailing list. Eighty copies of the Proposed Plan were provided on or about February 5, 2010 to a local environmental justice organization. A notice of the availability of the Proposed Plan was published in the San Bernardino Sun and Riverside Press-Enterprise newspapers on February 5, 2010. A public comment period was held from February 5, 2010, to March 8, 2010. During the public comment period, on February 10, 2010, a public meeting was held to present the Proposed Plan to the community. At this meeting, EPA representatives answered questions about the proposal and received one formal public comment on the plan. EPA's responses to comments on its proposed cleanup plan are included in the Responsiveness Summary, which is part of this ROD.

EPA also held a public meeting on December 12, 2009, to provide an update on EPA's investigation and cleanup efforts and to inform the community that a proposed cleanup plan would be available early in 2010. EPA will provide future updates through public meetings, fact sheets, email updates, public notices, and its website. Additionally, EPA has begun preparation of a formal Community Involvement Plan for the Site.

2.3 Scope and Role of Operable Unit

As is the case at many Superfund sites, the problems at the B.F. Goodrich Site are complex. Because of this complexity, EPA has organized its work at the Site into two operable units (OUs). An OU defines a discrete action that is an incremental step toward cleanup of a Superfund site.

The Source Area Operable Unit (SA OU), the subject of this ROD, is the first OU at the B.F. Goodrich Site. The SA OU reflects EPA's first priority at the Site, which is to limit further spread of the most-contaminated groundwater at the Site. The interim action will neither be inconsistent with, nor preclude, implementation of the final remedy. Because this action is considered interim, EPA is not setting numeric cleanup goals for the groundwater in the aquifer at this time (i.e., *in situ* cleanup goals).

Contaminated groundwater exceeding state and/or federal Maximum Contaminant Levels (MCLs) has already moved past the area targeted by this cleanup plan. One or more additional OUs are planned to address human health risks posed by this downgradient area after groundwater flow directions and the extent of contamination in the downgradient area are better understood. In 2009 and 2010, EPA completed a $3 million effort to install new groundwater monitoring wells and carry out other testing to better define the nature and extent of contamination in the downgradient area. As of September 2010, evaluation of data from the testing is ongoing.

EPA will determine cleanup goals for the aquifer in a future action and will evaluate the feasibility of cleaning up contaminated soil at the Site.

2.4 Site Characteristics

The following sections provide a conceptual site model, an overview of the site, and a summary of groundwater resources, chemical contaminants, the Site sampling strategy, known or suspected sources of contamination, the nature and extent of contamination, and the area and depth of groundwater contamination targeted by this remedy.

2.4.1 Conceptual Site Model

In the conceptual model for the Site (see Figure 5), perchlorate was released to the environment at multiple locations on the 160-acre area over a period of decades. Release mechanisms are assumed to have included onsite disposal in one or more unlined pits, leakage or overflow from an onsite impoundment, airborne dispersion of material handled during manufacturing, disposal of contaminated rinse water onto unpaved areas, and explosions. Releases began in the 1950s, and possibly earlier. VOCs are assumed to have been released to the environment in multiple locations at the 160-acre area by onsite disposal in one or more unlined pits and/or other means.

The contaminants released to the environment contaminated surface soils, then moved downward to the groundwater through the several-hundred-foot-thick vadose zone. The downward movement of contaminants is the result of infiltration and percolation of rainfall and other liquids as well as diffusion.

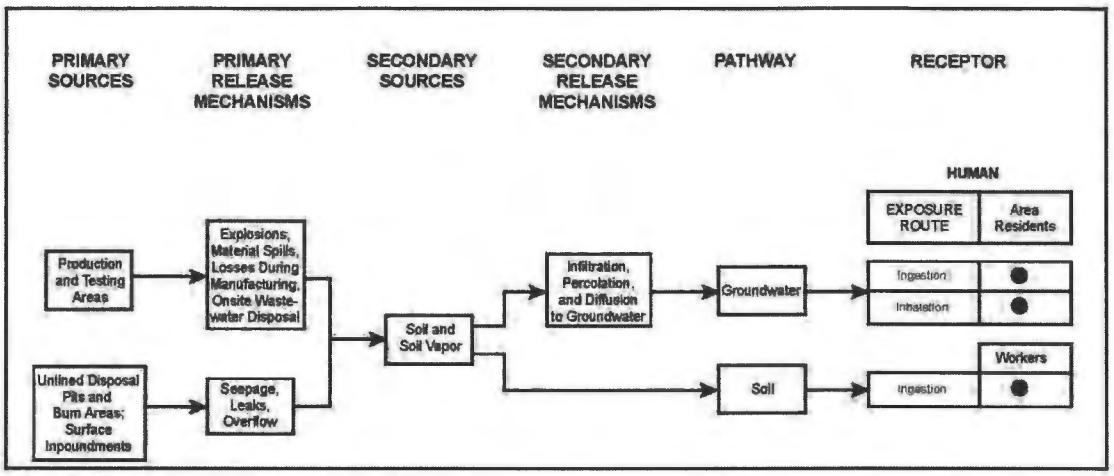

Figure 5. B.F. Goodrich Conceptual Site Model

Above-average rainfall in the Rialto Colton area during the winter of 2004-2005 resulted in a significant increase in groundwater levels later in 2005 and a one to two order of magnitude increase in groundwater contaminant concentrations at the Site. The increase in contaminant levels suggests that a significant amount of contaminant mass is still present in the vadose zone.

The contaminated groundwater poses a risk to human health if used for potable water supply. Large municipal water supply production wells are used to extract groundwater at the Site. These production wells typically draw groundwater from the Regional Aquifer with screened intervals ranging from several hundred to over one thousand feet below ground surface (bgs). There was a municipal water supply well (West Valley Water District [WVWD] Well 22) screened in the shallower interval known as the Intermediate Aquifer until the late 1990s, when the well was converted into a groundwater monitoring well.

2.4.2 Site Overview

The B.F. Goodrich Site includes contaminated soil and groundwater in a 160-acre industrial area, and contaminated groundwater that has spread from the 160-acre area over a distance of at least three miles. The land surface at the Site gently slopes from an elevation of approximately 1,700 feet above mean sea level (MSL) at the 160-acre area to approximately 1,300 feet above MSL several miles to the southeast. Most rainfall at the Site occurs from about November through April, with mean annual precipitation in the city of San Bernardino (located approximately 7 miles east of the Site) of approximately 16 inches. The average maximum summer temperature is 96 degrees Fahrenheit; the average winter minimum is 40 degrees Fahrenheit.

There are no perennial streams or rivers or natural wetlands at the Site. The most prominent surface water feature at the Site is the Cactus Wash, which is a former stream channel that has been channelized and severely altered to accommodate development and provide flood control. See Figure 4 for the location of the Cactus Wash.

2.4.3 Groundwater Resources at the Site

The Site includes a portion of the RCB. In recent years, the groundwater basin has supplied more than 8 million gallons of drinking water per day, enough water to meet the needs of tens of thousands of area residents. There are more than 20 large municipal drinking water supply wells in the RCB. The contamination has forced the closure of many of the wells, but some of these wells, equipped with water treatment systems to remove the contaminants, have reopened and currently provide drinking water. See Figure 6 for well locations.

The RCB is an alluvial basin located south of the San Gabriel and San Bernardino Mountains. The basin is approximately 10 miles long, from 1.5 to 3.5 miles wide, and is bounded by geologic faults on its western, northern, and eastern sides.

The RCB is filled with unconsolidated alluvial material consisting of sand, gravel, and boulders interbedded with lenticular deposits of silt and clay. Alluvial sediments in much of the RCB are about 500 to 1,000 feet deep. The unconsolidated alluvium is underlain by partly consolidated and consolidated continental deposits. The basement complex consists of metamorphic and igneous rocks.

The unconsolidated alluvial material contains groundwater in multiple water-bearing layers. At the 160-acre area, the depth to groundwater in the first layer, known as the Intermediate Aquifer, is currently about 400 to 450 feet bgs. The Intermediate Aquifer is unconfined, about 50 to 100 feet thick, and is underlain by a laterally extensive aquitard. It is comprised of multiple thin water-bearing units separated by thin aquitards and dry intervals. The deeper water-bearing layer, known as the Regional Aquifer, is generally unconfined to partly confined, and is about 300 to 500 feet thick. Potentiometric heads are as much as 150 feet higher in the Intermediate Aquifer than in the underlying Regional Aquifer, resulting in a strong downward hydraulic gradient between the two aquifers. About one to one and half miles to the southeast of the 160-acre area, the Intermediate Aquifer disappears and only the Regional Aquifer is present. Figure 7 depicts the two aquifers.

Groundwater flow in the RCB is strongly influenced by the presence of several geologic faults that restrict groundwater flow. Groundwater in the Intermediate Aquifer generally flows to the southeast, parallel to two major faults, at a speed of up to several feet per day. Groundwater in the Regional Aquifer generally flows to the southeast at an average rate of about one foot per day. Groundwater elevations and flow rates in the RCB vary both seasonally and year to year. The primary cause of this variability is year to year change in precipitation and associated recharge, although seasonal and year-to-year variability in groundwater pumping also affects water levels and groundwater flow directions.

Historical water level measurements from water supply wells screened in the Regional Aquifer indicate that water levels have varied by more than 100 feet during the period of record (1962-2009). From 2001 to 2009, drought and increased groundwater production have caused a significant decline in groundwater levels.

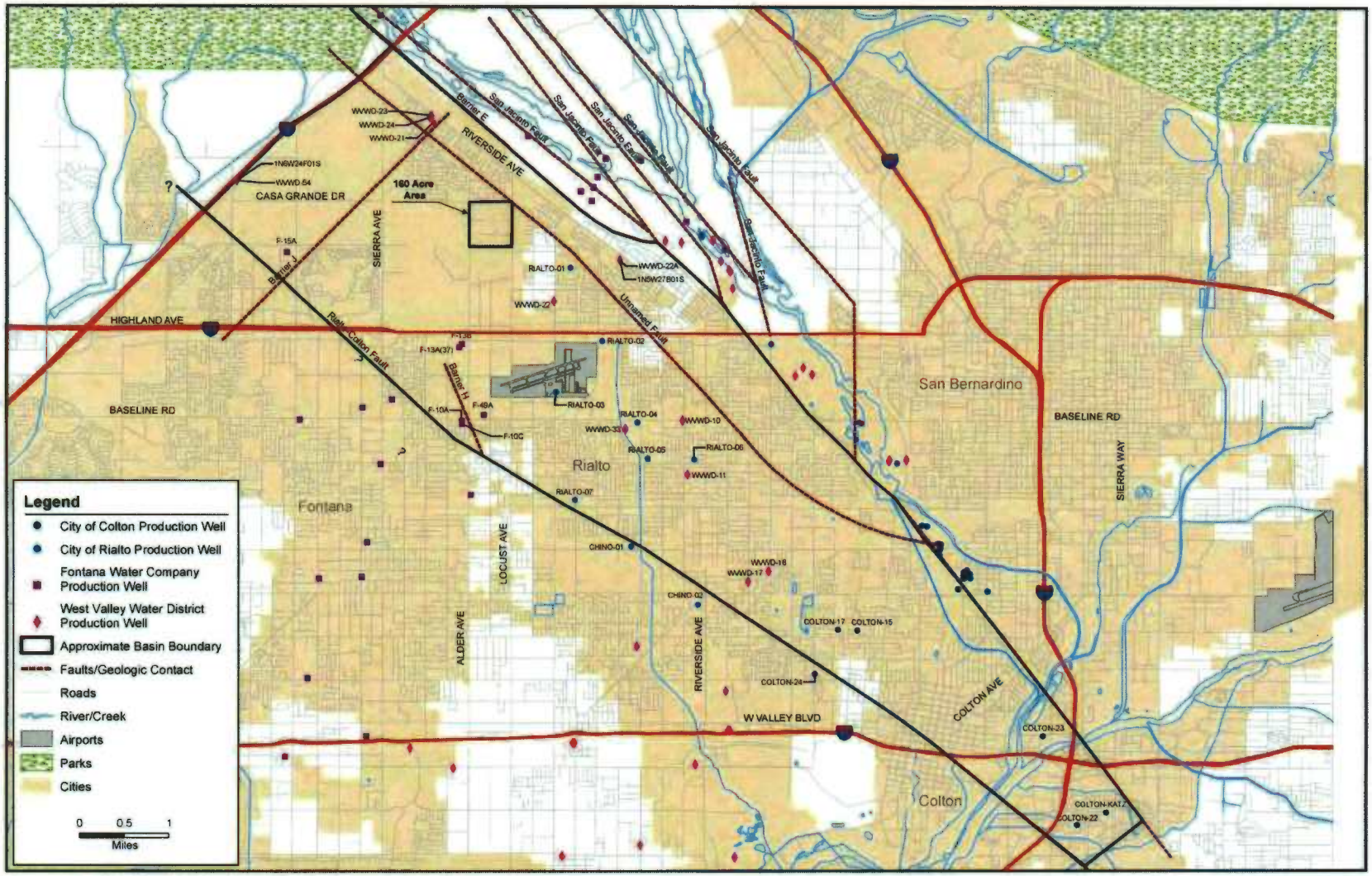

Figure 6. Drinking Water Supply Well Location Map

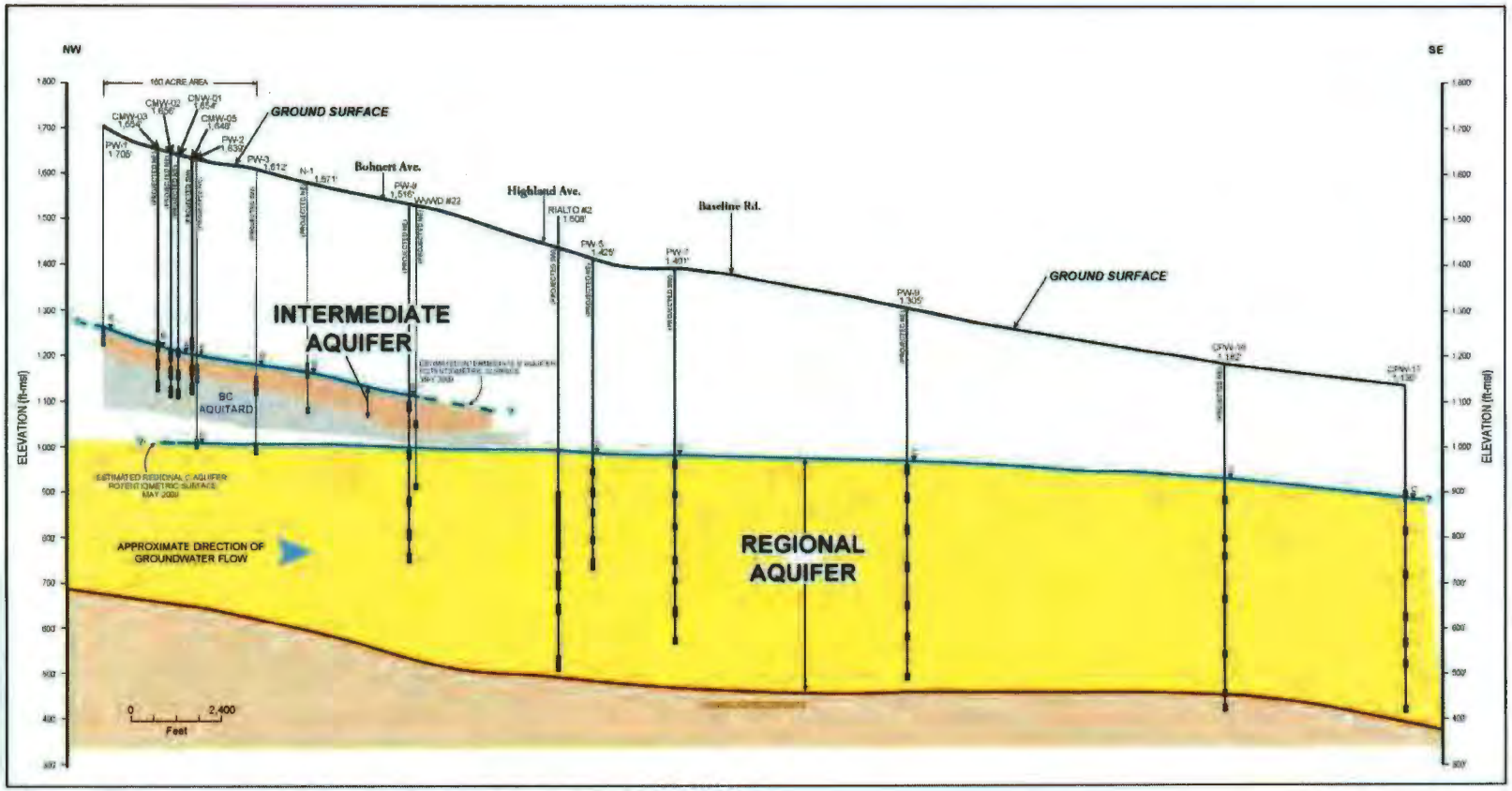

Figure 7. Rialto-Colton Groundwater Basin Aquifers

The primary source of water to the RCB is subsurface inflow from adjacent groundwater basins. Most of the groundwater leaves the RCB via municipal drinking water supply wells or as subsurface flow into adjacent groundwater basins. EPA has developed a groundwater flow model to help evaluate the effectiveness of remedial alternatives, as described in the January 2010 RI/FS Report.

2.4.4 Chemical Contaminants

Table 1 lists the chemicals of concern (COCs) at the Site. They include perchlorate, TCE, carbon tetrachloride, chloroform, and methylene chloride. The latter four chemicals are VOCs. Perchlorate salts are inorganic chemicals used as oxidizers in rocket propellant, flares, fireworks, and other products. TCE and carbon tetrachloride are cleaning solvents used extensively in the 1950s and 1960s. Employees of businesses that operated in the 160-acre area in the 1950s and 1960s have testified that perchlorate, TCE, and other solvents were handled or used at the Site. Perchlorate, TCE, and carbon tetrachloride can persist in groundwater for decades.

Table 1. Chemicals of Concern ***B.F. Goodrich Site - Source Area OU ROD***
carbon tetrachloride
chloroform
methylene chloride
trichloroethene (TCE)
perchlorate

2.4.5 Sampling Strategy

EPA used data from its groundwater sampling efforts in January 2008 and March and April 2009, and existing data generated by a variety of sources between 2003 and 2009, to provide information needed for the RI/FS.

EPA's January 2008 sampling effort included the collection and analysis of groundwater samples from 42 existing groundwater wells or well zones. Some groundwater monitoring wells have as many as six sampling ports to allow the collection of discrete samples from various depths. The wells are located upgradient, on, and as far as about three miles downgradient of the 160-acre area.

EPA's March and April 2009 sampling effort included the collection and analysis of groundwater samples from 55 existing wells or well zones. The wells are located upgradient, on, and as far as about five miles downgradient of the 160-acre area. In both sampling events, EPA selected key wells to verify results generated by other parties and to update results from wells that had not been sampled recently. Additional details regarding these sampling events are provided in the January 2010 RI/FS Report and in supporting documents in the Administrative Record.

EPA also used groundwater data generated by Potentially Responsible Parties (PRPs), local water utilities, and others between 2004 and 2009 for over 90 groundwater wells or well zones.

EPA also used soil and soil gas data generated by EPA, PRPs, current property owners, and others to characterize current and potential sources of groundwater contamination at the Site. A partial list of reports documenting the results of soil and soil gas testing at the Site is included as Table 1-1 in the January 2010 RI/FS Report.

2.4.6 Known or Suspected Sources of Contamination.

Groundwater testing at eight locations on or at the downgradient end of the 160-acre area (at the CMW-1 through CMW-5 groundwater monitoring well clusters, and at the PW-2, PW-3, and PW-4 groundwater monitoring wells) indicates that there are multiple locations on the 160-acre area where COCs have reached the groundwater. See Figure 8 for well locations. Groundwater testing upgradient of the 160-acre area (e.g., wells WVWD-24 and PW-1) indicates that there are only minor sources of perchlorate and no sources of TCE or other VOCs immediately upgradient of the 160-acre area. Perchlorate has been detected in the upgradient well PW-1 in 3 of 17 sampling events, at concentrations ranging from 1.2 to 6.3 micrograms per liter (µg/L). TCE has not been detected in PW-1 or WVWD-24. The PW-1 through PW-4 wells monitor one depth interval in the Intermediate Aquifer and the CMW locations each include three wells that monitor a different depth interval in the Intermediate Aquifer. Soil and soil gas testing have identified multiple locations where COCs have been spilled, dumped, or otherwise released at ground surface on the 160-acre area.

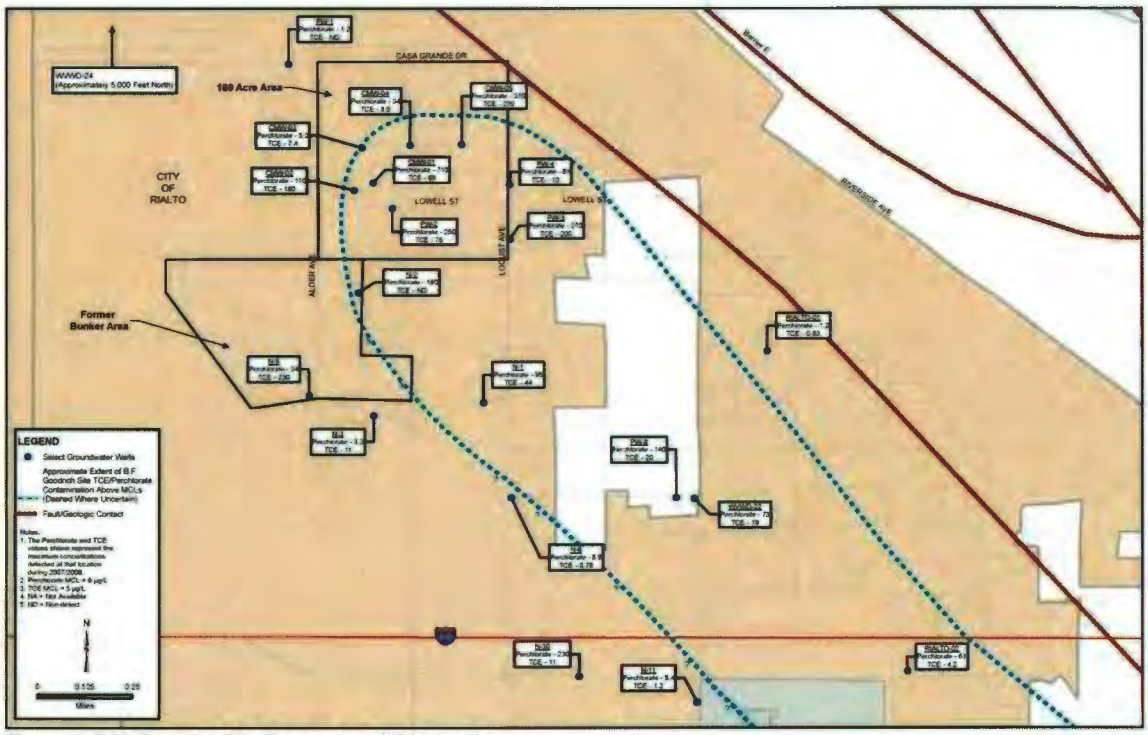

Figure 8. B.F. Goodrich Site Source Area Well Locations

2.4.7 Nature and Extent of Contamination at the Site

The maximum perchlorate and TCE concentrations at the Site detected in groundwater samples analyzed in 2007 and 2008 are shown in Figure 11. A contour has been drawn on the figure to indicate the approximate extent of contamination in excess of drinking water MCLs associated with the Site.

The highest perchlorate concentration detected in groundwater at the Site is 10,000 µg/L. This concentration was detected at groundwater monitoring well PW-2 in April 2006, after Intermediate Aquifer water levels rose dramatically in 2005 in response to record rainfall in early 2005. The 10,000 µg/L perchlorate level was two orders of magnitude higher than the concentration measured less than 12 months earlier at the same location, suggesting that there was (and continues to be) substantial contaminant mass in the Intermediate Aquifer and overlying vadose zone. The peak TCE concentration of 1,500 µg/L was detected in groundwater monitoring well CMW-1A, in July 2006.

As shown in Figure 6, approximately 4,000 feet downgradient of the 160-acre area is WVWD well WVWD-22, which was used as a water supply well until 1990. It was later converted into a monitoring well cluster with screens in the Intermediate and Regional Aquifers. Well WVWD-22 is the location where TCE and perchlorate contamination were first detected at the Site. TCE was detected first, in 1989, then perchlorate in 1997. Perchlorate concentrations in well WVWD-22 have been as high as 1,000 µg/L; TCE concentrations have been as high as 76 µg/L. Perchlorate and/or TCE have affected four City of Rialto groundwater wells at the Site and may have affected other WVWD and City of Colton wells.

As illustrated in Figure 9, the groundwater contamination at the 160-acre area (shown at the left end of the figure) appears to be limited to the Intermediate Aquifer and portions of the BC Aquitard. The exact location where the contaminated groundwater first moves downward from the Intermediate Aquifer into the Regional Aquifer has not been determined, but is likely to be downgradient of the 160-acre area. The downward movement could be the result of leakage through the BC Aquitard or, more likely, from downward movement through wells screened in both aquifers. At the WVWD-22 well site, monitoring data confirm that groundwater in both the Intermediate and Regional Aquifers is contaminated. Further downgradient from the 160-acre area, between wells WVWD-22 and Rialto-02, the BC Aquitard pinches out and the Intermediate and Regional Aquifers merge.

Contaminated groundwater originating at the 160-acre area has been detected further downgradient of WVWD-22 at monitoring well PW-5, located approximately two miles from the 160-acre area; at well PW-7, located another 0.5-mile downgradient; and at well PW-9, located one mile further downgradient. At well PW-5, perchlorate concentrations as high as 1,000 µg/L were detected in 2008 and 2009. This concentration is more than 160 times the California MCL of 6 µg/L. TCE in well PW-5 reached 27 µg/L, considerably above the MCL of 5 µg/L. At well PW-9, perchlorate concentrations were as high as 390 µg/L in 2008 and 2009, exceeding the California MCL by a factor of 65. TCE has also exceeded the MCL at this well location, which is adjacent to the Rialto-06 municipal water supply well. More recent sampling, which occurred after the completion of the January 2010 RI/FS report, found increased concentrations of perchlorate. Perchlorate at PW-5 increased from 970 µg/L in March 2009 to 1,600 µg/L in April 2010; and perchlorate at PW-9 increased from 390 µg/L in March 2009 to 400 µg/L in April 2010. The April 2010 results have been added to the Administrative Record.

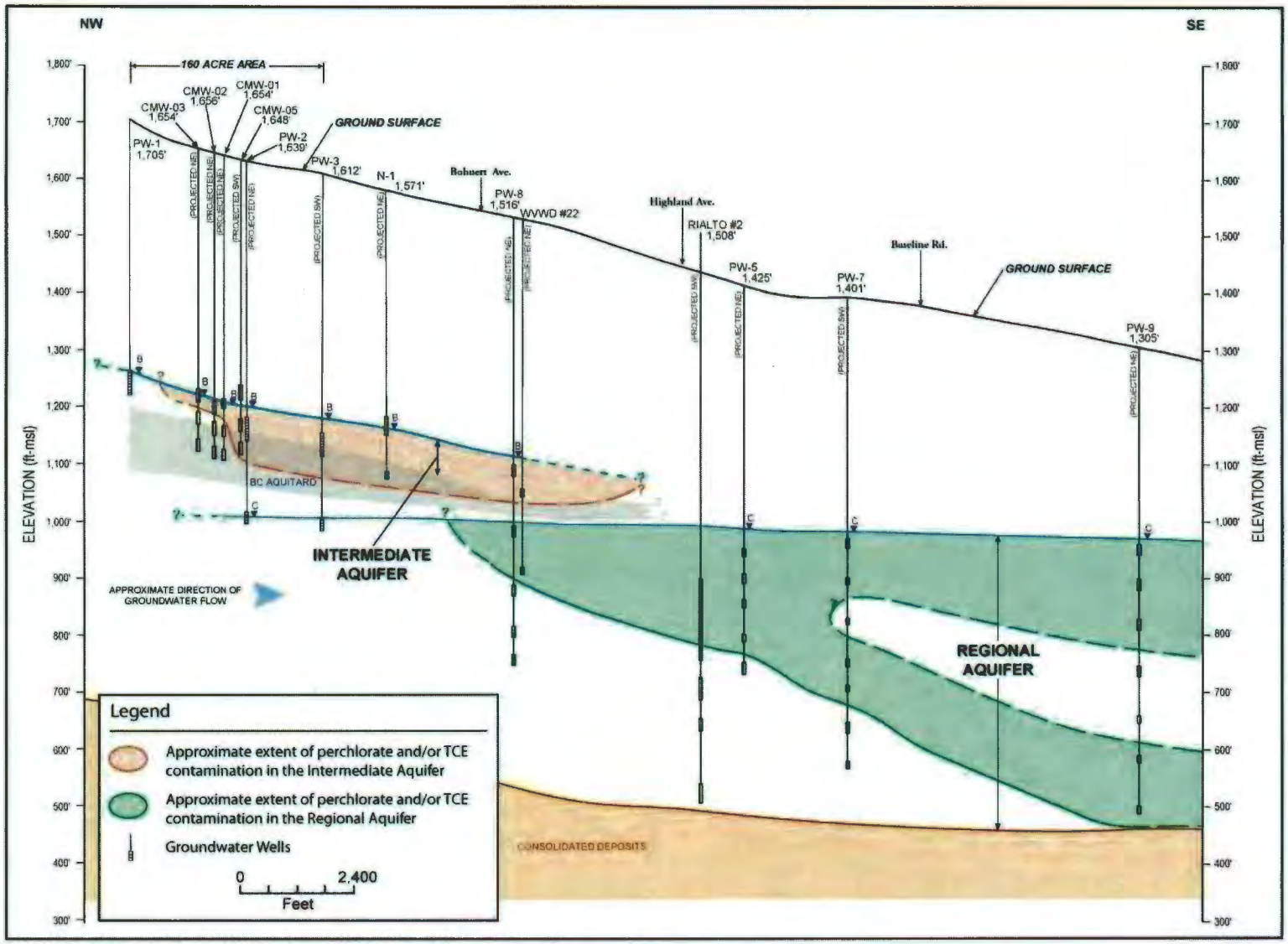

Figure 9. Approximate Vertical Extent of Groundwater Contamination

Perchlorate concentrations at the City of Rialto's water supply well Rialto-06, which is located about three miles downgradient of the 160-acre area, steadily increased between about 2000 and 2009 (see Figure 10).

Perchlorate concentrations at the City of Rialto's water supply well Rialto-04, located about 2.5 miles downgradient of the 160-acre area, also steadily increased beginning in about 2004. The perchlorate concentration in the Rialto-06 well exceeded 300 µg/L in late 2008, and was measured at 230 µg/L in April 2010 (the most recent data available). The April 2010 result has been added to the Administrative Record. The extent of the contamination downgradient of Rialto-06 (to the south or southeast) has not been delineated and groundwater flow directions in the area downgradient of Rialto-06 are not well-understood. These data gaps do not limit or interfere with the evaluation of remedial alternatives in the SA OU RI/FS, but additional data are needed to determine what additional remedial actions are appropriate downgradient of Rialto-06.

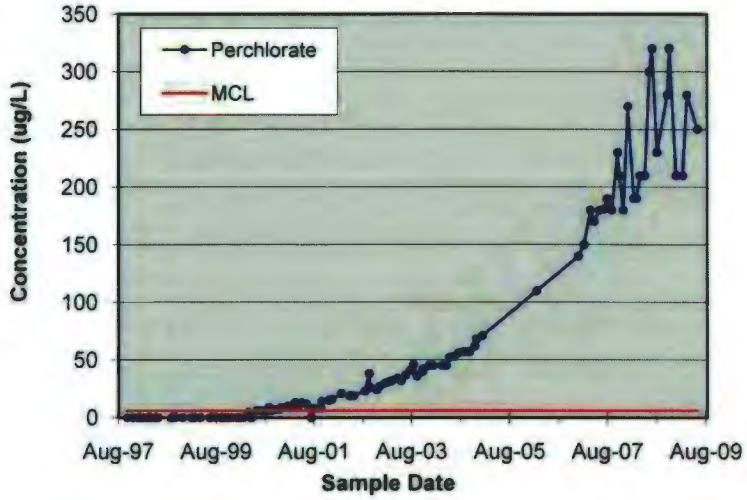

Figure 10. Perchlorate Concentrations at the Rialto-06 Drinking Water Well

EPA has also reviewed other results from April 2010 and other data that became available after completion of the January 2010 RI/FS Report to determine if there have been significant changes in the nature or extent of contamination that would affect EPA's evaluation of the SA OU. The data, which have been added to the Administrative Record, include: results from the January 2010 analysis of groundwater samples from monitoring wells CPW-16 and CPW-17 (January 15, 2010); results from the analysis of groundwater samples from monitoring wells CMW-1 through CMW-5 (May 2010 and August 2010); a report summarizing the results of a study completed by Emhart Industries in 2009 (February 2010); a report prepared by Geologic Associates with updated hydrogeologic modeling of groundwater flow and transport within the northern RCB (February 2010); and three quarterly monitoring reports prepared by Geologic Associates presenting the results of groundwater monitoring related to the Rialto-03 groundwater treatment system (February 2010, April 2010, and August 2010). After review of these data, EPA has concluded that there have not been significant changes in the nature or extent of contamination that would affect EPA's evaluation of the SA OU.

2.4.8 Area and Depth Targeted in this Operable Unit

The SA OU targets the most contaminated groundwater at the Site, which extends from the 160-acre area about 1.5 miles to the southeast. The targeted area includes the portion of the aquifer where perchlorate has been detected in groundwater at a concentration as high as 10,000 µg/L (1,600 times the MCL), and TCE has been detected in groundwater at a concentration as high as 1,500 µg/L (300 times the MCL). Carbon tetrachloride has also been detected above its drinking

water standard of 0.5 µg/L. In the targeted area downgradient of the 160-acre area (e.g., at PW-8), perchlorate concentrations evaluated in the RI/FS (from 2008 and 2009) were up to 20 times the MCL (118 µg/L) and TCE concentrations were more than eight times the MCL (46 µg/L). Perchlorate at PW-8 increased from 118 µg/L in March 2009 to 180 µg/L in April 2010; and TCE at PW-8 decreased slightly from 46 µg/L in March 2009 to 37 µg/L in April 2010. The April 2010 results have been added to the Administrative Record.

The areas of contaminated groundwater targeted for hydraulic control (the target or targeted area) are defined as the portion of the Intermediate Aquifer contaminated with perchlorate or TCE above MCLs, the underlying portion of the Regional Aquifer contaminated with perchlorate or TCE above MCLs, and an additional portion of the Regional Aquifer extending downgradient to where the Intermediate and Regional aquifers merge. The targeted area is shown on Figure 11 in plan view and on Figure 12 as a vertical cross section.

The *upgradient boundary* of the target area in the Intermediate Aquifer is near CMW-3, the northernmost monitoring well on the 160-acre area where the level of groundwater contamination consistently exceeds MCLs. The upgradient boundary of the target area in the Regional Aquifer is the location where contaminated groundwater begins to move downward from the Intermediate Aquifer into the Regional Aquifer. The assumed location is at well WVWD-22, where perchlorate and TCE are present in the multi-port monitoring well PW-8, located adjacent to WVWD-22, at concentrations above the MCL in its uppermost Regional Aquifer monitoring zone. Before it was converted into a monitoring well in 1999, WVWD-22 was a production well screened across both the Intermediate and Regional aquifers. The well was operated only sporadically and, given the strong vertically downward gradients observed in the area, may have acted as a conduit for downward migration of contamination into the Regional Aquifer before it was converted into a monitoring well.

It is also possible that contaminated groundwater has moved downward from the Intermediate to the Regional Aquifer via other wells screened in both aquifers, or directly through the BC Aquitard. Given the low permeability of the BC Aquitard, very long vertical migration times are expected where the aquitard is laterally extensive (i.e., beneath and immediately downgradient of the 160-acre area) and movement through the BC Aquitard is less likely to be a major contributor to vertical migration. Direct migration through the aquitard is more likely toward the downgradient portion of the Intermediate Aquifer, near where the Intermediate and Regional Aquifers merge.

The *downgradient boundary* of the target area is where the Intermediate and Regional Aquifers merge. The aquifers appear to merge between WVWD-22 and Rialto-02. The location appears to be close to and possibly just upgradient of the Rialto-02 well.

It is expected that additional monitoring wells will be installed during the remedial design phase of the remedy to refine the upgradient and downgradient boundaries of the targeted area. There are no monitoring wells completed in the Regional Aquifer upgradient of well WVWD-22, although there are three piezometers screened in the Regional Aquifer at the 160-acre area (PW2A, PW3A, and PW4A). Based on the interpreted depth of contamination in the vicinity of the Rialto-02 well, the maximum depth of the Regional Aquifer target area is approximately 650 to 700 feet bgs.

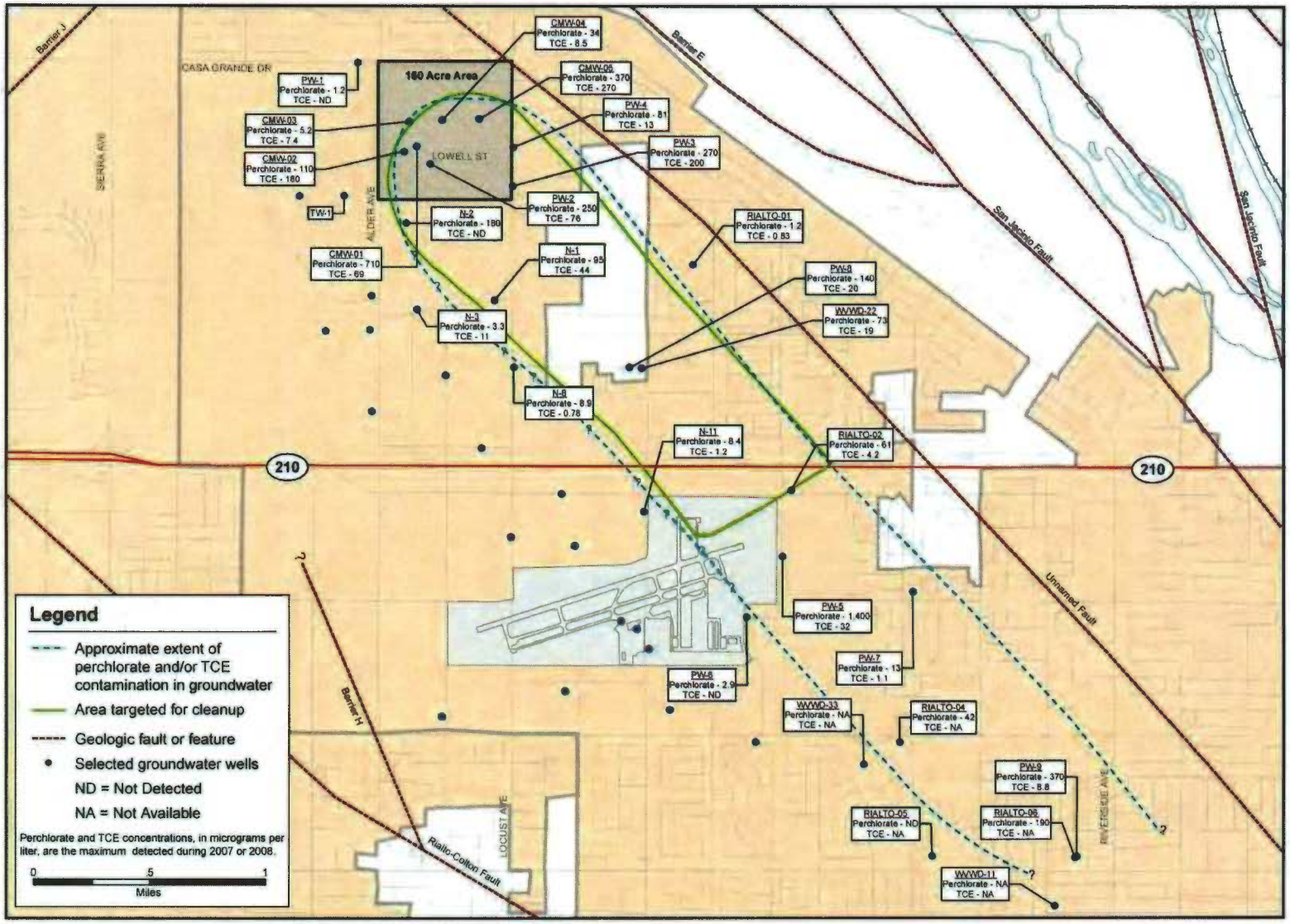

Figure 11. Approximate Extent and Targeted Area of Groundwater Contamination

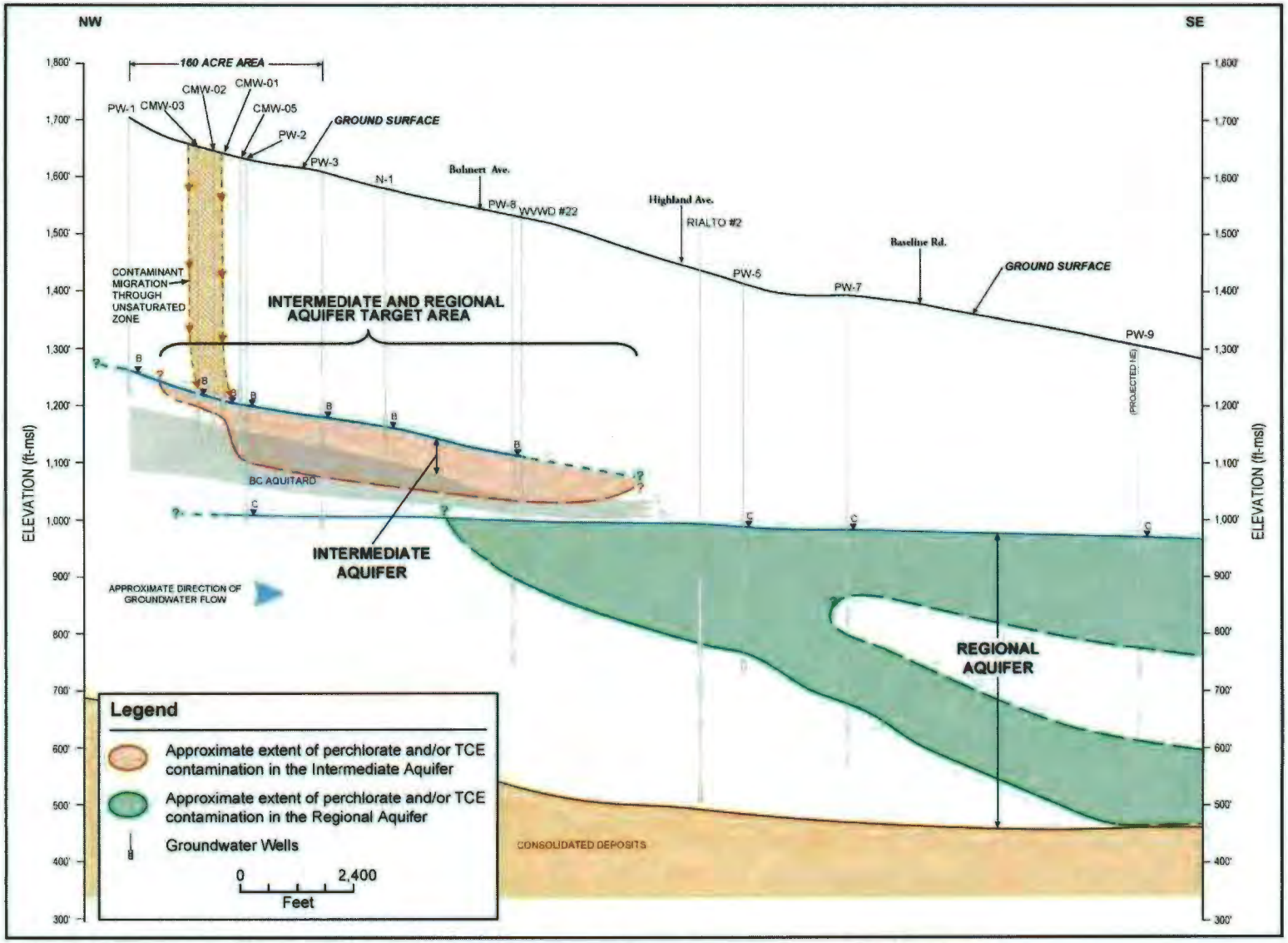

Figure 12. Targeted Area of Groundwater Contamination (Vertical Cross Section)

2.5 Current and Potential Future Resource and Land Use

The RCB is an important source of drinking water for the cities of Rialto, Colton, and Fontana. Between 1997 and 2007, the RCB supplied approximately 7.5 to 16 million gallons per day (MGD) to residents and businesses in the region. There are four water utilities responsible for the majority of the groundwater pumping in the RCB: the City of Rialto, WVWD, the City of Colton, and Fontana Water Company (FWC).

A 1961 decree entered in San Bernardino County Superior Court restricts pumping of groundwater from the RCB (The Lytle Creek Water & Improvement Company vs. Fontana Ranchos Water Company, et al., Action 81264). The decree allows unlimited pumping from the basin by parties to the decree if the average of the spring-high water levels at three wells specified in the decree (the index wells) exceeds 1,002.3 feet above mean sea level (MSL). When the level is between 969.7 and 1,002.3 feet above MSL, a party's entitlement is the sum of the amounts specified in the decree. If the average spring-high water level drops below 969.7 feet above MSL, the entitlement is reduced by 1 percent for every foot the average is below 969.7 feet above MSL, but not by more than 50 percent. There is a dispute among the parties to the Decree over the time period that restrictions, if in effect, apply.

Designated existing or potential beneficial uses for the RCB in the 2008 State of California Water Quality Control Plan are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

Because the selected remedy only addresses groundwater, current and reasonably anticipated future land uses have limited relevance to the selected remedy. The primary relevance is in the selection of locations for the water treatment equipment and other facilities to be constructed as part of the remedy. These decisions will be made post-ROD, during the remedial design phase. Land use at the Site is a mix of residential, industrial, and commercial uses, with limited open space.

2.6 Summary of Site Risks

EPA is taking action at the SA OU because the groundwater at the Site is a current source of drinking water to tens of thousands of residents and businesses, the levels of contamination in groundwater exceed federal and/ or state drinking water standards, the calculated site-specific Hazard Index value significantly exceeds one, and contaminated groundwater continues to spread into uncontaminated and less contaminated portions of the groundwater aquifer. This interim action is necessary to stabilize the Site, prevent further environmental degradation, and achieve significant risk reduction while a final remedial solution is being developed.

EPA's decision to take action is based on a baseline risk assessment, which estimates the risks posed by the Site if no action is taken. The baseline risk assessment, included in its entirety as Section 1.7 of the January 2010 RI/FS report, also identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for this Site.

Because there is no known exposure pathway in which ecological receptors could be exposed to contaminated groundwater, an ecological risk assessment was not completed as part of this interim action.

2.6.1 Contaminant Identification

Perchlorate and most VOCs detected in the January 2008 and March/April 2009 groundwater sampling conducted by EPA have been identified as COCs. The COCs are perchlorate, carbon tetrachloride, chloroform, methylene chloride, and TCE.

Table 2 lists the COCs detected in groundwater and presents the range of concentrations detected for each COC in the Intermediate and Regional Aquifers in the 2008 and 2009 sampling events, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the Site), exposure point concentrations for each of the COCs detected in groundwater, and the statistical measure used to derive the exposure point concentration. Higher contaminant concentrations detected at some locations by others than EPA before 2008 were not used in the risk assessment. Exposure point concentrations are the concentrations used to estimate exposure and risk from each COC in the groundwater. The highest detected value was used as the exposure point concentration for each COC. The maximum value was used rather than the 95 percent upper confidence limit on the arithmetic mean concentration. This is the typical approach when the available data set is relatively small. Table 2 indicates that perchlorate and TCE were the most frequently detected COCs in groundwater at the Site.

For each multiport monitoring well or monitoring well cluster, all of the analytical results from wells or zones screened in the same aquifer (Intermediate or Regional) were averaged together. This approach provides a single concentration estimate for each aquifer at each well location. For the wells that were sampled both in 2008 and 2009, only 2009 data were used.

The January 2008 and March/April 2009 groundwater sampling results were obtained and evaluated in accordance with procedures detailed in EPA-approved field and laboratory planning documents.

2.6.2 Exposure Assessment

In the exposure assessment, EPA identifies exposure pathways based on the Conceptual Site Model for the Site. Receptors that could potentially be exposed to the contaminated groundwater include current and future residents that receive drinking water from groundwater wells near the 160-acre area. Exposure could occur through inhalation (VOCs only) or ingestion (VOCs or perchlorate) of the contaminants present in the groundwater. Inhalation of contaminants can occur during showering and other activities that enhance the movement of volatile chemicals from water to air. Exposure through dermal contact is not expected to be a significant pathway for these constituents.

Table 2. Measured Range of Concentrations for COCs and Exposure Point Concentrations
B.F. Goodrich Site - Source Area OU ROD
Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Concern	Minimum Conc. Detected (µg/L)	Maximum Conc. Detected (µg/L)	Frequency of Detection	Exposure Point Concentration	Statistical Measure
Intermediate Aquifer Groundwater	carbon tetrachloride	0.6	0.6	1 of 8	0.6	Max
	chloroform	0.2	0.3	3 of 8	0.3	Max
	methylene chloride	ND	ND	0 of 8	0.3	Max
	TCE	3	93	7 of 8	93	Max
	perchlorate	9	120	7 of 8	120	Max
Regional Aquifer Groundwater	carbon tetrachloride	ND	ND	0 of 13	0.3	Max
	chloroform	3.5	3.5	1 of 13	3.5	Max
	methylene chloride	0.3	0.3	1 of 13	0.3	Max
	TCE	0.3	5.8	9 of 13	5.8	Max
	perchlorate	1	288	10 of 13	288.1	Max

Notes:
If all results for a COC were non-detect, the Exposure Point Concentration was calculated using one-half of the highest reporting limit for the samples analyzed for that COC.
µg/L = micrograms per liter
ND = not detected
Max = maximum concentration

In keeping with EPA guidance for a baseline risk assessment, the risk assessment assumes that federal and state drinking water regulations that prohibit the use of contaminated water are not enforced.

2.6.3 Toxicity Assessment

Tables 3 and 4 summarize the source of toxicity information for each COC and, for noncancer effects, the target organ.

2.6.4 Risk Characterization

The risk characterization uses the outputs of the exposure and toxicity assessments to quantitatively characterize baseline risks associated with exposure to contaminated Intermediate and Regional Aquifer groundwater.

As part of the risk characterization, the exposure estimates were compared to primary California MCLs, EPA MCLs, and EPA tap water Regional Screening Levels (RSLs). The RSLs reflect potential exposure through ingestion and inhalation. RSLs are risk-based concentrations derived from standardized equations combining assumptions about human exposure to contaminants with EPA toxicity data. RSLs are considered by EPA to be protective for humans (including sensitive

groups) over a lifetime. For chemicals that exceed MCLs, MCL exceedance ratios (maximum chemical concentrations divided by the lower of the state or EPA MCL) were estimated.

As summarized in Table 3, primary MCL exceedance ratios in the Intermediate Aquifer are 1.2 for carbon tetrachloride, 19 for TCE, and 20 for perchlorate. In the Regional Aquifer, the MCL exceedance ratios are 1.2 for TCE and 48 for perchlorate.

Table 3. Risk Characterization Summary – Exceedances of MCLs
B.F. Goodrich Site - Source Area OU ROD

Chemical of Concern	Maximum Contaminant Level (µg/L)	EPA or CA MCL?	Maximum Conc. (µg/L)	MCL Exceedance Factor	Maximum Conc. (µg/L)	MCL Exceedance Factor
			Intermediate Aquifer Groundwater		Regional Aquifer Groundwater	
Carbon Tetrachloride	0.5	CA	0.6	1.2	< 0.5	-
Chloroform	80	EPA and CA	0.3	-	3.5	-
Methylene Chloride	5	EPA and CA	< 0.5	-	0.3	-
TCE	5	EPA and CA	93	19	5.8	1.2
Perchlorate	6	CA	120	20	288.1	48

Notes:
The lower of the EPA or California MCL (CA MCL) is listed.
There is no MCL for chloroform. The value listed (80 µg/L) is for total trihalomethanes.

For carcinogens, risks are also expressed as the incremental probability that an individual could develop cancer over a lifetime as a result of exposure to the carcinogen. The risk estimates are probabilities often expressed in scientific notation (e.g., 1×10^{-6} or 10^{-6}). An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an excess lifetime cancer risk because it would be in addition to the risks of cancer individuals face from nonsite causes such as smoking or exposure to too much sun. The chance that a typical individual would develop cancer from nonsite sources has been estimated to be as high as one in three. EPA's generally acceptable risk range for site-related exposures is 10^{-4} to 10^{-6}, with the 10^{-6} risk level used as the point of departure.

To estimate cancer risk, the maximum exposure estimate was divided by the RSL concentration designated for cancer evaluation. The resulting ratio was multiplied by 1×10^{-6} to estimate chemical-specific risk for a reasonable maximum exposure. The chemical-specific risks were then summed to estimate the total cancer risk associated with exposure to contaminated groundwater in each of the Intermediate and Regional Aquifers.

As shown in Table 4, the total cancer risk in the two aquifers is between 2×10^{-5} (Regional Aquifer) and 6×10^{-5} (Intermediate Aquifer).

Table 4. Risk Characterization Summary – Carcinogens
B.F. Goodrich Site - Source Area OU ROD

Chemical of Concern	Regional Screening Level (µg/L)	Source of Toxicity Information	Estimated Lifetime Cancer Risk – Exposure to Intermediate Aquifer	Estimated Lifetime Cancer Risk - Exposure to Regional Aquifer
carbon tetrachloride	0.20	IRIS	2.9×10^{-6}	NA
chloroform	0.19	CA OEHHA	1.6×10^{-6}	1.81×10^{-6}
TCE	1.7	CA OEHHA	5.5×10^{-5}	3.41×10^{-6}
			TOTAL CANCER RISK = 6×10^{-5}	**TOTAL CANCER RISK = 2×10^{-5}**

Notes:
CA OEHHA = California Office of Environmental Health Hazard Assessment, part of the California Environmental Protection Agency
IRIS = EPA's Integrated Risk Information System

The potential for noncarcinogenic effects was also evaluated by comparing the estimated exposure level over a specified time period with a reference dose (RfD) derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient (HQ). An HQ<1 indicates that a receptor's estimated dose of a single contaminant is less than the RfD, and that toxic noncarcinogenic effects from that chemical are unlikely. If multiple chemicals of concern affect the same target organ (for example, the liver) or act through the same mechanism of action, a Hazard Index (HI) is calculated by adding the HQs for the chemicals of concern. An HI<1 indicates that toxic noncarcinogenic effects from all contaminants are unlikely. An HI > 1 indicates that site-related exposures may present a risk to human health.

To estimate the noncancer hazard quotient for the SA OU, the maximum exposure estimate was divided by the noncancer RSL concentration. Because perchlorate is the only constituent that exceeded a noncancer RSL, the HQ and HI are equal.

As shown in Table 5, the site-specific HIs of 5 (Intermediate Aquifer) and 11 (Regional Aquifer) exceed 1, indicating potential health impacts from exposure to contaminated groundwater at the Site.

Table 5. Risk Characterization Summary – Noncarcinogens
B.F. Goodrich Site - Source Area OU ROD

Chemical of Concern	Regional Screening Level (µg/L)	Primary Target Organ	Source of Toxicity Information	Non-Carcinogenic Hazard Quotient - Exposure to Intermediate Aquifer Groundwater	Non-Carcinogenic Hazard Quotient - Exposure to Regional Aquifer Groundwater
carbon tetrachloride	24	liver	IRIS	0.024	NA
chloroform	130	liver	IRIS	0.002	0.027
perchlorate	26	thyroid	IRIS	5	11
				TOTAL HI = 5	**TOTAL HI = 11**

Notes:
NA = not applicable

2.6.5 Uncertainties

In accordance with EPA guidance for a baseline human health risk assessment, it is assumed that drinking water regulations that prohibit or limit the consumption of contaminated water are not enforced. This assumption is likely to lead to an overestimation of actual exposure and associated risks and hazards. In addition, no functioning groundwater extraction wells are known to currently exist in the Intermediate Aquifer (but there is no prohibition against their installation).

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment, and from actual or threatened releases of pollutants or contaminants from this Site which may present an imminent and substantial endangerment to public health or welfare.

2.6.6 Summary of Ecological Risk Assessment

This interim action addresses risks to human health that could result from human consumption and use of contaminated groundwater. Because there is no known exposure pathway in which ecological receptors could be exposed to contaminated groundwater, an ecological risk assessment was not completed as part of this interim action.

EPA will evaluate the potential for construction-related impacts on ecological receptors, if any, when tentative locations are selected for the construction of the groundwater wells, water treatment facilities, pipelines, and other components of the remedy. Tentative decisions are expected early in the remedial design phase. Land use in the area where the remedy is likely to be constructed is primarily industrial, commercial, and residential, with limited open space.

2.7 Remedial Action Objectives

The RAOs for the Source Area OU of the B.F. Goodrich Site are to:

- Protect water supply wells and groundwater resources by limiting the spread of contaminated groundwater from the 160-acre area.
- Remove the contaminants from the groundwater.

As noted above, the groundwater at the Site is an important source of drinking water. Limiting the spread of contaminated groundwater should reduce contaminant mass loading to downgradient areas, reducing human health risk by reducing the likelihood and/or magnitude of exposure.

The RAOs do not address contaminated soil at the Site or contaminated groundwater downgradient of the SA OU and do not specify *in situ* cleanup goals for the contaminated groundwater (e.g., allowable TCE or perchlorate concentrations in the aquifer). Additional actions may be needed to address contaminated soil, determine appropriate *in situ* cleanup goals, and/or address downgradient areas of groundwater contamination.

2.8 Description of Remedial Alternatives

EPA has evaluated how well each of four action alternatives, and a no-action alternative, satisfies the RAOs and other requirements.

2.8.1 Description of Remedial Alternative Components

All of the action alternatives include groundwater extraction wells, water treatment systems, conveyance systems, and groundwater monitoring wells. The principal differences between the remedial alternatives are in their extraction and treatment capacity (and the resulting difference in their capability to achieve the RAOs during extended wet periods), the assumed use of the groundwater after treatment, and the water treatment technology used to remove perchlorate from the groundwater.

2.8.2 Common Elements and Distinguishing Features of Each Remedial Alternative

The five remedial alternatives are labeled: Alternative 1, Alternative 2a, Alternative 2b, Alternative 3, and the No-Action Alternative. The No-Action Alternative does not include active remediation or monitoring. As summarized in Table 6 and illustrated in Figure 2, the four action alternatives are groundwater pump-and treat systems consisting of five key components.

- **Extraction of Contaminated Groundwater:** Each of the four action alternatives assumes that contaminated groundwater is pumped from the Regional Aquifer at or near the downgradient end of the Intermediate Aquifer, about one and one half miles to the southeast of the 160-acre area. EPA also considered the cost, effectiveness, and feasibility of extracting contaminated groundwater closer to the 160-acre area, but concluded that it was likely to be more expensive, less effective, and of uncertain feasibility. The four action alternatives assume that groundwater would be pumped from two wells designed to intercept and limit the spread (in other words, to provide hydraulic control) of contaminated groundwater from the targeted area into downgradient portions of the Regional Aquifer (also known as hydraulic containment or hydraulic capture). The alternatives differ in their extraction and treatment capacity and may differ in their capability to achieve the RAOs during extended wet periods, as described below and in more detail in the January 2010 RI/FS Report.

- **Treatment of the Groundwater to Remove Contaminants:** Each of the four action alternatives assumes the use of a water treatment technology known as LGAC to remove TCE and other VOCs from the groundwater, the same treatment goals for the VOCs, and disinfection of the water after contaminant removal. The alternatives assume the same treatment goal for perchlorate but differ in the technology used to remove perchlorate from the groundwater, as described below. After use, spent granular-activated carbon and other wastes would be sent to an EPA-approved facility for treatment or disposal. EPA also evaluated air stripping and advanced oxidation, two alternative VOC removal technologies.

- **Conveyance Systems to Transport the Groundwater:** Each of the four action alternatives assumes the construction of pipelines and pumps to convey water from the extraction wells to the treatment plant and from the treatment plant to the delivery

location. The alternatives differ in the length of pipeline and amount of pumping needed to lift water from the treatment plant to the delivery location.

- **Use of the Groundwater after Removal of the Contaminants:** The alternatives differ in the assumed use of the groundwater after the contaminants are removed. The two possible uses are delivery to a local water utility for distribution to residents and businesses, and replenishment of the aquifer by reinjection.
- **Groundwater Monitoring:** Each of the four alternatives assumes the construction of at least eight new small-diameter groundwater monitoring wells, called piezometers, periodic monitoring of the new piezometers and existing groundwater monitoring wells, and analysis of monitoring data to evaluate the performance of the project and optimize its operation.

Table 6. Major Components of the Remedial Alternatives
B.F. Goodrich Site - Source Area OU ROD

Remedial Alternative	Groundwater Extraction Wells	LGAC or other Groundwater Treatment Technology (VOCs)	Groundwater Treatment Technology (perchlorate)	Extraction and Treatment Capacity	Pipelines and Pumps (i.e., conveyance systems)	Use of Treated Water	Groundwater Monitoring Program
No-Action	-	-	-	-	-	-	-
1	✓	✓	Ion Exchange	1,650 gpm	✓	Drinking water	✓
2a	✓	✓	Ion Exchange	3,200 gpm	✓	Drinking water	✓
2b	✓	✓	Biological Treatment	3,200 gpm	✓	Reinjection/ Aquifer replenish-ment	✓
3	✓	✓	Ion Exchange	5,000 gpm	✓	Drinking water	✓

The No-Action Alternative

The No-Action Alternative does not require active remediation or monitoring. It has no direct cost. It is included to provide a baseline for comparison to the other remedial alternatives.

Alternative 1 – Pump and Treat 1,500 to 1,650 gpm of Contaminated Groundwater and Use the Treated Water as Drinking Water Supply (Present Value Estimate = $24.2 million)

Alternative 1 consists of two groundwater extraction wells, an LGAC water treatment system, pipelines and booster pumps, and a groundwater monitoring program. Figure 13 shows the tentative extraction and treatment locations. Alternatives 2a, 2b, and 3 include these same elements.

Alternative 1 requires the construction of wells, water treatment systems, and pipelines capable of extracting and treating up to 1,650 gpm of contaminated groundwater. It assumes that extraction and treatment at a rate of 1,500 gpm rate would be adequate to satisfy the RAOs during most groundwater conditions. The 1,500 gpm extraction rate is based on particle tracking simulations of groundwater and contaminant movement using a computerized site-specific numeric groundwater flow model. During extended wet periods, when above-average rainfall causes significant increases in groundwater levels and groundwater hydraulic gradients in the Regional Aquifer, the extraction rate would increase up to the 1,650 gpm capacity of the system. Extended wet periods have occurred every 5 years on average over the past 50 years. If extraction occurred at 1,500 gpm 80 percent of the time and at 1,650 gpm 20 percent of the time, the average extraction and treatment rate would be 1,530 gpm.

Alternative 1 assumes that the groundwater is used as drinking water supply after the contaminants are removed. Alternatives 2a and 3 include the same assumption. Alternative 1 assumes that the water would be delivered to WVWD, which would distribute the water to its residential and business customers. WVWD has large distribution facilities (such as, pipelines and tanks) relatively close to the assumed treatment plant location.

Alternative 1 assumes the use of ion exchange as the perchlorate removal technology. Alternatives 2a and 3 include the same assumption. The treatment goals for TCE, carbon tetrachloride, and perchlorate in the extracted groundwater are 5.0, 0.5, and 6 µg/L, respectively. In practice, the water treatment technologies used to remove the COCs are expected to reduce the concentration of most of the COCs to levels substantially below MCLs. These treatment goals also apply to Alternatives 2a, 2b, and 3.

Alternative 1 (and Alternatives 2a, 2b, and 3) would result in the generation of treatment residuals (primarily spent carbon and/or resin), which would be treated or disposed offsite.

Estimated capital, annual O&M, and total present value costs are summarized in Table 7. Each of the four action alternatives is expected to take from one to two years to construct, and to operate for a period of several years to decades.

Table 7. Remedial Alternative Cost Estimates
B.F. Goodrich Site - Source Area OU ROD

Alternative	Capital Cost	Annual O&M Cost[1]	Total NPV[2] - 15 years O&M	Total NPV[2] - 30 years O&M
1	$ 9,600,000	$1,200,000	$20,300,000	$24,200,000
2a	$13,100,000	$1,300,000	$25,000,000	$29,300,000
2b	$21,800,000	$1,500,000	$35,600,000	$40,500,000
3	$18,300,000	$1,500,000	$31,900,000	$36,800,000

Notes:
[1]Annual O&M cost estimates for Alternatives 1, 2a, and 3 assume that the water utilities receiving the treated groundwater reimburse the operator of the remedy at a rate of $75/acre-foot to offset the utilities avoided costs of producing the water. The actual rate may differ.
[2]The Total NPV is the sum of the Capital Cost and the net present value of future O&M costs, assuming a 7 percent discount rate.

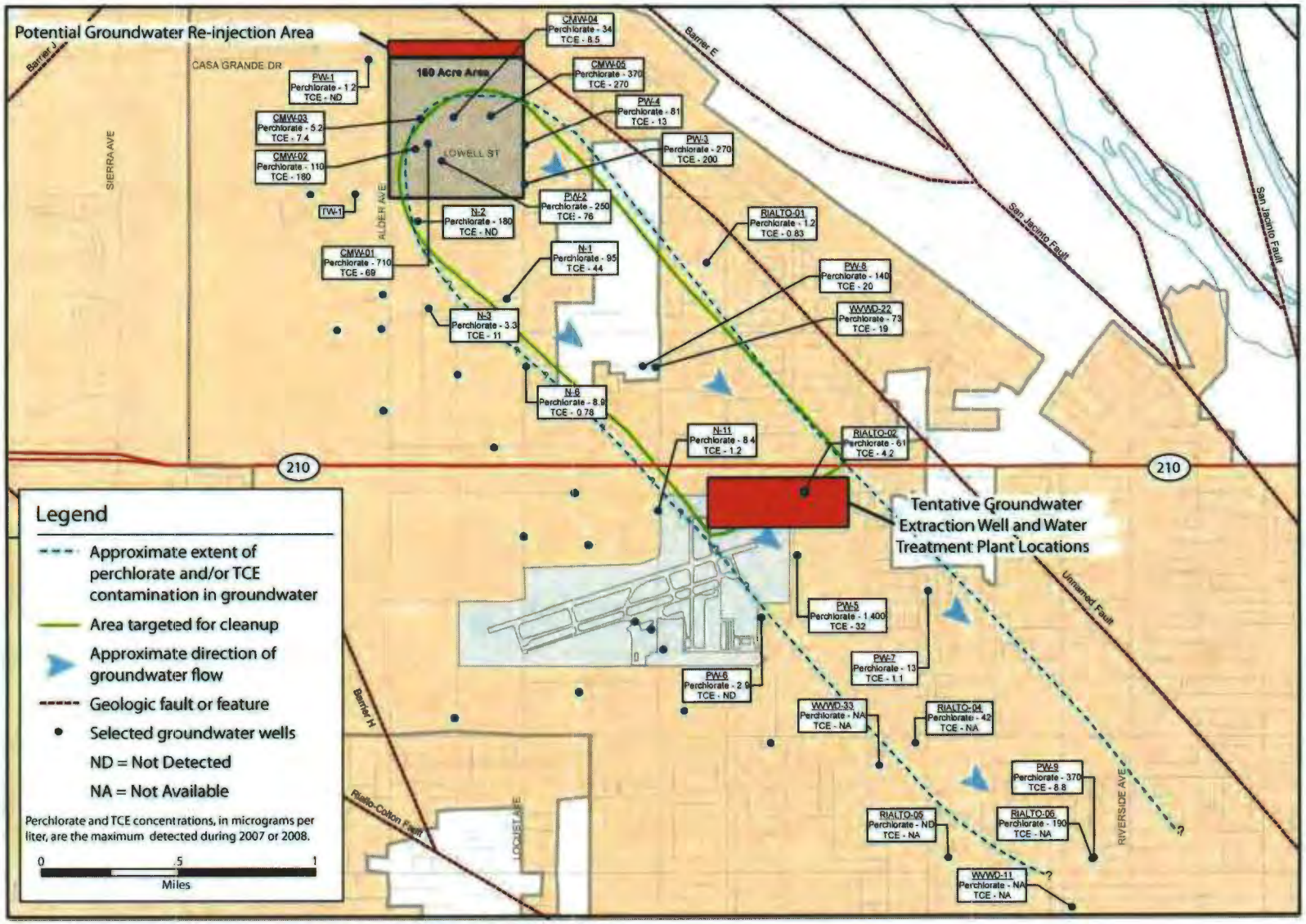

Figure 13. Approximate Extraction, Treatment, and Reinjection Locations

Alternative 2a – Pump and Treat 1,500 to 3,200 gpm of Contaminated Groundwater and Use the Treated Water as Drinking Water Supply (Present Value Estimate = $29.3 million)

Alternative 2a consists of two groundwater extraction wells, a LGAC water treatment system, pipelines and pumps, and a groundwater monitoring program (as does Alternative 1). Alternative 2a includes almost double the extraction and treatment capacity of Alternative 1 (3,200 gpm in Alternative 2a compared to 1,650 gpm in Alternative 1). It is assumed that groundwater would be extracted and treated at a rate of 1,500 gpm most of the time, and that higher extraction rates would be needed only during extended wet periods. During these periods, extraction could increase up to the maximum extraction rate of 3,200 gpm. The average flow rate would increase only modestly above that in Alternative 1 because periods requiring higher pumping rates are expected to be infrequent. If extraction occurred at 1,500 gpm 80 percent of the time and at 3,200 gpm 20 percent of the time, the average extraction and treatment rate would be 1,840 gpm.

Alternative 2a assumes that the groundwater is used as drinking water supply after the contaminants are removed, and that ion exchange is used as the perchlorate removal technology, as do Alternatives 1 and 3. It is assumed that the groundwater is distributed by WVWD.

Alternative 2b – Pump and Treat 1,500 to 3,200 gpm of Contaminated Groundwater and Reinject the Treated Groundwater to Replenish the Aquifer (Present Value Estimate = $40.5 million)

Alternative 2b is the same as Alternative 2a except that it assumes: (1) a biological treatment process for removal of perchlorate from the contaminated groundwater (rather than ion exchange); and (2) reinjection of the treated water to replenish the Regional Aquifer (rather than direct use as drinking water supply). Potential reinjection locations are shown in Figure 13.

Alternative 2b assumes that aquifer replenishment would require the construction of two deep injection wells located along the northern boundary of the 160-acre area, installation of more than three miles of pipeline to convey the treated water to the injection wells, and more pumping (compared to Alternative 2a) to move the treated water from the treatment plant to the delivery location.

Alternative 3 – Pump and Treat 1,500 to 5,000 gpm of Contaminated Groundwater and Use the Treated Water as Drinking Water Supply (Present Value Estimate = $36.8 million)

Alternative 3 assumes two groundwater extraction wells, a LGAC water treatment system, pipelines and pumps, and a groundwater monitoring program (as do Alternatives 1 and 2).

Alternative 3 includes the construction of a much larger groundwater extraction and treatment system than Alternatives 1, 2a, or 2b. It would operate at a rate similar to the other alternatives most of the time (approximately 1,500 gpm), but would have additional capacity (up to 5,000 gpm) to operate at higher rates during extended wet periods. It assumes triple the treatment capacity of Alternative 1 (5,000 gpm in Alternative 3 compared to 1,650 gpm in Alternative 1). If extraction occurred at the maximum 5,000 gpm rate 20 percent of the time, the average rate would be 2,200 gpm.

Alternative 3 assumes that the groundwater is used as drinking water supply after the contaminants are removed, and the use of ion exchange as the perchlorate removal technology,

as do Alternatives 1 and 2a. Because of the higher extraction and treatment rate, it is assumed that pipelines must be built to convey the treated groundwater to WVWD and to FWC.

Key ARARs associated with the action alternatives are summarized in Table 8.

Table 8. Key Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

ARAR	Importance
Federal Safe Drinking Water Act (SDWA), 42 U.S.C. 300 et seq., National Primary Drinking Water Standards, including 40 CFR 141.61 and 40 CFR 141.62	Establish MCLs for TCE (5 µg/L), perchlorate (6 µg/L), carbon tetrachloride (0.5 µg/L), and other COCs in the treated groundwater.
State of California Domestic Water Quality and Monitoring Regulations, California Safe Drinking Water Standards (MCLs), 22 CCR § 64431, and § 64444	
Clean Air Act, South Coast Air Quality Management District (SCAQMD), SCAQMD Regulation XIII, comprising Rules 1301 through 1313, SCAQMD Rule 1401, SCAQMD Rule 1401.1, and SCAQMD Rules 401 through 403	Limits toxic air emissions if air stripping is used for VOC removal.
California Porter-Cologne Water Quality Act, California Water Code 13240 Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin, Chapters 2(Plans and Policies), 3(Beneficial Uses), and 4 (Water Quality Objectives)	Provides standards used to determine discharge limits if treated groundwater is reinjected or temporarily discharged to surface water.

2.8.3 Expected Outcome of Each Alternative

Alternative 1 – Pump and Treat 1,500 to 1,650 gpm of Contaminated Groundwater and Use Treated Water as Drinking Water Supply

Alternative 1 is expected to satisfy the RAOs during most groundwater conditions. During extended wet periods, however, when above-average rainfall in the region causes significant increases in groundwater hydraulic gradients in the Regional Aquifer, the maximum extraction rate (1,650 gpm) is unlikely to be adequate. This limitation would potentially reduce the alternative's effectiveness in preventing the spread of contaminated groundwater.

Alternative 2a – Pump and Treat 1,500 to 3,200 gpm of Contaminated Groundwater and Use Treated Water as Drinking Water Supply

Alternative 2a would provide hydraulic control of the targeted area of groundwater contamination over a wider range of conditions than Alternative 1. Based on an evaluation of the magnitude and duration of periods of above-average rainfall over the last 50 years, and other factors affecting hydraulic gradients, Alternative 2a should achieve RAOs during all expected groundwater conditions. There is some uncertainty because the performance of the remedy would depend on future rainfall patterns and pumping rates at other wells near the Site, but the groundwater monitoring program that would be a part of the alternative would allow EPA to evaluate whether the remedy is achieving its hydraulic control objective and modify the project if needed. Modifications could include adjusting extraction rates, modifying the extraction wells, or installing new wells.

Alternative 2b – Pump and Treat 1,500 to 3,200 gpm of Contaminated Groundwater and Reinject the Treated Groundwater to Replenish the Aquifer

The expected outcome of Alternative 2b is the same as for Alternative 2a.

Alternative 3 – Pump and Treat 1,500 to 5,000 gpm of Contaminated Groundwater and Use Treated Water as Drinking Water Supply

The additional extraction and treatment capacity assumed in Alternative 3 would provide a greater level of confidence that the project would provide complete hydraulic control during extended wet periods, but the outcome is expected to be similar to Alternatives 2a and 2b.

None of the remedial alternatives include restoration of the aquifer as a remedial objective (i.e., reducing perchlorate and TCE levels in the aquifer to a level that allows unrestricted use of the groundwater). A decision on whether restoration is feasible will be made in a subsequent decision document.

2.9 Summary of Comparative Analysis of Alternatives

The following sections summarize the comparative analysis of alternatives presented in the detailed analysis section of the January 2010 RI/FS Report. A separate section addresses each of the nine remedy selection criteria.

2.9.1 Overall Protection of Human Health and the Environment

The Overall Protection of Human Health and the Environment criterion addresses whether or not an alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls, and/or institutional controls.

The evaluation of Overall Protection of Human Health and Environment is based largely on the long-term effectiveness criterion. The No-Action Alternative and Alternative 1 are not considered protective. Alternatives 2a, 2b, and 3 are considered protective. None of the remedial actions would exacerbate site conditions.

Limitations of the No-Action Alternative include the increased potential for human exposure to contaminated groundwater; the increased likelihood that concentrations of site-related COCs will increase at active water supply wells downgradient of the 160-acre area; the increased cost and difficulty of operating existing water treatment facilities if contaminant concentrations increase; and the increased cost, difficulty, and time required for control and restoration of the contaminated portions of the aquifer.

Alternatives 1 through 3 would reduce short- and long-term risks to human health and the environment by limiting the spread of contaminated groundwater from the highly contaminated source areas at the 160-acre area into less-contaminated areas and depths. That would reduce impacts on downgradient water supply wells and protect future uses of less-contaminated and uncontaminated portions of the aquifer. Alternative 2 would result in higher rates of groundwater extraction and more robust hydraulic control than Alternative 1, and Alternative 3 would include additional groundwater extraction capacity and potentially more robust control

compared to Alternatives 2a and 2b, although the difference in hydraulic control, if any, is likely to be minimal.

Alternatives 1 through 3 would reduce the toxicity, mobility, and volume of the contaminants (or contaminated groundwater) and remove significant contaminant mass from the aquifer. The VOC and perchlorate treatment technologies would be effective in meeting federal and state drinking water standards. Alternatives 1, 2a, and 3 also offer the benefit of making available a clean water supply source to one or more water utilities whose wells are currently affected by the contamination and are further threatened by continued contaminant migration.

The negative impacts associated with the alternatives include the disruption that would result from installation of pipelines and other components of the remedy, and the impacts of handling and disposing of treatment residuals (e.g., spent carbon, spent resin, and/or waste biomass from biological treatment).

2.9.2 Compliance with Applicable or Relevant and Appropriate Requirements

Section 121(d) of CERCLA and NCP § 300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites attain legally applicable or relevant and appropriate federal and state requirements, standards, criteria, and limitations which are collectively referred to as ARARs, unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental 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, are more stringent than federal requirements, and are promulgated and uniformly applied may be applicable.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive 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, are more stringent than federal requirements, and are promulgated and uniformly applied, may be relevant and appropriate.

The Compliance with ARARs criterion addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of federal and state environmental statutes.

All of the Alternatives, except the No-Action Alternative, have common ARARs associated with the construction and operation of a groundwater pump and treat system. Most of the ARARs are associated with the use of treated groundwater, and management and disposal of treatment residuals.

Acquisition of permits would not be necessary for onsite activities.

All of the alternatives will attain their respective federal and state ARARs, except as described in Section 2.12.2.

2.9.3 Long-Term Effectiveness

Long-term effectiveness and permanence refers to residual risk, and the ability of a remedy to maintain reliable protection of human health and the environment over time, once the RAOs are met. Residual risk can result from exposure to untreated waste or treatment residuals. The magnitude of the risk depends on the nature and quantity of the wastes and the adequacy and reliability of controls, if any, that are used to manage untreated waste and treatment residuals. For this interim remedy, untreated waste refers to contaminated groundwater not removed from the aquifer. Treatment residuals may include spent carbon, spent resin, and waste biomass from biological treatment.

The performance of the alternatives in relation to this criterion has been evaluated primarily by estimating the extent to which each alternative prevents the migration of contaminated groundwater into clean and less-contaminated areas. The evaluation also considers the relative magnitude of the treatment residuals.

The No-Action Alternative, in which no active remediation or monitoring occurs, is ranked low in relation to the Long-Term Effectiveness and Permanence criterion. If no action is taken, contaminated groundwater will continue to spread, increasing the likelihood of future increases in contaminant concentrations in downgradient portions of the aquifer, increasing risk by increasing the likelihood and/or magnitude of exposure, and increasing the eventual cost, difficulty, and time required for restoration of the aquifer.

In contrast to the No-Action Alternative, the four action alternatives would be relatively effective in meeting the RAOs of this interim remedy. All four action alternatives are expected to achieve RAOs during most groundwater conditions, reducing the short- and long-term risks to human health and the environment by inhibiting downgradient migration of contamination and removing substantial contaminant mass. The remedial alternatives would:

- Minimize increases in the extent and levels of contamination, decreasing the potential for human exposure
- Potentially reduce the need for water utilities with active downgradient water supply wells to install new water treatment systems
- Reduce the cost and difficulty of operating existing treatment facilities by preventing highly contaminated groundwater from reaching these systems
- Reduce the eventual cost, difficulty, and time required for hydraulic control and restoration of the aquifer

The action alternatives are expected to differ in effectiveness during extended wet periods that significantly increase groundwater levels and hydraulic gradients in the Regional Aquifer. The evaluation of long-term effectiveness is based primarily on computer simulations of groundwater flow conducted to estimate the extent to which extraction at the specified rates and locations would intercept contaminated groundwater moving from the targeted area. The computer model and the results of the computer simulations are described in the January 2010 RI/FS Report.

Alternative 1 may not be fully effective during extended wet periods, potentially limiting the alternative's effectiveness in preventing the spread of contaminated groundwater. Alternative 1 is ranked moderate in relation to the Long-Term Effectiveness and Permanence criterion.

Alternatives 2a and 2b are likely to achieve RAOs during all expected groundwater conditions. There is some uncertainty because the performance of these alternatives would depend on future rainfall patterns and pumping rates at non-remedy wells at or near the Site. Alternatives 2a and 2b are ranked high in relation to the Long-Term Effectiveness and Permanence criterion.

Alternative 3 is expected to achieve RAOs with a high level of certainty during all expected groundwater conditions and would have the capacity to maintain hydraulic control during more extreme hydraulic conditions. Alternative 3 is also ranked high in relation to the Long-Term Effectiveness and Permanence criterion.

The alternatives would differ in the contaminant mass removed because of the varying extraction and treatment rates of the alternatives, as described in the Reduction of Toxicity, Mobility, or Volume through Treatment section below.

Also considered in relation to this evaluation criterion is the health risk resulting from treatment residuals. In Alternatives 1 through 3, if LGAC is used for VOC treatment, the spent carbon would be transported offsite for regeneration or disposal. If air stripping with vapor-phase granular-activated carbon (VGAC) off-gas controls is used, residual risk would result from air emissions in addition to the handling and disposal of spent carbon if used for off-gas treatment. Off-gas treatment would be designed to meet air emissions requirements and limit the incremental risk from air emissions to acceptable levels. Compliance with RCRA and Department of Transportation regulations would result in minimal risks being associated with spent carbon and spent resin treatment residuals. The magnitude of the residual risks from treatment residuals for Alternatives 2 and 3 would be slightly higher than for Alternative 1 because the higher average extraction rates would generate slightly more waste.

Because this remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted within five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment. Because this is an interim action ROD, review of this Site and remedy will be ongoing as EPA develops additional remedial alternatives for the Site.

2.9.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

Alternatives 1 through 3 all satisfy the statutory preference for treatment and would employ treatment technologies that would reduce the volume of contaminants by inhibiting contaminant migration, and reduce the toxicity and volume of contaminants (or contaminated groundwater) by reducing contaminant concentrations to low or non-detectable levels in groundwater pumped to the surface for treatment.

The ion exchange and biological treatment processes for perchlorate removal, and LGAC for VOC removal, would permanently remove the contaminants from the extracted groundwater, greatly reducing mobility. Air stripping and advanced oxidation technologies, the alternative

VOC removal technologies, would also permanently remove the contaminants from the extracted groundwater.

All four technologies are partially or fully destructive technologies in that most or all of the contaminants are ultimately sequestered or converted to non-toxic products. With LGAC, the contaminants are typically destroyed when the carbon is reactivated. With air stripping, a majority of the VOCs are likely to be removed by an off-gas control process. If carbon is used, the contaminants are typically destroyed when the carbon is reactivated. With advanced oxidation, most of the VOCs are destroyed by the oxidation process. The biological process considered for perchlorate removal in Alternative 2b is also a destructive technology. The use of disposable resin for perchlorate treatment may also result in permanent destruction of the perchlorate if the resin is incinerated.

There would be minor differences in toxicity, mobility, and volume reduction in proportion to the average extraction and treatment rate of the alternative (i.e., slightly greater reductions in Alternatives 2a and 2b than in Alternative 1, and possibly a slightly greater reduction in Alternative 3 than in Alternatives 2a and 2b). Alternative 1 would remove an estimated 1,600 pounds and 15,800 pounds of TCE and perchlorate, respectively, over 30 years. Alternatives 2a and 2b would remove an estimated 1,900 pounds and 19,300 pounds of TCE and perchlorate, respectively, and Alternative 3 would remove an estimated 2,300 pounds and 23,100 pounds of TCE and perchlorate, respectively. The mass removal estimates are based on the estimated average groundwater extraction rates of 1,530, 1,840, 1,840, and 2,200 gpm for Alternatives 1, 2a, 2b, and 3, respectively. The mass removal rate for Alternative 3 is likely to be less than estimated, however, because the average groundwater extraction rate is likely to be less than 2,200 gpm. The 2,200 gpm estimate assumes that Alternative 3 operates at its 5,000 gpm capacity 20 percent of the time, but extraction rates above 3,200 gpm (the capacity of Alternative 2) are expected to be needed infrequently, if at all.

2.9.5 Short-Term Effectiveness

Short-term effectiveness addresses adverse impacts that may be posed to workers, the community, and the environment during construction of the remedy.

All four action alternatives are assigned a high ranking for short-term effectiveness. None of the alternatives pose unmitigable risks to the community during construction, nor do any of the alternatives pose unmitigable risks to workers beyond typical hazards associated with large construction projects.

It is expected that Alternatives 1 through 3 would require one to two years to construct using similar construction methods. Noise and dust abatement during construction, and onsite treatment or offsite disposal of the contaminated drill cuttings and purge water, would protect the community during construction.

There may be minor differences between the alternatives in the time required for construction. Alternative 2b (and, to a lesser extent, Alternative 3) may take longer to construct than Alternatives 1 and 2a due to the longer pipelines needed to convey water from the treatment plant.

2.9.6 Implementability

Implementability addresses the technical and administrative feasibility of a remedy during design, construction, and operation. It also considers factors such as the availability of services and materials, administrative feasibility, and coordination with other governmental entities.

None of the alternatives are assigned a high ranking for the implementability criterion (see Table 9), reflecting the need to acquire land or arrange access for the construction of extraction wells, treatment facilities, and conveyance facilities, other difficulties associated with a construction project in a developed area, and agreements with water utilities needed to carry out Alternatives 1, 2a, and 3.

Implementation of Alternatives 1, 2a, and 3 would require agreements with water utilities to distribute the treated groundwater generated by the remedy, specifying the amount of water each utility would accept; the treated water delivery location; and responsibility for operational, liability, financial, and regulatory requirements. Discussions with water rights holders may also be needed to address limitations on groundwater pumping resulting from the 1961 Rialto-Colton decree and the sustainability of current groundwater pumping rates in the RCB.

Alternative 1 is assigned a moderate to high ranking, reflecting the fact that it is the least complex alternative, probably requiring the fewest participating parties and fewest agreements. Alternatives 2a, 2b, and 3 are assigned a moderate ranking. Alternatives 2a, 2b, and 3 involve periodic distribution of larger volumes of water than Alternative 1 (up to 3,200 gpm for Alternatives 2a and 2b; up to 5,000 gpm for Alternative 3). In Alternatives 2a and 3, distributing this additional treated water may require arrangements with additional parties (particularly in Alternative 3). Alternative 2b would not require agreements to distribute water to local water utilities, but may pose additional obstacles due to the long pipeline needed to move water from the treatment plant to the injection wells.

Alternative 3 also requires larger conveyance systems and treatment facilities than Alternatives 1 and 2a, increasing the likelihood that difficulties would be encountered in acquiring property or arranging access, resulting in potential delays.

Implementation of each alternative would require the fabrication of treatment plant equipment, pumps, and conveyance pipe, but none of the required equipment or materials are out of the ordinary and all required services and materials are likely to be available, including qualified contractors for construction and operation of the technologies under consideration.

The extraction, treatment, and conveyance technologies included in Alternatives 1 through 3 are widely used and are generally known to be proven and reliable. The biological treatment process for perchlorate removal assumed in Alternative 2b is less widely used than ion exchange, although it has been demonstrated to be effective. No significant difficulties are expected because of the type of technologies employed.

All of the alternatives include an extensive monitoring program to evaluate remedy performance and to provide early warning of changes in contaminant concentrations or groundwater flow that may require modifications in extraction rates, well locations, or treatment methods to ensure attainment of RAOs and ARARs.

None of the remedial alternatives is expected to interfere with the implementation of future response actions at the Site.

Table 9. Evaluation and Comparison of Remedial Alternatives
B.F. Goodrich Site - Source Area OU ROD

Alternative	Protection of Human Health and Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, or Volume (TMV) Through Treatment	Short-term Effectiveness	Implementability	Capital Cost (O&M) [Present Value] *Million $*
No-Action Alternative	No protection to human health or the environment.	**NA**	**LOW** – Does not provide hydraulic control.	**NA**	**NA**	**NA**	**$0**
1. Pump and Treat 1,500 to 1,650 gpm; Use Treated Water as Drinking Water Supply	Reduces migration of contaminated groundwater. Overall protection lower than other alternatives because of incomplete hydraulic control during extended wet periods. Providing the treated water to a local water utility helps offset the impacts of the contamination on existing water supply wells.	**HIGH** – Would meet all ARARs.	**MODERATE** – Full control during low and intermediate water level conditions, but partial control during high water conditions. Minimal risk from treatment residuals.	**HIGH** – Meets preference for treatment and provides significant reduction of TMV.	**HIGH** – No unmitigable risks to the community, workers, or the environment during construction and implementation.	**MODERATE to HIGH** – Uses proven technologies, but many administrative issues to be resolved, primarily associated with potable use of the treated water.	**$9.6 ($1.2/year) [$24.2]**
2a. Pump and Treat 1,500 to 3,200 gpm; Use Treated Water as Drinking Water Supply	Similar to Alternative 1, but complete hydraulic control achieved during all expected groundwater conditions provides better overall protection of human health and the environment.	**HIGH** – Would meet all ARARs.	**HIGH** – Full control during all expected groundwater conditions. Minimal risk from treatment residuals.	**HIGH** – Meets preference for treatment and provides significant reduction of TMV.	**HIGH** – Similar to Alternative 1, but more pipeline construction and larger treatment plant.	**MODERATE** – Similar to Alternative No. 1, but higher peak flow rate may pose greater administrative challenge.	**$13.1 ($1.3/year) [$29.3]**
2b. Pump and Treat 1,500 to 3,200 gpm; Reinject Treated Groundwater to Replenish the Aquifer	Similar to Alternative 2a but at higher cost. Non-potable end use may improve implementability of the alternative, but eliminate the benefit the treated water provides to local water utilities.	**HIGH** – Would meet all ARARs.	**HIGH** – Similar to Alternative 2a, with minor difference in treatment residuals.	**HIGH** – Meets preference for treatment and provides significant reduction of TMV.	**HIGH** – Similar to Alternative No. 1, but more pipeline construction.	**MODERATE** – May be easier to implement than Alternative 2a, but significantly greater pipeline construction may pose greater administrative challenge.	**$21.8 ($1.5/year) [$40.5]**
3. Pump and Treat 1,500 to 5,000 gpm; Use Treated Water as Drinking Water Supply	Similar to Alternative 2a. Slightly higher level of confidence but at increased cost. Also likely to be more difficult to implement due to higher peak flow rates.	**HIGH** – Would meet all ARARs.	**HIGH** – Similar to Alternative 2a, but with higher level of confidence. Minimal risk from treatment residuals.	**HIGH** – Meets preference for treatment and provides significant reduction of TMV.	**HIGH** – Similar to Alternative 2a, but more pipeline construction and larger treatment plant.	**MODERATE** – Similar to Alternative No. 2a, but higher peak flow rate may pose greater administrative challenge.	**$18.3 ($1.5/year) [$36.8]**

Notes:
Costs are millions of dollars.
NA= Not Applicable.
NPV = Net Present Value (based on 30 years of O&M and a 7 percent discount rate).

2.9.7 Cost

The estimated Net Present Value (NPV) of the least expensive action alternative (Alternative 1) is $24.2 million. The estimated NPV of the most expensive alternative (Alternative 2b) is $40.5 million, primarily due to the high capital costs associated with the long pipeline from the treatment plant to the injection well locations, higher pumping costs, and the higher cost of biological treatment (compared to ion exchange). Alternatives 2a and 3 have estimated NPVs of $29.3 million and $36.8 million respectively. The NPV is a measure of the capital and operation and maintenance (O&M) costs over a period of 30 years. It is calculated as the sum of the capital and O&M costs, with O&M costs discounted to the present at a rate of seven percent per year.

No direct costs are associated with the No-Action Alternative. Costs are summarized in Table 7.

2.9.8 State Acceptance

The State has expressed its support for the selected remedy. In a letter dated September 28, 2010, the Executive Officer of the Regional Water Quality Control Board, Santa Ana Region (RWQCB), as lead agency for the State, concurred with EPA's selected remedy. The Executive Officer of the RWQCB, and the Acting Deputy Director of the California Department of Toxic Substances Control, clarified comments made in the September 28, 2010, letter in a second letter dated September 30, 2010.

2.9.9 Community Acceptance

During the public comment period, one commenter (the County of San Bernardino) expressed support for EPA's preferred alternative.

One commenter (WVWD) opposed the reinjection component of Alternative 2b. Three commenters (Goodrich Corporation, FWC, and Dinah L. Watson) expressed disapproval of EPA's proposed cleanup plan in whole or in part for differing reasons, implicitly supporting the No-Action Alternative.

2.10 Principal Threat Wastes

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a Site wherever practicable. The principal threat concept is applied to the characterization of source materials at a Superfund Site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material. Non-aqueous phase liquids (NAPLs) in groundwater may be a source material, and may be present at the Site, but their presence at the Site has not yet been established and NAPL is not being directly addressed by the SA OU.

2.11 Selected Remedy

EPA's selected remedy for the B.F. Goodrich Site Source Area OU includes the major elements of Alternative 2a, with added flexibility in the extraction, treatment, conveyance, and groundwater use components as described in detail below.

2.11.1 Summary of the Rationale for the Selected Remedy

Based on the information currently available, EPA has concluded that the selected remedy meets the threshold criteria and provides the best balance of trade-offs among the remedial alternatives.

The selected remedy is a groundwater pump and treat system intended to limit the movement of contaminated groundwater from the 160-acre source area during all expected future groundwater conditions, thereby satisfying the RAOs of protecting water supply wells and groundwater resources downgradient of the 160-acre area and removing contaminants from the groundwater. The selected remedy will result in permanent and significant reduction in the mobility of perchlorate, TCE, and other COCs in groundwater downgradient of the 160-Area Area, and a permanent and significant reduction in the volume of contaminated groundwater downgradient of the 160-Area Area. The selected remedy includes the installation of multiple new groundwater monitoring wells and piezometers and the monitoring of new and existing wells to optimize and evaluate remedy performance.

The most decisive considerations that affected the selection of the remedy were:

- the increased effectiveness and modest increase in cost of increasing the groundwater extraction and treatment capacity from 1,650 to 3,200 gpm (the assumed capacities in Alternatives 1 and 2a, respectively);
- the lower cost, similar level of effectiveness, and easier implementation of an extraction and treatment system having a capacity of 3,200 gpm rather than 5,000 gpm (the capacities in Alternatives 2a and Alternative 3, respectively);
- the expectation that the selected remedy will achieve RAOs during all expected groundwater conditions, and the ability to increase pumping or make other modifications to the remedy if the groundwater monitoring program indicates that the RAOs are not being achieved during all expected groundwater conditions; and
- the importance of making the treated groundwater available as a source of drinking water (rather than reinjection into the aquifer) and lower estimated cost if EPA succeeds in making arrangements for use of the treated water as drinking water supply.

One comment received during the public comment period supported EPA's preferred alternative. None of the other comments supported a particular remedial alternative (although several implicitly supported the No-Action Alternative). The State concurred with EPA's selected remedy in letters dated September 28, 2010 and September 30, 2010.

2.11.2 Description of the Selected Remedy

EPA's selected remedy for the Source Area OU of the B.F. Goodrich Site is a groundwater pump and treat system. The remedy is intended to intercept and provide hydraulic control of contaminated groundwater moving from the 160-acre source area, where most or all of the

contaminants entered the groundwater and the highest levels of groundwater contamination have been measured. The remedy includes the construction and operation of the following components, which are described in more detail in subsequent sections of this ROD.

- groundwater extraction wells located no more than 1,500 feet downgradient of the Intermediate and Regional Aquifer Target Area (defined below);
- water treatment systems to remove TCE and other VOCs from the extracted groundwater;
- water treatment systems to remove perchlorate from the extracted groundwater;
- pipelines and pumps to convey the contaminated groundwater from the extraction wells to the treatment plant;
- pipelines and pumps to convey the treated water from the treatment plant to one or more local water utilities for distribution to the utilities' customers as municipal water supply (or for aquifer replenishment via new groundwater reinjection wells if agreements cannot be reached with the water utilities in a reasonable period of time); and
- a groundwater monitoring program.

The targeted area of groundwater contamination encompasses portions of the Intermediate and Regional Aquifers:

- The *Intermediate Aquifer Target Area* is the portion of the aquifer within the footprint of and downgradient of the 160-acre area where COC concentrations in groundwater exceed chemical-specific ARARs. The upgradient boundary of the Target Area is near groundwater monitoring well CMW-3, the northernmost groundwater monitoring well on the 160-acre area where the concentrations of COCs have consistently exceeded chemical-specific ARARs. The downgradient boundary of the Target Area is where the Intermediate Aquifer is no longer present as a distinct aquifer. The downgradient boundary is in the vicinity of the 210 Freeway, approximately one and one-half miles to the southeast of the 160-acre area.
- The *Regional Aquifer Target Area* is the portion of the Regional Aquifer underlying the Intermediate Aquifer Target Area where the concentrations of the COCs in groundwater exceed chemical-specific ARARs. The upgradient boundary of the Regional Aquifer Target Area is at or upgradient of well WVWD-22.

The remedy must satisfy the performance criteria described in the following section.

2.11.2.1 Performance Criteria

The performance criteria for the selected remedy are as follows: The remedial action shall provide sufficient hydraulic control to prevent the movement of groundwater from the Target Area into clean or less contaminated portions of the aquifers.

Compliance with the performance criterion shall be verified by demonstrating hydraulic control of the targeted area and reducing groundwater concentrations at compliance locations (specified below) over time. Compliance shall initially be determined by demonstrating hydraulic control. After the remedy has operated for a period of time, expected to last several years, compliance

shall be determined by demonstrating continued hydraulic control and a decrease in COC concentrations in compliance wells over time.

To demonstrate hydraulic control, there must be evidence that the hydraulic capture zone created by the remedy encompasses the Intermediate Aquifer and Regional Aquifer Target areas during all anticipated flow conditions (e.g., by evaluating the flow paths of particles originating within the Target Area). "All anticipated flow conditions" refers to the groundwater flow velocities resulting from wet, average, and dry periods in the hydrologic cycle. The capture zone shall be estimated by measuring groundwater levels and using a groundwater flow model capable of particle tracking simulations or a similar approach. Hydraulic control shall occur shortly after startup of the remedy and be maintained thereafter. Implementation of the remedial action shall not result in adverse effects to water supply wells that are not part of the remedial action (e.g., significant increases in the concentrations of COCs or significant movement of contaminated groundwater toward non-remedy wells).

The compliance locations shall be two or more downgradient compliance monitoring wells located approximately 500 to 1,500 feet downgradient of the groundwater extraction wells operated as part of the remedy. Compliance well screens shall be designed to minimize the dilution of groundwater samples and be sufficient in number and adequately located to verify that groundwater moving from the Target Area is intercepted by the remedy extraction wells.

2.11.2.2 Detailed Description of the Selected Remedy

Groundwater Extraction

The remedy shall include the installation of one or more new groundwater extraction wells needed to achieve the performance criteria. An existing, inactive production well owned by the City of Rialto (Rialto-02) may be used as one of the remedy extraction wells if remedial design evaluations confirm that the well is properly located and suitably constructed. Figure 13 depicts the Rialto-02 well location and the area, to the northeast of the Rialto Municipal Airport in Rialto, California, where one or more new groundwater extraction wells may be located. Final decisions on the locations of the groundwater extraction wells shall be made during remedial design.

Based on preliminary computer modeling conducted during the RI/FS, a total extraction capacity of 3,200 gpm shall be needed to satisfy the performance criteria during all anticipated groundwater conditions. This target capacity may be modified during the remedial design process if EPA determines that more or less capacity is required to satisfy the performance criteria.

Based on groundwater flow and particle tracking modeling simulation completed as part of the RI/FS, the estimated long-term average pumping rate from the remedy extraction wells is 1,840 gpm and the estimated typical flow rate is 1,500 gpm. Each extraction well shall be equipped with a variable frequency drive (VFD) to allow operation over the anticipated range of extraction rates.

Groundwater Treatment

The extracted groundwater shall be treated using an ion exchange or biological treatment process to remove perchlorate. The perchlorate removal technology shall be selected during remedial design. Based on evaluations completed during the RI/FS, EPA expects that ion exchange will

be the least expensive, effective technology for perchlorate removal; however biological treatment has also been demonstrated as effective and implementable. If ion exchange is used, the type of resin to be used in the ion exchange process shall be selected during the remedial design phase.

The groundwater shall also be treated to remove TCE and other VOCs. The VOC treatment shall be LGAC, air stripping, and/or an advanced oxidation process. The VOC removal technology shall be selected during remedial design. The LGAC system, if used, shall be equipped with backwash facilities to remove carbon fines after carbon change-out. If air stripping is used, requirements of the South Coast Air Quality Management District (SCAQMD) are potentially applicable and an off-gas treatment technology may be required for the air discharged from the air stripper. Off-gas treatment may be accomplished with VGAC or catalytic oxidation.

Any spent resin or carbon requiring disposal shall be sent to an EPA-approved disposal facility.

If the treated water is distributed to local water utilities as potable water supply (the assumed end use option for the treated water), the extracted water shall be treated to reduce COC concentrations below Federal and State MCLs. In practice, the water treatment technologies used to remove the COCs are expected to reduce the concentration of most COCs to levels substantially below MCLs.

Table 10. Cleanup Goals for Chemicals of Concern (COCs) in Extracted and Treated Groundwater
B.F. Goodrich Site - Source Area OU ROD

COC	Reporting Units	Federal MCL (µg/L)	California MCL (µg/L)	Cleanup Level	Basis for Cleanup Level
Carbon Tetrachloride	µg/L	5	0.5	0.5	California MCL
Chloroform (Trichloromethane)	µg/L	80[1]	80[1]	80[1]	Federal MCL
Methylene Chloride (Dichloromethane)	µg/L	5	5	5	Federal MCL
Perchlorate	µg/L	none	6	6	California MCL
Trichloroethene (TCE)	µg/L	5	5	5	Federal MCL

Notes:
[1]The values listed for chloroform are for the combined concentration of four trihalomethanes: chloroform, dibromochloromethane, bromodichloromethane, and bromoform.

If water is distributed to local water utilities as potable water supply, the water may need to be disinfected to CDPH standards prior to discharge to a local water utility's distribution system. If disinfection is necessary, a thorough evaluation of disinfection system requirements shall be performed during remedial design to select the disinfectant to be used and determine whether effluent storage tanks are required at the treatment plant to meet CDPH requirements for contact time (the concentration-time or CT requirement). If the treated water is reinjected into the aquifer, the need for disinfection or other secondary treatment shall be evaluated during remedial design.

The water treatment systems shall be designed to account for the expected operating range. The estimated typical operational rate is 1,500 gpm; the estimated peak rate is 3,200 gpm. The treatment plant location shall be selected during remedial design.

Treated Water End Use

The selected remedy includes a preference for use of the treated water by one or more local water utilities as municipal drinking supply. There are several local water utilities with infrastructure and water rights in the RCB that could potentially be recipients of treated water from the selected remedy, including WVWD, FWC, the City of Rialto, and the City of Colton. A final decision about which utilities, if any, will accept the treated water shall be made during remedial design based on cost, the ease or difficulty of reaching agreement with the utilities, and other factors. Agreement may be needed on the length of time the utilities will commit to accept treated water; improvements to existing facilities required for delivery of treated water; cost-sharing; treated water quality and disinfection requirements; delivery locations and pressures, flow rates and other operational considerations; and water rights and other legal and financial considerations.

It is anticipated that negotiating the required agreement(s) will take considerable time and effort. If the required agreement(s) cannot be reached in a reasonable period of time, EPA may implement an alternate end use option. The alternate end use option is reinjection of the treated water into the Regional Aquifer upgradient of the 160-acre area as described in Alternative 2b. If the selected end use is reinjection, additional remedial design evaluations shall be conducted to select the appropriate number and location of injection wells.

Conveyance Systems

The specific conveyance systems required for the selected remedy shall be determined during remedial design after the extraction well, treatment plant, and treated water delivery locations are finalized. This section briefly summarizes the types of conveyance facilities assumed in Alternative 2a and in the remedy cost estimates. These assumptions are expected to be representative of the facilities required as part of the remedy.

In the RI/FS, it is assumed that the extracted groundwater will be conveyed from the extraction wells to the treatment system in 12- to 16-inch-diameter subsurface pipelines located in city streets. Extraction well pumps will be sized to provide sufficient head to lift the water from the aquifer and convey it to the treatment plant. In the RI/FS, the assumed pipeline routes from the extraction wells to the treatment plant were along West Highland Avenue, Easton Street, and Ayala Drive.

In the RI/FS, it was assumed that the treated water would be delivered from the treatment system to the WVWD potable water system through a subsurface 18-inch-diameter pipeline along Easton Street. Depending on the delivery location, a pump station may be required at the treatment plant to boost the treated water to the elevation necessary to match system pressure at the connection location. In the RI/FS, it was assumed that the connection to WVWD would occur at an existing 30-inch potable water line located in Cactus Avenue.

Groundwater Monitoring

Groundwater monitoring is a key component of the selected remedy and shall be carried out to demonstrate compliance with the performance criteria. In addition, groundwater monitoring

shall occur to provide early warning of changes in contaminant conditions upgradient of the groundwater extraction locations and changes in groundwater elevations that could affect hydraulic control or treatment system performance. Upgradient conditions that could affect system operations include increases or decreases in the lateral or vertical extent of contamination, increases or decreases in contaminant concentrations, or detection of new contaminants that could require extraction rate or treatment plant modifications. Changes in groundwater elevations can affect the extraction rates needed to provide hydraulic control.

For remedy monitoring, at least two nested piezometer pairs shall be installed near each extraction well to provide water level data for use in evaluating hydraulic control. The piezometers shall provide for the measurement of hydraulic head at multiple locations and multiple depth intervals to help define the size of the extraction well capture zone. The estimated completion depths for the new, nested piezometers are 450 and 650 feet.

As described in Section 2.11.2.1, compliance wells for monitoring chemical-specific ARARs shall be located no more than 1,500 feet downgradient of the extraction wells. Compliance monitoring wells shall be approximately 700 feet deep.

Existing monitoring wells may be used to help meet remedy monitoring objectives. Arrangements to use existing monitoring wells, and decisions on the number, location, and design of the new monitoring wells needed to satisfy groundwater monitoring objectives, shall be made during remedial design. Monitoring frequencies and analytes shall also be determined during remedial design. Estimated monitoring frequencies are semiannual or annual for both water level and water quality monitoring.

2.11.3 Summary of the Estimated Remedy Costs

Summaries of the estimated capital, O&M, and present value costs of the major components of the selected remedy are included in Tables 11a and 11b. Table 11a assumes that the treated groundwater is supplied for potable drinking water use; Table 11b assumes that the treated groundwater is reinjected to replenish the aquifer. The information in the tables is based on the best available information regarding the anticipated scope of the remedy. Changes in costs may occur as a result of new information and data collected during the remedial design phase. As is the practice at federal Superfund sites, these are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost.

Table 11a. Detailed Cost Estimate for the Selected Remedy – Drinking Water End Use
B.F. Goodrich Site – Source Area OU ROD

Capital Costs (Drinking Water End Use)			
Major System/Component	**Quantity**	**Unit Cost**	**Cost**
CONVEYANCE & WELL SYSTEM COSTS			
Water Pipelines			
10" Pipeline to Treatment Plant	100	$ 72	$ 7,000
12" Pipeline to Treatment Plant	3,100	$ 82	$ 253,000
18" Pipeline to West Valley Water District	3,600	$ 117	$ 422,000
Extraction Wells and Well Pumps/Well Heads			
New Extraction Well System	1	$ 618,579	$ 619,000
Piezometers (2 clusters per extraction well)	4	$ 100,000	$ 400,000
Extraction Well VFDs and PLC	2	$ 40,000	$ 80,000
Booster Pump Station			
Pump to WVWD Reservoir- 3,200 gpm	1	$ 186,294	$ 186,000
CONVEYANCE SYSTEM SUBTOTAL			***$ 1,967,000***
GROUNDWATER TREATMENT PLANT			
Untreated Water Tank			
Holding Tank- 10,000 gallon	1	$ 47,984	$ 48,000
Treatment Plant Feed Pump			
Feed Pump (3,200 gpm @280 feet of head)	2	$ 88,939	$ 178,000
Flow indicating totalizer	1	$ 4,000	$ 4,000
Bag Filter System			
Bag Filters- 1,650 gpm each	3	$ 20,403	$ 61,000
LGAC Adsorber System			
LGAC adsorber column pairs - 20,000 pounds, 10' Dia.	7	$ 177,674	$ 1,244,000
Flow indicating totalizer and Diff. Pressure Switch	14	$ 4,590	$ 64,000
Backwash System and Rinse Recovery- 30,000 gallons	1	$ 118,581	$ 119,000
Ion Exchange System			
Resin adsorber columns (3 pairs, 12' diameter)	3	$ 305,288	$ 916,000
Initial Resin Charge (6 vessels @ 350 cu ft)	2100	$ 333	$ 699,000

Table 11a. Detailed Cost Estimate for the Selected Remedy – Drinking Water End Use
B.F. Goodrich Site – Source Area OU ROD

Capital Costs (Drinking Water End Use)			
Major System/Component	**Quantity**	**Unit Cost**	**Cost**
Chlorination System			
Holding Tank, metering pumps, chlorine analyzer, mixer, etc.	Lump	$ 75,000	$ 75,000
TREATMENT PLANT Equipment *(Material Only)*			$ 3,408,000
Labor For Equipment Installation			$ 511,000
Sitework	2.5%		$ 98,000
Mechanical - Piping	15.0%		$ 588,000
I & C	5.0%		$ 196,000
Electrical	10.0%		$ 392,000
Common Facilities	Lump		$ 226,000
Building/Lab & Site Improvements	Lump		$ 101,000
Metals	5.0%		$ 196,000
TREATMENT PLANT SUBTOTAL			***$ 5,716,000***
Engineering- Design/Technical Support (8% of Construction)	8%		$ 615,000
Contractor Overhead, Profit, General Conditions, Mob/Demob	~23%		$ 1,858,000
Construction Management	5%		$ 477,000
Construction Contingency	25%		$ 2,505,000
TOTAL ESTIMATED CAPITAL COSTS			**$ 13,138,000**

Table 11a. Detailed Cost Estimate for the Selected Remedy – Drinking Water End Use
B.F. Goodrich Site – Source Area OU ROD

Annual O&M Costs (Drinking Water End Use)				
Equip. Name	**per Unit**	**Units**	**Unit Cost**	**Cost**
Electrical Power				
Extraction Wells to Treatment Plant (1,840 gpm)	1,999,682	kW-hr		
Treatment Plant Pumps and Miscellaneous Equipment	726,904	kW-hr		
Booster Pump Station	312,331	kW-hr		
Total	3,039,000	kW-hr	$ 0.12	$ 365,000
Carbon Make-up				
LGAC (240 pounds/day)	87,600	lb C	$ 0.80	$ 70,000
Chemicals/Materials				
Ion Exchange Resin	2,970	acre-feet	$ 145	$ 430,000
Chlorine, Filter Bags, LGAC Backwash Sludge Disposal				$ 23,000
Analytical				
Treatment Plant, Extraction and Monitoring Wells				$ 72,000
Labor				
Operating, Administrative and Management	5,930	hours	$19.50 to $42	$ 196,000
Subcontracts				
Monitoring Wells Sampling (Subcontract)	1	lump sum	$ 90,000	$ 90,000
Regulatory Monitoring Reports	1	lump sum	$ 25,000	$ 25,000
Parts				
2% of Treatment Plant Capital	2%			$ 114,000
OPERATIONS AND MAINTENANCE SUBTOTAL				**$ 1,385,000**
O&M Contingency	10%			$ 139,000
SUBTOTAL O&M BEFORE PURVEYOR REIMBURSEMENT				**$ 1,524,000**
Purveyor Reimbursement at $75 per acre-foot	2,970	acre-feet	$75	**$ 223,000**
ESTIMATED ANNUAL O&M COSTS				**$ 1,301,000**
NET PRESENT VALUE OF THE ESTIMATED O&M COSTS				**$ 16,144,000**
TOTAL ESTIMATED PRESENT WORTH FOR SELECTED REMEDY				**$ 29,282,000**

Table 11b. Detailed Cost Estimate for the Selected Remedy – Reinjection/Aquifer Replenishment End Use
B.F. Goodrich Site – Source Area OU ROD

Capital Costs (Aquifer Replenishment End Use)			
Major System/Component	**Quantity**	**Unit Cost**	**Cost**
CONVEYANCE & WELL SYSTEM COSTS			
Water Pipelines			
10" Pipeline to Treatment Plant	100	$ 72	$ 7,000
12" Pipeline to Treatment Plant	3,100	$ 82	$ 253,000
18" Pipeline to Injection Wells	17,600	$ 117	$ 2,061,000
Freeway Crossing	500	$ 535	$ 267,000
Extraction Wells and Well Pumps/Well Heads			
New Extraction Well System	1	$ 618,579	$ 619,000
Piezometers (2 clusters per extraction well)	4	$ 100,000	$ 400,000
Extraction Well VFDs and PLC	2	$ 40,000	$ 80,000
Injection Wells	2	$ 430,576	$ 861,000
Booster Pump Station			
Pump to Injection Wells	1	$ 288,899	$ 289,000
CONVEYANCE SYSTEM SUBTOTAL			**$ 4,837,000**
GROUNDWATER TREATMENT PLANT			
Untreated Water Tank			
Holding Tank- 10,000 gallon	1	$ 47,984	$ 48,000
Treatment Plant Feed Pump			
Feed Pump (3,200 gpm @280 feet of head)	2	$ 88,939	$ 178,000
Flow indicating totalizer	1	$ 4,000	$ 4,000
Bag Filter System			
Bag Filters- 1,650 gpm each	3	$ 20,403	$ 61,000
LGAC Adsorber System			
LGAC adsorber column pairs - 20,000 pounds, 10' Dia.	7	$ 177,674	$ 1,244,000
Flow indicating totalizer and Diff. Pressure Switch	14	$ 4,590	$ 64,000
Backwash System and Rinse Recovery- 30,000 gallons	1	$ 118,581	$ 119,000

Table 11b. Detailed Cost Estimate for the Selected Remedy – Reinjection/Aquifer Replenishment End Use
B.F. Goodrich Site – Source Area OU ROD

Capital Costs (Aquifer Replenishment End Use)			
Major System/Component	**Quantity**	**Unit Cost**	**Cost**
Ion Exchange System			
Resin adsorber columns (3 pairs, 12' diameter)	3	$ 305,288	$ 916,000
Initial Resin Charge (6 vessels @ 350 cu ft)	2100	$ 333	$ 699,000
Chlorination System			
Holding Tank, metering pumps, chlorine analyzer, mixer, etc.	Lump	$ 75,000	$ 75,000
TREATMENT PLANT Equipment *(Material Only)*			$ 3,408,000
Labor For Equipment Installation			$ 511,000
Sitework	2.5%		$ 98,000
Mechanical - Piping	15.0%		$ 588,000
I & C	5.0%		$ 196,000
Electrical	10.0%		$ 392,000
Common Facilities	Lump		$ 226,000
Building/Lab & Site Improvements	Lump		$ 101,000
Metals	5.0%		$ 196,000
TREATMENT PLANT SUBTOTAL			**$ 5,716,000**
Engineering- Design/Technical Support (8% of Construction)	8%		$ 844,000
Contractor Overhead, Profit, General Conditions, Mob/Demob	~23%		$ 2,552,000
Construction Management	5%		$ 655,000
Construction Contingency	25%		$ 3,440,000
TOTAL ESTIMATED CAPITAL COSTS			**$ 18,044,000**

Table 11b. Detailed Cost Estimate for the Selected Remedy – Reinjection/Aquifer Replenishment End Use
B.F. Goodrich Site – Source Area OU ROD

Annual O&M Costs (Aquifer Replenishment End Use)				
Equip. Name	**per Unit**	**Units**	**Unit Cost**	**Cost**
Electrical Power				
Extraction Wells to Treatment Plant (1,840 gpm)	1,999,682	kW-hr		
Treatment Plant Pumps and Miscellaneous Equipment	726,904	kW-hr		
Booster Pump Station	1,047,452	kW-hr		
Total	3,774,000	kW-hr	$ 0.12	$ 453,000
Carbon Make-up				
LGAC (240 pounds/day)	87,600	lb C	$ 0.80	$ 70,000
Chemicals/Materials				
Ion Exchange Resin	2,970	acre-feet	$ 145	$ 430,000
Chlorine, Filter Bags, LGAC Backwash Sludge Disposal				$ 23,000
Analytical				
Treatment Plant, Extraction and Monitoring Wells				$ 72,000
Labor				
Operating, Administrative and Management	5,930	Hours	$19.50 to $42	$ 196,000
Subcontracts				
Monitoring Wells Sampling (Subcontract)	1	lump sum	$ 90,000	$ 90,000
Regulatory Monitoring Reports	1	lump sum	$ 25,000	$ 25,000
Parts				
2% of Treatment Plant Capital	2%			$ 114,000
OPERATIONS AND MAINTENANCE SUBTOTAL				**$ 1,473,000**
O&M Contingency	10%			$ 147,000
SUBTOTAL O&M				**$ 1,620,000**
ESTIMATED ANNUAL O&M COSTS				**$ 1,620,000**
NET PRESENT VALUE OF THE ESTIMATED O&M COSTS				**$ 20,103,000**
TOTAL ESTIMATED PRESENT WORTH FOR THE SELECTED REMEDY				**$ 38,147,000**

Notes:
The Net Present Value of the Estimated O&M costs and the Total Estimated Present Worth for the Selected Remedy are based on a 7% discount rate and 30 years of O&M. Capital cost estimates are not discounted.
Assumed pipeline routes and treatment technologies may be refined during remedial design, affecting costs. Cost estimates are expected to be within a +50 to -30% accuracy range.

2.11.4 Expected Outcomes of Selected Remedy

The selected remedy will limit the movement of groundwater contaminated with high levels of VOCs and perchlorate from the 160-acre source area. This will reduce risk to human health, and help protect future uses of drinking water supply wells and groundwater resources downgradient of the 160-acre area. Although unrestricted use of the aquifer is not an objective of this remedy, the remedy will begin the process of restoring the contaminated aquifers by removing contaminants from the groundwater. The remedy will reduce the eventual cost, difficulty, and time required for restoration of the aquifer.

The remedy will start protecting downgradient areas shortly after startup and will continue to protect downgradient areas during the full range of expected future groundwater conditions.

Cleanup levels for removal of the primary COCs from the extracted groundwater are summarized on Table 10. As noted in Section 2.11.2.2, EPA will use the federal and state drinking water MCLs as the minimum cleanup levels for the treated groundwater. If the treated water is distributed to local water utilities as potable water supply (the assumed end use option for the treated water), the extracted water will be treated to lower levels as required by the CDPH. The treated groundwater from the remedy is expected to provide a reliable, long-term supply of clean water for municipal (e.g., drinking water) use by one or more local water utilities.

As noted in Section 2.3, one or more additional remedies are planned to address human health risks and protect existing and future beneficial uses of the aquifer affected or threatened by contaminated groundwater that has already moved past the area targeted by this remedy.

2.12 Statutory Determinations

This section provides a brief, site-specific description of how the selected remedy satisfies the statutory requirements of CERCLA §121 (as required by NCP §300.430(f)(5)(ii)), and explains the five-year review requirements for the selected remedy.

2.12.1 Protection of Human Health and the Environment

The selected remedy will reduce human health risk by limiting the spread of highly contaminated groundwater into clean and less contaminated portions of the RCB, reducing the likelihood and, potentially, the magnitude of human exposure to contaminated groundwater. The remedy targets groundwater in the highly contaminated 160-acre source area where contaminant concentrations have exceeded the levels allowed in drinking water by a factor of 1,600 or more. The RCB is a current source of drinking water to tens of thousands of people.

If no action is taken, contaminated groundwater will continue to spread, increasing the likelihood of future increases in contaminant concentrations in downgradient portions of the aquifer, increasing risk by increasing the likelihood of exposure, and increasing the eventual cost, difficulty, and time required for restoration of the aquifer.

The selected remedy includes above-ground water treatment systems to remove the COCs (perchlorate and VOCs) from the extracted groundwater. After treatment, the extracted groundwater will achieve all ARARs identified in this ROD. The remedy also requires compliance with ARARs associated with the disposal of treatment residuals and control of air

emissions, if any, to eliminate or minimize short-term risks and cross-media impacts. The remedy includes an extensive monitoring program to evaluate the performance of the remedy.

At present, there is no known exposure pathway in which ecological receptors could be exposed to contaminated groundwater at the Site.

2.12.2 Compliance with Applicable or Relevant and Appropriate Requirements

The SA OU remedy shall comply with ARARs as described in Tables 12 through 14, except when additional studies and investigations may be undertaken pursuant to CERCLA section 104(b) (CERCLA section 104(b) activities) during remedial design. EPA expects to fully comply with ARARs during most CERCLA section 104(b) activities, but there may be activities during which EPA concludes that it is not practicable to comply fully. Such activities may include discharges of untreated or partially treated groundwater resulting from the development and testing of new groundwater extraction wells, but may also include other temporary high flow, high volume discharges.

In such cases, EPA will evaluate the practicability of fully complying with ARARs, and comply with the EPA policy that removal actions "will comply with ARARs to the extent practicable, considering the exigencies of the circumstances" (55 Fed. Reg. 8756). Studies and investigations undertaken pursuant to CERCLA section 104(b), such as activities conducted during RI/FS, are considered removal actions (55 Fed. Reg. 8756).

Tables 12 through 14 provide a complete list of ARARs. Because this remedy is an interim action that does not include restoration of the aquifer as an objective, EPA is not, at this time, establishing chemical-specific ARARs as *in situ* cleanup goals for contaminated groundwater at the Site. In situ cleanup goals will be addressed in a subsequent decision document.

ARARs are frozen at the time the ROD is signed, but offsite requirements are not (e.g., drinking water standards applicable to treated water delivered for potable use). Offsite requirements in effect at the time the action occurs must be met, even if they differ from those in effect at the time the ROD is signed.

2.12.3 Cost-Effectiveness

EPA must select a remedy that is cost effective. The NCP defines a cost-effective remedy as one whose "costs are proportional to its overall effectiveness." More than one remedial alternative can be cost effective, and EPA is not required to select the most cost-effective alternative. Overall effectiveness is determined by evaluating three of the balancing criteria: long-term effectiveness; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness.

In EPA's judgment, the selected remedy for the SA OU is cost-effective. EPA made this judgment after evaluating the overall effectiveness of the alternatives that satisfied the threshold criteria (i.e., Alternatives 2 and 3), and then comparing overall effectiveness to costs.

EPA's judgment is based on the high ranking assigned to Alternatives 2a and 2b for the three balancing criteria. Alternatives 2a and 2b provide the elements of, and would have the same overall effectiveness as, the selected remedy. Alternative 3 is also ranked high on the three

balancing criteria, but at higher cost (26 percent higher than Alternative 2a, assuming potable use of the treated water).

Alternative 1 is less expensive than the selected remedy (17 percent less than Alternative 2a, assuming potable use of the treated water), but also potentially less effective (ranked moderate in long-term effectiveness and not fully protective of human health). EPA has concluded that the incremental cost of the remedy provides a significant increase in overall effectiveness by increasing the likelihood that the remedy will prevent the spread of contaminated groundwater during all anticipated groundwater conditions.

EPA judges the No-Action Alternative as neither protective of human health nor cost-effective.

Table 12. Chemical-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
Federal Safe Drinking Water Act (SDWA), 42 U.S.C. 300 et seq.	National Primary Drinking Water Standards, including 40 CFR 141.61 and 40 CFR 141.62	Relevant and Appropriate	Establishes national primary drinking water standards, including Maximum Contaminant Levels (MCLs), to protect the quality of water in public water systems. MCLs are enforceable standards and represent the maximum concentrations of contaminants permissible in a public water system.	The remedy will result in the use of treated groundwater as drinking water supply or for aquifer replenishment. In either case, water treatment systems will reduce the concentrations of perchlorate, TCE, and other COCs to below EPA or State MCLs, whichever is lower. MCLs are considered relevant and appropriate.
State of California Domestic Water Quality and Monitoring Regulations	California Safe Drinking Water Standards (MCLs), 22 CCR § 64431, and § 64444	Relevant and Appropriate	Establishes California MCLs. Some California MCLs are more stringent than the federal MCLs, and some California MCLs are established chemicals for which there are no federal MCLs. The more stringent limit is determined on a chemical-by-chemical basis.	There is a California MCL for perchlorate but no federal MCL. The California MCL for carbon tetrachloride is lower than the federal MCL for carbon tetrachloride.
SDWA, 42 USC 300 et seq.	National Primary Drinking Water Standards, 40 CFR 141, including 40 CFR 141.23 and 40 CFR 141.24	Relevant and Appropriate	Requires monitoring to determine compliance with MCLs.	

Note:
CCR = California Code of Regulations
CFR = Code of Federal Regulations

Table 13. Action-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
Clean Air Act, South Coast Air Quality Management District (SCAQMD)	SCAQMD Regulation XIII, comprising Rules 1301 through 1313 SCAQMD Rule 1401 SCAQMD Rule 1401.1 SCAQMD Rules 401 through 403	Potentially Applicable	Rules 1301 through 1313 establish new source review requirements. Rule 1303 requires that all new sources of air pollution in the district use best available control technology (BACT) and meet appropriate offset requirements. Emissions offsets are required for all new sources that emit in excess of 1 pound per day of VOCs. SCAQMD Rule 1401 requires that best available control technology for toxics (T-BACT) be employed for new stationary operating equipment if the cumulative carcinogenic impact from air toxics would exceed the maximum individual cancer risk limit of 1 in 1 million (1 × 10-6) without T-BACT. SCAQMD Rule 1401.1 applies to discharges that are within 500 feet of a school and requires that the discharges from a facility do not create a cancer risk in excess of 1 in 1 million (1 × 10-6) at the school. SCAQMD Rule 401 limits visible emissions from a point source. SCAQMD Rule 402 prohibits discharge of material that is odorous or causes injury, nuisance, or annoyance to the public. SCAQMD Rule 403 limits downwind particulate concentrations.	Construction activities must comply with all substantive SCAQMD requirements, if applicable. If air stripping is used to remove VOCs from groundwater, air emissions must meet substantive SCAQMD requirements, if applicable.

Table 13. Action-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
RCRA Subtitle C Hazardous Waste Identification and Generator Requirements; California Hazardous Waste Regulations, Generator Requirements	22 CCR, Division 4.5, Chapter 11 Identification and Listing of Hazardous Waste	Potentially Applicable	A solid waste is a RCRA hazardous waste if it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity identified in 22 CCR 66261.21, 66261.22(a)(1), 66261.22(a)(2), 66261.23, 66261.24(a)(1), 22 CCR 66262.11, and 22 CCR 66260.200, or if it is listed as a hazardous waste in Article 4 of Chapter 11. Under the California RCRA program, wastes can be classified as non-RCRA, state-only hazardous wastes if they exceed the soluble threshold limit concentration (STLC) or the total threshold limit concentration (TTLC) values listed in 22 CCR 66261.24(a)(2).	Wastes generated during construction of the remedy (e.g., drill cuttings or soil from pipeline installation) or operation of the remedy (e.g., treatment residuals such as spent carbon or resin) will be characterized and managed in accordance with substantive provisions of any applicable RCRA requirements.
Federal SDWA Underground Injection Control (UIC) Regulations, 42 U.S.C. §300f et seq.	40 CFR 144.12-144.13	Potentially Applicable	Prohibits injection wells from 1) causing a violation of primary MCLs in the receiving waters, and 2) adversely affecting the health of persons. Provides that contaminated groundwater 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.	If reinjected to replenish the aquifer, groundwater will be treated to comply with UIC requirements.

Table 13. Action-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
Resource Conservation and Recovery Act §3020	42 U.S.C. §6939b	Relevant and Appropriate	Provides that the ban on the disposal of hazardous waste into a formation that contains an underground source of drinking water shall not apply to the injection of contaminated groundwater into the aquifer if: (i) such injection is part of a response action authorized by 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.	If determined to be hazardous waste, groundwater will be reinjected into the aquifer only if it is treated as part of the CERCLA response action and the action is protective of human health and the environment.
California Porter-Cologne Water Quality Act, California Water Code 13240	Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin, Chapters 2(Plans and Policies), 3(Beneficial Uses), and 4 (Water Quality Objectives)	Relevant and Appropriate	The California Porter-Cologne Water Quality Act incorporates the requirements of the federal Clean Water Act (CWA) and implements additional standards and requirements for surface waters and groundwaters of the state. The Regional Water Quality Control Board, Santa Ana Region (RWQCB) formulates and enforces water quality standards as defined in the Basin Plan. The Basin Plan identifies the beneficial uses of surface and ground waters and establishes water quality objectives necessary to protect beneficial uses. Water quality objectives impose limitations on receiving waters, rather than on discharges, and are applicable to any body of water that receives discharge from remedial activities associated with this OU. The Basin Plan also 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	Substantive provisions of Chapters 2, 3 and 4 of the Basin Plan will be relevant and appropriate if remediation includes reinjection of treated water to replenish the aquifer or if there are temporary discharges to surface water during design, construction, or operation of the remedy.

Table 13. Action-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
			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.	
Federal Water Pollution Control Act 33 USC 1311, 1314(b)		Potentially Applicable	Provides requirements for effluent limitations from point sources.	Substantive provisions potentially apply if remediation includes temporary discharges to surface water during design, construction, or operation of the remedy.
Federal Water Pollution Control Act 33 USC 1342,1344	33 CFR 323.1 et seq.	Potentially Relevant and Appropriate	Provides requirements for discharges from point sources into waters of the United States. Waters of the United States are defined in 40 CFR 122.2 . The dredge and fill requirements are for discharges into the navigable waters of the United States.	Substantive provisions may be relevant and appropriate if remediation includes temporary discharges to surface water during design, construction, or operation of the remedy and/or discharge of dredged or fill material
California Toxics Rule.	40 CFR 131.36(d)(10)(ii)	Applicable	The California Toxics Rule is a federal regulation promulgated under the Federal Water Pollution Control Act that sets numeric criteria for certain pollutions in inland waters. It applies to waters assigned an aquatic life or human health use classification in a California Regional Water Quality Control Plan.	Criteria will be applicable if there are temporary discharges to surface water during design, construction, or operation of the remedy.
California Land Disposal Restrictions, Requirements for Generators	22 CCR 66268.1 et seq. Also 22 CCR 66268.3, 22 CCR 66268.7, 22 CCR 66268.9, 66268.40 and 22 CCR 66268.50	Potentially Applicable	Compliance with land disposal regulation treatment standards is required if hazardous waste (e.g. contaminated soil) is placed on land.	Land disposal requirements may apply to the disposal of spent carbon generated during the treatment of groundwater for VOCs and, potentially, to the disposal of treatment residuals associated with other technologies if the wastes are determined to be hazardous wastes. Wastes will be characterized before shipment offsite to determine whether land disposal restriction treatment standards apply and, if so, whether the waste meets the treatment standards.

Table 13. Action-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Source	Citation	ARAR Status	Description	Comment
California Hazardous Waste Regulations, Generator Requirements	22 CCR 66262.34(a)(1)(A)	Relevant and Appropriate	Hazardous waste stored onsite should be placed in containers or tanks that are in compliance with California Hazardous Waste Regulations.	Storage of any hazardous waste accumulated onsite must be in compliance with substantive requirements for interim status facilities.
California Hazardous Waste Regulations, Storage of Hazardous Waste	22 CCR 66265.170 et seq. (Article 9) 22 CCR 66265.190 et seq. (Article 10)	Applicable	Regulates the use and management of hazardous waste in containers, compatibility of hazardous wastes with containers, and special requirements for certain hazardous wastes.	Substantive provisions of Articles 9 and 10 will be applicable if hazardous waste is generated and accumulated onsite.

Table 14. Location-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Requirement	Citation	Applicable or Relevant and Appropriate?	Description of Requirement	Action to be Taken to Attain Requirement
National Historic Preservation Act (NHPA), (16 U.S.C. § 470 et seq. Historic Sites Act of 1935, 16 U.S.C. 461 et seq.	36 CFR Parts 62,63,66,68 36 CFR Part 800 36 CFR 62.6(d) 36 CFR Part 65 36 CFR 63, 36 CFR 800	Potentially Applicable	The NHPA requires federal agencies to take into account the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Under the Historical Sites Act, the Secretary of the Interior is authorized to designate areas as national natural landmarks for listing on the National Registry of Natural Landmarks. Requires preservation of historical sites, buildings and objects that are discovered that have national significance.	The Site has not been designated as having historic value to warrant inclusion in the NRHP, or listed as a national natural landmark under the Historic Sites Act, but EPA will evaluate whether any site or structure encountered during implementation of the remedy is eligible.
The Archaeological and Historic Preservation Act (AHPA), 16 U.S.C. 469 et seq. Archaeological Resources Protection Act (ARPA), 16 U.S.C. 470	43 CFR Part 7	Potentially Applicable	AHPA provides for preservation of historical and archaeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. The ARPA prescribes steps to be taken by investigators to preserve data. If remedial activities would cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data, mandatory data recovery and preservation activities would be necessary.	EPA will evaluate whether any terrain to be altered during implementation of the remedy may affect archaeological or historical data.

Table 14. Location-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Requirement	Citation	Applicable or Relevant and Appropriate?	Description of Requirement	Action to be Taken to Attain Requirement
The Endangered Species Act (ESA), 16 U.S.C. 1531, et seq. California Endangered Species Act, California Fish and Game Code, Division 3, Chapter 1.5 Native Plants Protection Act, California Fish and Game Code, Division 2, Chapter 10 1907-1908	50 CFR Part 200; 50 CFR Part 402 CCR 2050-2089 CCR 1908	Potentially Applicable	The ESA requires consultation with the resource agencies for remedial actions that may affect threatened or endangered species or their critical habitat. Section 7 of the ESA requires that federal agencies consider whether their actions will jeopardize the existence of species that are listed as threatened or endangered by the United States Fish and Wildlife Service or the National Marine Fisheries Service or their critical habitat. The California ESA establishes requirements for species and subspecies native to California. Establishes requirements to protect endangered native plants or rare native plants. Substantive provisions of these three acts may apply if applicable species and/or habitat are identified.	EPA will evaluate planned construction locations for threatened or endangered species or their critical habitat, and request consultation with appropriate resource agencies if implementation of the remedy may affect threatened or endangered species or their critical habitats.
Migratory Bird Treaty Act, 16 USC 703 California Fish and Game Code, Division 4, Part 2 Chapter 1	50 CFR 10.13 CCR 3003,3005,3511,3513	Potentially Applicable	Substantive provisions of the Act that protect migratory birds or any part, nest, or egg of any such bird may be applicable. Substantive provisions of the California regulations that protect the nests or eggs of birds are potentially applicable.	EPA will determine during remedial design if remedial activities may affect migratory birds and comply with applicable requirements.

Table 14. Location-specific Applicable or Relevant and Appropriate Requirements
B.F. Goodrich Site - Source Area OU ROD

Requirement	Citation	Applicable or Relevant and Appropriate?	Description of Requirement	Action to be Taken to Attain Requirement
Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et seq. California Native American Graves Protection and Repatriation Act, California Health and Safety Code 8011	43 CFR Part 10	Potentially Applicable	Substantive provision of the federal and state acts apply to the identification, protection and appropriate disposition of human remains, funerary objects, sacred objects, cultural items and/or cultural patrimony.	EPA will comply with substantive provisions of applicable requirements if human remains, funerary objects, sacred objects, cultural items and/or cultural patrimony are encountered during remedy construction.

Table 15. Other Federal Requirements
B.F. Goodrich Site – Source Area OU ROD

Requirement	Description of Requirement	Action to be Taken to Attain Requirement
Executive Order 11593 Protection and Enhancement of the Cultural Environment	Requires that federal agencies take timely steps to make records of any property listed on the NRHP that may be substantially altered by a federal action.	EPA will determine during remedial design if remedial activities may affect any properties listed on the NRHP.
Executive Order on Floodplain Management, Executive Order 11988	Requires that federal agencies evaluate the potential effects of activities in a floodplain to avoid, to the extent possible, adverse effects associated with direct and indirect development. In addition, EPA has developed guidance, the *Policy on Floodplains and Wetlands Assessments for CERCLA Actions* (EPA, 1985).	EPA will determine during remedial design if remedial activities may occur in a floodplain and avoid adverse effects to the extent possible.
Protection of Wetlands Executive Order No. 11990	Requires avoidance to the extent practicable the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practical alternative exists. Wetlands are defined as waters of the United States in 40 CFR 122.2. Wetlands include those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.	EPA will determine during remedial design if remedial activities may affect wetlands.
Indian Sacred Sites Executive Order No. 13007	Requires federal agencies to avoid disturbing sacred Indian sites on Federal lands.	EPA will determine during remedial design if remedial activities will occur on Federal lands and sacred Indian sites may be present.

2.12.4 Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

EPA has determined that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies are practicable at the SA OU, until EPA obtains sufficient data to select a final remedy. The remedy incorporates treatment processes that are expected to permanently destroy the contaminants in the extracted groundwater. EPA has also determined that the selected remedy provides the best balance of tradeoffs as compared to the other options in terms of the five balancing criteria and two modifying criteria. The selected remedy is discussed below in relation to the alternatives that were not selected for each of the balancing and modifying criteria.

- Long-Term Effectiveness and Permanence: The selected remedy is expected to achieve RAOs during all expected groundwater conditions and is ranked high in relation to the Long-Term Effectiveness and Permanence criterion. Alternative 3 is also ranked high in relation to this criterion. In addition, Alternative 3 would have the capacity to maintain hydraulic control during more extreme hydraulic conditions. Alternative 1 may not be fully effective during extended wet periods, potentially limiting the alternative's effectiveness in preventing the spread of contaminated groundwater. Alternative 1 is ranked moderate in relation to the Long-Term Effectiveness and Permanence criterion. This criterion was a decisive criterion in the selection decision.

- Reduction of Toxicity, Mobility, or Volume through Treatment: The selected remedy satisfies the statutory preference for treatment and would employ treatment technologies that would significantly reduce the volume (and mass) of contaminants by inhibiting contaminant migration, and reduce the toxicity and volume of contaminants by removing contaminants from the extracted groundwater. The alternatives that were not selected would similarly satisfy the statutory preference for treatment and employ treatment technologies that would significantly reduce the toxicity and volume of contaminants. There would be minor differences in toxicity, mobility, and volume reduction in proportion to the average extraction and treatment rate of the alternative (in other words, slightly greater reductions in the selected remedy than in Alternative 1, and potentially a slightly greater reduction in Alternative 3 than in the selected remedy).

- Short-Term Effectiveness: The selected remedy and Alternatives 1 and 3 are all assigned a high ranking for short-term effectiveness. None of the alternatives pose unmitigable risks to the community during construction, nor do any of the alternatives pose unmitigable risks to workers beyond typical hazards associated with large construction projects.

- Implementability: The selected remedy is ranked moderate in relation to the implementability criterion, reflecting the need to acquire land or arrange access for the construction of extraction wells, treatment facilities, and conveyance facilities, other difficulties associated with a construction project in a developed area, and agreements that may be needed with third parties for implementation. Alternative 3 is ranked similarly. Alternative 1 is assigned a moderate to high ranking, reflecting the fact that it may require fewer participating parties and fewer agreements.

- Cost: It is EPA's judgment that the selected remedy is cost effective. The additional cost of the selected remedy compared to Alternative 1 (17 percent more, assuming potable use of the treated water) will provide a significant increase in overall effectiveness by increasing the likelihood that the remedy will prevent the spread of contaminated groundwater during all anticipated groundwater conditions. The incremental cost of Alternative 3 (26 percent higher, assuming potable use of the treated water), is not justified by a commensurate increase in long-term effectiveness. This criterion was a decisive criterion in the selection decision.
- State acceptance: The State concurs with the selected remedy.
- Community acceptance: One commenter supported EPA's proposed remediation strategy, and four commenters expressed disapproval of EPA's proposed cleanup plan in whole or in part.

  One of the disapproving comments opposed the alternate end use option for the treated groundwater (reinjection) but favored EPA's preferred end use option (direct use of the treated groundwater as drinking water supply). EPA has carefully considered the comment, as described in Part 3 of this ROD, and concluded that reinjection remains an appropriate alternate end use option for the treated groundwater and should be included as an element of the remedy.

  EPA also considered the other comments expressing disapproval of EPA's proposed cleanup plan, as described in Part 3 of this ROD. None of these comments support one of the other action alternatives. Instead, the comments state that EPA did not provide adequate support in the RI/FS for the proposed remedy (one comment), EPA's proposal is "incomplete and premature" (one comment), or that EPA's proposal would not result in the water being "completely and thoroughly cleaned" (one comment). After careful consideration of the comments, EPA has concluded that it has provided an adequate rationale for its action, and that it is appropriate for EPA to take action now rather than select the No-Action Alternative and wait to take action until additional studies are completed.

2.12.5 Preference for Treatment as a Principal Element

The SA OU remedy will treat VOCs and perchlorate in the extracted groundwater. By utilizing treatment as a significant element of the remedy, the remedy will satisfy the statutory preference that remedies employ treatment as a principal element.

2.12.6 Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

2.13 Documentation of Significant Changes

The Proposed Plan for the SA OU was released for public comment in February 2010. The Proposed Plan identified, as EPA's preferred alternative, the groundwater extraction, treatment,

conveyance, and monitoring facilities included in Alternative 2a, with the aquifer replenishment component from Alternative 2b as an alternate option for use of the treated groundwater, and the flexibility to modify some elements of the alternative during the remedial design process.

EPA reviewed all written and verbal comments submitted during the public comment period. In response to the comments, EPA has made two changes:

> In response to a comment from the Goodrich Corporation, EPA has added additional flexibility in the selection of the water treatment process to be used for removal of perchlorate from the contaminated groundwater. This change would allow a biological treatment process (referred to as a bioreactor in the Goodrich comment), such as the one planned for the Rialto-06 project, to be used as part of the remedy.
>
> In response to a comment from WVWD, EPA is clarifying that additional remedial design evaluations shall be conducted to select the appropriate number, location, and design of groundwater injection wells if the treated groundwater is reinjected.

It was determined that no other changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

Part 3: Responsiveness Summary

The purpose of this Responsiveness Summary is to provide EPA's responses to comments received on the January 2010 Proposed Plan and RI/FS Report for the SA OU. During the public comment period, EPA received nine sets of comments on its proposed cleanup plan. Eight comments were submitted in writing (by regular mail or email) and one was made verbally during the public meeting held on February 10, 2010. A transcript of the public meeting, including the public comment, was prepared by a court reporter and is included in the Administrative Record.

The nine sets of comments can be summarized as follows:

- one set of comments was received from a party identified by EPA as a PRP for the B.F. Goodrich Site (Goodrich Corporation),
- one set of comments was received from a party responsible for an area of groundwater contamination to the south and west of the B.F. Goodrich Site (San Bernardino County),
- four sets of comments were received from public water suppliers affected by the groundwater contamination in the Rialto-Colton Basin or in adjacent groundwater basins (City of Riverside, WVWD [provided two sets of comments], and FWC)
- one comment was received from an individual who identified herself as a homeowner (Dinah L. Watson),
- one comment was received from an individual who identified himself as a consultant (Clay A. Rosson), and
- one comment was received from a vendor of a water treatment technology (Western Water Treatment Company).

3.1 Stakeholder Issues and Lead Agency Responses

One commenter, the County of San Bernardino, expressed support for EPA's proposed remediation strategy.

Four commenters expressed disapproval of EPA's proposed cleanup plan in whole or in part. Goodrich Corporation stated that EPA did not provide adequate support in the RI/FS for the proposed remedy. WVWD expressed opposition to Alternative 2b, which is partially incorporated into the selected remedy by the inclusion of aquifer replenishment as a backup option for use of the treated groundwater. Dinah L. Watson commented that EPA's proposal sounds like a "bad plan" because the water would not be "completely and thoroughly cleaned." FWC stated that EPA's proposal is "incomplete and premature."

In response to the Goodrich Corporation comments, EPA responds that there is adequate support in the RI/FS for the selected remedy and that all information necessary for the selection of a remedy has been considered. The basis for EPA's response is explained in detail in Appendix A. EPA's selected remedy incorporates one of the concerns expressed by the Goodrich Corporation

by allowing the use of an existing biological treatment system such as the one planned as part of the Rialto-06 project.

In response to the WVWD comments, EPA disagrees with WVWD's comments that Alternative 2b is not viable and that reinjection of groundwater is infeasible. Based on evaluations described in the January 2010 RI/FS report, EPA has concluded that it adequately evaluated the cost, effectiveness, and implementability of aquifer replenishment and that reinjection is a feasible option for the SA OU. The basis for EPA's response is explained in detail in Appendix A. EPA's selected remedy incorporates one of the concerns expressed by WVWD by clarifying that additional remedial design evaluations would need to be conducted to select the appropriate number, location, and design of groundwater injection wells if the treated groundwater is used to replenish the aquifer.

In response to the comment from Dinah Watson that EPA's proposal sounds like a "bad plan" because the water would not be "completely and thoroughly cleaned," EPA agrees that additional cleanup of the RCB is likely to be needed beyond that proposed as part of the SA OU. Rather than wait until all testing at the Site has been completed, EPA chose to divide the Site into two parts, and begin cleanup of the portion of the Site where enough testing and analysis has been completed to proceed. A more complete response is provided in Appendix A.

In response to FWC's comment that EPA's proposal is "incomplete and premature," EPA affirms its conclusion that all information necessary for the selection of a remedy has been considered, the evaluations completed as part of the RI/FS and documented in the January 2010 RI/FS Report are technically supported and appropriate, there is adequate support in the RI/FS and this ROD for the selected remedy, and EPA has properly focused its efforts on the B.F. Goodrich Site (rather than other contamination problems in the region). The basis for EPA's response is explained in detail in Appendix A.

Four commenters offered information or expressed opinions about the B.F. Goodrich Site but did not offer specific comments on the remedial alternatives or EPA's preferred alternative.

3.2 Technical and Legal Issues

No single issue was raised by a significant number of commenters. Because EPA did not receive a large number of comments, and the comments address a wide variety of issues, EPA has prepared point-by-point responses to all comments received. The responses are provided in Appendix A, along with the comments in their entirety.

Appendix A
Detailed Responses to Comments

Comments by: Peter Duchesneau of Manatt, Phelps and Phillips LLP on behalf of Goodrich Corporation

Comment GR-1. ***As indicated below, Goodrich believes that there is not adequate support in the RI/FS for the selected remedial alternative, including its location, and that other important considerations relevant for the selection of the remedial alternative have not been addressed. As such, EPA should revisit the RI/FS and its justification of the selected remedial alternative.***

EPA Response: As explained below, EPA has concluded that there is adequate support in the RI/FS for the selected remedy and that all information necessary for the selection of a remedy has been considered.

Comment GR-2. ***The RI/FS does not take into account all available data and does not adequately address the relationship of the purported plume from the 160-acre area, for which the RI/FS proposes an interim remedy, with other sites in the Rialto-Colton Basin connected with perchlorate and/or trichloroethylene (TCE). This would affect the outcome of the modeling and the design and success of the proposed remedy. For instance, other available groundwater analytical data exists in the basin that has not been incorporated into the RI/FS, is left out of the plume depicted in Figure 7, and is not utilized in the groundwater modeling (e.g., N-16 and F-27). The RI/FS also fails to address or incorporate recent available data from EPA's own monitoring wells (see attached).***

EPA Response: Commenter is correct that the RI/FS does not take into account all available data in the RCB; however, the RI/FS takes into account data that are relevant to the evaluation of remedial alternatives and selection of a remedy for the Source Area Operable Unit (SA OU) of the B.F. Goodrich Site.

The primary data types considered in the RI/FS are measured groundwater levels, measurements of hydrogeologic properties, measured pumping rates for existing groundwater wells, groundwater sampling results, and soil sampling results.

Sources of these data include (but are not limited to) an initial EPA groundwater sampling event in January 2008, a second EPA groundwater sampling event in March and April 2009, soil and groundwater testing results generated by PRPs under EPA or State oversight, groundwater level measurements and test results for municipal water supply wells provided by Rialto area water utilities, studies of the Rialto-Colton groundwater basin by the U.S. Geological Survey, and investigations of the former bunker area completed by San Bernardino County and its consultants under State oversight.

Data were generated, compiled, and evaluated for the 160-Acre Area, for other portions of the Rialto-Colton groundwater basin targeted by the SA OU, and for portions of the Rialto-Colton groundwater basin and adjoining groundwater basins upgradient, cross-gradient, and downgradient of the area targeted by the SA OU.

EPA considered data from a large number of monitoring wells, well clusters, and water supply wells, including, among others:

- Goodrich Corp. wells PW-1, PW-2, PW-3, PW-4, PW-5, PW-6, PW-7, PW-8, PW-9
- Emhart/PSI wells CMW-01, CMW-02, CMW-03, CMW-04, CMW-05
- City of Colton wells CPW-16, CPW-17
- Rialto-01, Rialto-02, Rialto-03, Rialto-04, Rialto-05, Rialto-06
- Colton 15, Colton 17, Colton 24
- USGS cluster wells 1N/5W-29Q, 1S/5W-11F, 1S/4W-20H_3S, 1S/5W-13B_4S, 1N/5W-29Q_3S, 1S/5W-3A
- WVWD-22, WVWD-24, WVWD-33
- San Bernardino County wells M-1_D, M-2_4, M-3_4, M-4_D, M-5_4, M-6_4
- San Bernardino County wells N-1, N-3, N-4, N-5, N-6, N-7, N-8, N-9_D, N-10_D, N-11_D, N-12, N-13_D, N-14, N-15_D
- San Bernardino County wells F-3, F-6, F-6A, F-32
- Target TW-1

These data are used to evaluate potential health risks from contaminated groundwater (see Section 1.3.3 of the RI/FS Report), define the nature and extent of contamination (including definition of the target areas described in Section 3.2.2 of the RI/FS Report), understand the relationship between the SA OU and the overall B.F. Goodrich Site, and understand the relationship between the SA OU and other sources of perchlorate and TCE contamination in and near the RCB, including the former bunker area described in Section 1.6.2 of the RI/FS Report.

Commenter makes two specific statements in support of its claim that the RI/FS does not take into account all available data and does not adequately address the relationship of the groundwater contamination addressed by the SA OU (referred to as a plume) to other sites in the RCB where perchlorate and/or TCE have been detected.

First, commenter states that *For instance, other available groundwater analytical data exists in the basin that has not been incorporated into the RI/FS, is left out of the plume depicted in Figure 7, and is not utilized in the groundwater modeling (e.g., N-16 and F-27).* Commenter is correct that the RI/FS Report does not comment on groundwater analytical data from every well in the Rialto-Colton area, or depict all groundwater analytical results in the figures included in the report. (It is assumed that the commenter is referring to Figure 1-7. There is no Figure 7 in the RI/FS Report.) The RI/FS Report includes comments on, and/or depicts the results from, key wells needed to understand the nature and extent of contamination at the Site or satisfy other goals of the RI/FS. For example, Section 1.6 of the RI/FS Report discusses the concentrations of perchlorate and TCE in groundwater samples collected from key wells at the Site.

It is neither necessary nor helpful to include data from every well in the RCB in the RI/FS Report. Doing so would make the report more difficult to read and the figures more difficult to interpret. Wells N-16 and F-27 are not key wells because they are located far to the west/southwest of the SA OU and there are numerous monitoring wells located between N-16 and F-27, to the southwest, and the BF Goodrich Site, to the northeast, that have been used to

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Appendix B

Part 2

define the extent of both the SA OU contamination and the former bunker area contamination. Wells N-16 is located approximately 0.5 mile to the southwest of the area known to be affected by the B.F. Goodrich Site; F-27 is located approximately 1 mile to the southwest of the area known to be affected by the B.F. Goodrich Site.

Second, commenter states that *The RI/FS also fails to address or incorporate recent available data from EPA's own monitoring wells (see attached)*. Commenter is correct that EPA did not provide a detailed discussion of data from six new groundwater monitoring wells installed by EPA between April and November 2009. Data from the new wells were not needed for the purposes of the RI/FS and, in any case, few data were available from the new wells at the time that the RI/FS was completed. Five of the six wells were installed downgradient of the area targeted by the selected remedy to help evaluate the need for a second remedy at the site (i.e., they are located outside of the area addressed by the SA OU). Water quality data from the sixth well (EPA-MP4), which is located in the area addressed by the SA OU, were not available at the time the RI/FS report was completed. (The first groundwater sampling results from EPA-MP4 were available from the analytical laboratory on 1/7/10.) EPA does show the locations of the new wells in several figures in the RI/FS report (Figures 1-2, 1-4, and 3-2) and mentions that their installation was underway (RI/FS report, Table 1-1). EPA has added the results of the analyses of groundwater samples from the six new wells, from August 2009, December 2009, March 2010, and/or April 2010, to the Administrative Record. The results do not affect EPA's evaluation of remedial alternatives or remedy selection decision.

Commenter also states that the alleged omissions would affect the design and success of the proposed remedy. Commenter is correct in noting that the RI/FS does not include all data needed to design a remedy. As noted in the RI/FS Report, and consistent with EPA regulations and guidance, additional data collection is planned during the remedial design process. EPA states in the RI/FS Report (p. 1-1) that: "Enough RI work has been completed to develop, evaluate, and select a remedial alternative. Additional data collection and analysis are anticipated during remedial design to further define project details."

Comment GR-3. ***Similarly, the history of the area and the identification of potential sources in the basin set forth in the RI/FS are incomplete and inaccurate. The RI/FS does not adequately consider the potential contribution to the "operable unit" from other sources in the basin, despite some of them being mentioned in the RI/FS (e.g., the bunker area). Some potential sources, such as the Denova site and the Broco manufacturing location, are ignored, despite being identified the administrative record. Moreover, while focusing on site locations associated with perchlorate, EPA has not investigated other potential sources of TCE in the basin despite listing the site on the National Priorities List based upon TCE. Without an accurate assessment of at least the available data, EPA cannot accurately characterize the purported plume or design an appropriate remedy.***

↳EPA Response: The SA OU of the BF Goodrich Site addresses contaminated groundwater in a portion of the site, extending from the 160-acre area about 1 ½ miles to the southeast. Except for a small portion of the targeted area of groundwater contamination that may be affected by contaminated groundwater originating from the former bunker area (discussed further in response to comment FWC-15), the known and suspected sources of the groundwater contamination addressed by the SA OU are located on the 160-acre area, including the Broco manufacturing area located at the southeast corner of the 160-acre area. Soil testing results for

the Broco manufacturing area are described in several documents included in the Administrative Record, including 8/1/05 and 1/27/06 reports by Blasland, Bouck & Lee, Inc. and 6/23/06, 7/27/07, and 9/4/08 reports by Kleinfelder Inc. EPA disagrees with the comment that the identification of potential sources in the basin set forth in the RI/FS is "incomplete and inaccurate."

Commenter makes the statement that the history of the area is incomplete and inaccurate, but offers no explanation or support for the statement. The history is provided as background only, and provides adequate detail to support the purposes of the RI/FS.

EPA provides information on the former bunker area in the RI/FS report (Section 1) and in the administrative record as background and as sources of data on groundwater quality and groundwater movement, **not** because EPA has concluded that the former bunker area is a significant source of the contamination addressed by the SA OU. It is stated in at least two locations in the RI/FS report that the former bunker area is not part of the BF Goodrich Site (Sections 1.3.3 and 1.6.2). Investigation and cleanup of soil and groundwater contamination associated with the former bunker area is being directed and overseen by the Water Board.

As noted in the comment, EPA included documents related to the former Denova and Broco locations in the Administrative Record. These documents were listed, along with other documents providing soil, soil gas, and groundwater data from locations downgradient of the 160-Acre Area, in Table 1-1 of the RI/FS report. EPA is unclear what the commenter means in stating that EPA ignored these potential sources.

TCE is a COC for the SA OU, and EPA and others have investigated the presence of TCE at the site as part of many of the investigations listed in Table 1-1 of the RI/FS. Investigations completed to date that included analysis of environmental samples for TCE include the results described in the 4/11/2003 report by PES Environmental, Inc., the 12/15/2003 report by Kleinfelder, Inc., the 4/20/2004 report by Locus Technologies, the 3/24/2005 report by GeoSyntec Consultants, the 2/10/2005 report by Environ International Corp., the 4/15/2005 report by Kleinfelder, Inc., the January 2006 report by Blasland, Bouck & Lee, Inc, the 3/30/2007 report by Environ International Corp. and Adverus, the 10/21/2006 report by Geosyntec Consultants, and the 4/22/2008 report by DPRA. They also include the January 2008 groundwater sampling event by EPA and CH2M HILL, the May and September 2009 sampling of soil vapor probes installed at or near the former B.F. Goodrich disposal pit, and the March 2009 groundwater sampling event by EPA and CH2M Hill. All of these reports are included in the Administrative Record for the SA OU. Additional investigations are underway as EPA conducts an RI/FS for a second operable unit at the Site.

As noted in the prior response, additional data collection and analysis are anticipated during remedial design to further define project details. If minor changes are detected in the extent of contamination or plume targeted by the SA OU, they can be accommodated during the design process.

Comment GR-4. ***The RI/FS does not adequately explain or support the basis for implementing an interim remedy and locating the selected remedial alternative at Rialto-2. EPA indicates that the operable unit is an incremental step toward cleanup and that its proposed action is considered "interim." However, in proposing two options and selecting the interim remedy, the RI/FS does not take into account the impact of other remedial measures***

that would later be needed in the basin as a result, including the total costs of the combined anticipated remedial actions.

Although the RI/FS sets forth the basis for ruling out Option 1, which proposed extracting contaminated groundwater from the Intermediate Aquifer at or downgradient of the 160-acre area, it does not adequately explain the reasoning for placing an extraction system at Rialto-2 under Option 2. The RI/FS merely explains that its downgradient target area boundary is downgradient of the merging of the Intermediate and Regional aquifers, which distinguishes it from Option 1. However, the location of Option 2 is questionable in light of the RI/FS indicating that contamination above the MCL is detected further down the basin and at higher levels than in the Rialto-2 area, such as in PW-5 (TCE at 32 ug/L and perchlorate at 1,400 ug/L) and PW-9 (TCE at 8.8 ug/L and perchlorate at 370 ug/L). The RI/FS should therefore consider other potential locations for the remedy, including in the area of Rialto-6, as discussed below.

↳EPA Response: EPA has adequately explained the basis for the remedy selected in this Record of Decision. EPA's proposal and selected remedy are based on the January 25, 2010 RI/FS Report and other documents included in the Administrative Record. EPA adequately explains the basis for its decision to locate the remedy at or near Rialto-02, in the RI/FS Report and in the supplemental information provided as part of this response.

As described in Section 2.1 of the RI/FS and in the Proposed Plan, the objectives of the SA OU are to: 1) protect water supply wells and groundwater resources by limiting the spread of contaminated groundwater from the 160-acre area; and 2) remove the contaminants from the groundwater. These objectives are consistent with and encouraged by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and EPA policies and guidance (e.g., as summarized in *Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration* June 26, 2009, OSWER Directive 9283.1-33). The five key principals identified in the 2009 OSWER Directive are:

1) If groundwater that is a current or potential source of drinking water is contaminated above protective levels (e.g., for drinking water aquifers, contamination exceeds Federal or State MCLs or non-zero MCLGs), a remedial action under CERCLA should seek to restore that aquifer to beneficial use (e.g., drinking water standards) wherever practicable.

2) Groundwater contamination should not be allowed to migrate and further contaminate the aquifer or other media (e.g., vapor intrusion into buildings; sediment; surface water; or wetland).

3) Technical impracticability waivers and other waivers may be considered, and under appropriate circumstances granted if the statutory criteria are met, when groundwater cleanup is impracticable; the waiver decision should be scientifically supported and clearly documented.

4) Early actions (such as source removal, plume containment, or provision of an alternative water supply) should be considered as soon as possible. ICs [Institutional Controls] related to groundwater use or even surface use, may be useful to protect the public in the short-term, as well as in the long-term.

5) ICs should not be relied upon as the only response to contaminated groundwater or as a justification for not taking action under CERCLA. To ensure protective remedies, CERCLA response action cleanup levels for contaminated groundwater should generally address all pathways of exposure that pose an actual or potential risk to human health and the environment.

Four of the five principals are relevant to the SA OU.

Principal #1 applies to the SA OU because the Rialto-Colton groundwater basin is a current source of drinking water and is contaminated above protective levels (Federal and State MCLs). Although EPA is not establishing restoration of the aquifer as an objective of the SA OU, the SA OU will reduce the time required and eventual cost of restoration. EPA expects that some or all of the aquifer can be restored and expects to establish MCLs or alternative levels as cleanup goals for the aquifer in a subsequent decision document.

Principal #2 applies to the SA OU because the contaminated groundwater targeted by the SA OU continues to spread, further contaminating the aquifer. The basis for this statement, and the impacts of continued movement of the contaminated groundwater, are described in Sections 3.3.1, 5.2.1, and 5.3 of the RI/FS Report, which discuss the base-case modeling simulation and No-Action Alternative.

Principal #4 applies in that it encourages early actions such as plume containment, which is an objective of the SA OU.

Principal #5 applies in that the SA OU does not rely on ICs as the only response action or as a justification for not taking action.

As noted in the comment (and described in Section 3.2 of the RI/FS Report), EPA evaluated two options for satisfying the RAOs as a first step in the development of the remedial alternatives evaluated in the RI/FS. The first option, hydraulic control option #1, is to extract contaminated groundwater from the Intermediate Aquifer at or downgradient of the 160-acre area to limit the movement of contaminated groundwater into downgradient portions of the Intermediate Aquifer and the Regional Aquifer. The second option is to extract contaminated groundwater from the Regional Aquifer at or downgradient of the 160-acre area to limit the movement of contaminated groundwater into downgradient portions of the Regional Aquifer.

As explained in the RI/FS Report, Option 1 was screened out based on its high cost and uncertain effectiveness. Option 1 called for extraction of contaminated groundwater from the Intermediate Aquifer, which is not fully saturated and can support only limited pumping during periods of low to intermediate water levels. This would make it expensive to construct and difficult to operate an effective groundwater containment system, prompting the decision to exclude Option 1 from the remedial alternatives.

The remedial alternatives make use of hydraulic control Option #2, in which contaminated groundwater is extracted solely from the Regional Aquifer. To avoid having to extract groundwater from the Intermediate Aquifer, extraction is planned immediately downgradient of the end of the Intermediate Aquifer, rather than immediately downgradient of the 160-Acre Area.

The area of contaminated groundwater targeted for hydraulic containment (the target area or targeted areas) includes contaminated portions of the 160-acre area and the area between the

160-acre area and the downgradient end of the Intermediate Aquifer. More specifically, the targeted area is defined in the RI/FS as the portion of the Intermediate Aquifer contaminated with perchlorate and TCE above MCLs, and the underlying portion of the Regional Aquifer contaminated with perchlorate and TCE above MCLs.

The RI/FS includes a more detailed narrative description and several figures depicting the boundaries of the targeted area. The narrative is provided in Section 3.2.2; the depictions are include as Figures 1-5 and 1-6 in vertical cross section, and Figure 3-2 in plan view.

To hydraulically contain the targeted areas in the most cost-effective manner, EPA expects that groundwater extraction wells will be located no more than 1,500 feet downgradient of the Intermediate and Regional Aquifer Target area. As stated in the RI/FS Report, the location where the aquifers merge "appears to be close to and possibly just upgradient of the Rialto-02 well." The remedial alternatives included in the RI/FS Report assume that the Rialto-02 well is used as part of the remedy and that Rialto-02 is supplemented with a second well located approximately one-half mile to the west of Rialto-02. EPA's Proposed Plan states that *EPA's preferred alternative would include the flexibility to refine the targeted area of groundwater contamination if new information demonstrates to EPA's satisfaction that contaminant concentrations in groundwater, or the location where the Intermediate Aquifer ends, differ from those assumed.* The selected remedy retains the flexibility proposed in the Proposed Plan (see ROD Section 2.11.2) and EPA expects that additional evaluations will be completed as part of the remedial design process to refine the boundaries of the target areas and optimize the extraction locations.

The Rialto-06 location is almost 2 miles from the downgradient end of the targeted area and more than 3 miles from the 160-acre area. The RI/FS does not evaluate the cost or effectiveness of extracting groundwater from the Rialto-06 location, but EPA expects that extraction that far from the targeted area would be a much more costly and/or less effective means of achieving the RAOs. There would be a greater risk that contaminated groundwater moving from the 160-acre area would not be intercepted by the remedy.

As noted in the comment, there is substantial contamination downgradient of the SA OU target area, as reflected in TCE and perchlorate levels at wells PW-5 and PW-9. EPA expects that additional actions will be needed to address this contamination, as explained in Sections 1.61 and 2.1.2 of the RI/FS and in EPA's January 2010 Proposed Plan. The Rialto-06 area is one of many possible locations for an additional response action.

Commenter states that the RI/FS does not take into account the impact of other remedial measures that would later be needed in the basin…, including the total costs of the combined anticipated remedial actions. EPA has taken into account future actions to the extent feasible (e.g., the evaluations completed in the RI/FS reflect EPA's best estimates of future groundwater pumping rates and locations, as described in the subsection labeled "Pumping Assumptions at Non-Remedy Wells" in Section 3.3.1 of the RI/FS report), and concluded that the SA OU remedy is needed regardless of any future groundwater extraction that occurs at the Rialto-06 well.

EPA has concluded that it appropriately considered cost as one of the nine evaluation criteria used to evaluate remedial alternatives, as described in Section 5.3.7 of the RI/FS report. EPA's evaluations included a comparison of its preferred remedial alternative to a no-action alternative.

As described in Section 2.11.4, EPA concluded that the selected remedy will reduce the eventual cost, difficulty, and time required for restoration of the aquifer.

Comment GR-5. ***The RI/FS does not adequately assess the long-term effectiveness and performance and the implementability of the selected remedy, as required under the evaluation criteria. Despite recognizing the importance of the safe yield and limited available water rights in the Rialto-Colton Basin (see, e.g., RI/FS Sections 2.3 and 2.4, respectively) and indicating that the current rate of groundwater production may not be sustainable, the RI/FS does not adequately address the long term implementability of the selected alternative or factor in the impact from the operations of other existing and future systems, including the additional cleanup actions planned downgradient in the basin as referenced by EPA. The reliance of the RI/FS on the fact that water could be discharged into reinjection wells as a viable option to minimize or avoid water rights issues is entirely unsupported and not consistent with the law or the facts.***

EPA Response: EPA has adequately assessed the long-term effectiveness and implementability of the remedial alternatives, as required by the NCP and in accordance with EPA guidance. Specifically, EPA has adequately considered the two topics identified in the comment: the operation of existing groundwater extraction systems and the operation of future systems (to the extent they are known).

EPA agrees with the comment that the operation of groundwater extraction wells other than those pumped as part of EPA's remedy (in other words, other pumping) may affect EPA's remedy. To address the effects of other pumping on EPA's remedy, the RI/FS accounts for historical extraction of groundwater from other wells in the basin in the groundwater modeling simulations (see Section 3.3.1 of the RI/FS Report), EPA met with the owners of other wells to develop reasonable projections about future groundwater extraction rates, and the remedy incorporates a performance monitoring system that will provide data needed to evaluate the effects of other pumping and identify any needed modifications to the operation of the remedy.

The RI/FS Report also specifically identifies over-pumping in the basin (the safe yield), the 1961 water rights decree, and other water supply-related issues that will require attention during implementation of the remedy (see Sections 2.2, 2.3, and 5.3.6 in the RI/FS Report). EPA agrees that these issues could complicate implementation of the remedy, as reflected in the rankings assigned to the remedial alternatives (none were assigned a high ranking). EPA is including two different options for use of the treated groundwater produced by the remedy (direct potable use and aquifer replenishment by reinjection) to lessen potential delays associated with water supply related implementation issues. EPA expects that any water provided to a water utility would be counted against existing water rights and satisfy a portion of the utility's existing demand for water such that the majority of the groundwater extraction occurring as part of the remedy would not be new extraction.

The comment asserts that the RI/FS relies on the fact that reinjection would minimize or avoid water rights issues. EPA has determined that reinjection may avoid or minimize certain water rights issues by returning the extracted groundwater back to the aquifer, but EPA's remedy selection decision does not rely on this view. EPA does not agree with the comment that EPA's position is "entirely unsupported and not consistent with the law or the facts."

As described in response to comment FWC-7, there is a difference in opinion between the water rights holders over interpretation of the 1961 decree, which further complicates any determination of the effect of the 1961 decree on EPA's remedy.

EPA expects that these issues will be resolved through discussion and negotiation and that ultimately, they will not prevent implementation of the remedy.

Comment GR-6. ***Further, the RI/FS references a project to construct a bioreactor to treat water from Rialto-6 (page 1-7). Goodrich understands that this project is "shovel ready" as West Valley Water District ("WVWD") and the City of Rialto have completed design plans to treat groundwater from WVWD-11 and Rialto-6, which have been submitted to the California Department of Public Health for Proposition 84 funding. Yet, the RI/FS does not consider the possibility of utilizing this project as the foundation of a remedial alternative, nor the need or ability to simultaneously operate both the selected remedial alternative and the WVWD/Rialto system.***

EPA Response: Commenter is correct in stating that in its RI/FS, EPA has not considered the possibility of using the planned Rialto-06 project (also referred to as the WVWD/Rialto system) as a foundation of a remedial alternative. EPA expects that extracting groundwater from the Rialto-06 location would be a more costly and less effective means of achieving RAOs than extraction in the vicinity of Rialto-02, as discussed in response to comment GR-4 above.

Nevertheless, some or all of the Rialto-06 project could be incorporated into the SA OU remedy or a future remedy at the site. As described in Section 2.11.2 of this ROD, EPA is deferring decisions on the water treatment technologies, treatment plant location, and the user of the treated water until the remedial design phase of the remedy.

EPA has considered the simultaneous operation of both the selected remedy and the proposed WVWD/Rialto system. EPA has discussed the WVWD/Rialto system with representatives of WVWD and the city of Rialto, informing them that EPA has determined, based on current information, that some pumping at the Rialto-06 location is likely to be beneficial, but that it is not yet possible to determine what rate is appropriate.

EPA is not aware of any reason that the selected remedy and the Rialto-06 project cannot be simultaneously operated. The sum of the average pumping rates for the selected remedy (estimated at 1,840 gpm, equivalent to 3,000 acre-feet/year) and the Rialto-06 project (estimated at 2,000 gpm, equivalent to 3,200 acre-feet/year) is less than recent pumping from the basin. EPA has, however, expressed a broader concern that the total amount of pumping in the basin in recent years may not be sustainable (see Section 2.4 of the RI/FS), because of long-term declines in Regional Aquifer water levels, but that concern is not specific to the selected remedy or to the Rialto-06 project. EPA representatives have had preliminary discussions with the four major pumpers in the RCB, and expect to have additional discussions during the remedial design phase to coordinate operation of EPA's remedy, the Rialto-06 project, and other pumping in the RCB.

Comment GR-7. ***In revisiting the RI/FS, EPA should consider the value of first initiating the proposed system in the area of Rialto-6, which, given the status of its design, funding and local community support, could be installed significantly faster than the remedial alternative selected in the RI/FS. In addition to WVWD and Rialto, Goodrich also understands that other parties are participating in the project at Rialto-6, including the Department of Defense, which***

has committed $3 million toward the bioreactor, and the State of California's Cleanup and Abatement Account, which has designated approximately $3 million for the project.

↳EPA Response: As explained in the response to comment GR-6, the Rialto-06 system should not substitute for EPA's remedy, but portions of the Rialto-06 project, and other existing projects, may be incorporated into the remedy for the SA OU or incorporated into a future remedy. Decisions on the extent to which existing systems can be incorporated into the SA OU will be made during remedial design.

Comment GR-8. ***Despite the RI/FS being silent as to EPA's own well results, EPA's test results from Well MP-1 (August, 2009 and December 2009) have not shown any contamination, at any depth, thereby supporting the understanding that contamination has not migrated nearly as far as depicted on RI/FS Figure 1-5 (nearly to CPW-17), but rather is not far beyond the Rialto-6 area. These results further support the need for the RI/FS to be reevaluated and to consider whether implementation of the remedy further downgradient in the area of Rialto-6 would be overall more effective.***

↳EPA Response: Commenter correctly notes that results from groundwater samples collected in August and December 2009 from EPA's Well EPA-MP1 did not detect perchlorate above the reporting limit of 2 micrograms per liter (µg/L). Perchlorate results from a third round of samples, collected in April 2010, were below the reporting limit of 1 µg/L. (The April 2010 results have been added to the Administrative Record.) Based on the these results, the depiction of the extent of contamination shown downgradient of Rialto-06 in Figure 1-5 should be qualified to reflect uncertainty about the downgradient end of contamination originating at the 160-Acre Area.

The extent of contamination downgradient of Rialto-06 and PW-9 is likely to be an important consideration in the selection of a remedy for the area downgradient of the SA OU. It has little relevance to the SA OU because it does not change EPA's understanding of the extent of contamination to be addressed by the SAO OU, the appropriateness of EPA's RAOs, or the cost, effectiveness, or implementability of the remedial alternatives evaluated in the RI/FS for the SA OU. Hence EPA disagrees with the statement that the remedy for the SA OU needs to be revaluated.

In addition, it is premature to conclude that contamination is "not far beyond the Rialto-06 area." There are numerous wells potentially downgradient of Rialto-06 contaminated by perchlorate and/or TCE whose source is uncertain. These include but are not limited to the municipal water supply wells WVWD 11, WVWD 16, WVWD 17, Colton 15, and Colton 17. As stated in the RI/FS Report (Section 1), EPA is carrying out additional data collection and analysis to better define the nature and extent of perchlorate and VOC contamination in downgradient areas to determine what additional remedial action may be needed.

Comments by: Kevin S. Milligan P.E., Utilities Assistant General Manager - Water, Riverside Public Utilities on behalf of the City of Riverside

Comment Riverside-1. ***Riverside applauds the EPA's designation of the BF Goodrich site as a Superfund site, and is encouraged by EPA's efforts to begin addressing the contamination. Riverside strongly encourages the EPA to focus on characterizing the southerly edges of the contamination plume and providing safeguards to prevent further migration of the plume. Although the San Jacinto and the Rialto-Colton faults appear to restrict groundwater flow into and out of the basin, there is no barrier on the Southeastern portion of the basins (USGS, 1997). The lack of barrier has allowed the contamination to travel into the Riverside basin, thereby impacting Riverside's wells.***

A comprehensive remedy for the BF Goodrich site must include provisions for characterization of the plume and prevention of further migration of the plume.

EPA Response: EPA agrees that more work is needed to characterize the area of groundwater contamination that has already moved beyond the area targeted by EPA's selected remedy and to determine what additional remedies are needed. As described in the January 2010 RI/FS Report and Proposed Plan, EPA has begun efforts to characterize this area. At present, there are **not** sufficient data to conclude that contaminated groundwater from the B.F. Goodrich Site has traveled into the Riverside Basin.

Comment Riverside-2. ***The City of Riverside began domestic water operation in 1913, and now provides water service to over 280,000 customers, including almost all residents in the City except for a small number of residents that live in the higher elevations of the City.***

The City is wholly dependent upon groundwater resources. The City extracts groundwater from the Bunker Hill and Riverside North and South Basins. Approximately 60% of the water is pumped from the Bunker Hill Basin and 40% is pumped from the Riverside Basin.

The City pumps from a total of 14 wells in the Riverside North and South Basins. Attached hereto is a map showing the location of the wells in relation to the B.F. Goodrich site. Within the Riverside South Basin, seven wells are located in the North Orange Well Field and water is conveyed to the distribution system through the 60-inch North Orange transmission pipeline. In the Riverside North Basin, four wells pump to the new John W. North Treatment Plant and three wells pump directly into the 60-inch Gage Pipeline.

The North Treatment Plant was constructed to bring new water supplies online and eliminate the City's reliance on imported Colorado River and State Project water. The North Treatment Plant cost approximately $25.7 million, with approximately 50% of Proposition 50 grant funds from the State of California (authorized by ballot initiative in November 2002 to construct water-related infrastructure that reduces Southern California's consumption of imported water from the Colorado River), with the remaining portion funded by the City. The North Treatment Plant began commercial operations on September 4, 2008, allowing Riverside to

become water independent except for emergency conditions, with fiscal year 2009 having no demand on either Colorado River water or the State Project water.

On March 31, 2009, the City filed the above-referenced lawsuit against various parties, including Emhart Industries, Inc., Goodrich Corporation, and Pyro Spectaculars, Inc., to protect its drinking water supplies against perchlorate contamination. The City had detected perchlorate in several of its wells in the Riverside Basin, in levels that exceeded state guidelines. To date, and at the request of B.F. Goodrich, the City has been granted several extensions of time by the court to serve its complaint and begin undertaking discovery. The reasons for such continuances are to allow the defendants and the State of California's Regional Water Quality Control Board, Santa Ana Region, to engage in settlement negotiations. (Attached is a copy of the complaint.)

↳EPA Response: EPA will consider the information provided on the city's water infrastructure as it conducts the RI/FS for the area of groundwater contamination downgradient of the SA OU.

Comment Riverside-3. ***Since September of 2008, Riverside has been sampling abandoned wells located northerly of its active wells. The RI/FS is specific to a relatively limited geographic area in the Rialto-Colton Basin, addressing perchlorate and volatile organic compound (VOC) groundwater contamination in a portion of the site that includes the 160-acre area and an area extending approximately 1.5 miles downgradient (southeast) from the 160-acre site. The 160-acre site is approximately 9 miles upgradient of the RPU Flume Tract wells (Figure 1). The RI/FS study proposes a treat/capture zone 1.5 miles downgradient of the site, but does not address the regional aquifer and that portion of the plume that has already migrated to the southeast beyond the proposed capture zone. Figure 1 shows a summary of perchlorate sampling and analysis completed by RPU. The nearest upgradient well from the Flume Tract which has recently detected perchlorate is the Patterson Well, approximately 2 miles upgradient of the Flume Tract wells and approximately 7 miles downgradient of the 160-acre site (9.4 ug/L, 8/8/09). Based on this observation, a portion of the perchlorate plume extending approximately 5.5 miles downgradient of the proposed capture zone is not being addressed.***

↳EPA Response: The available data do not, at this time, support the conclusion that contaminated groundwater from the B.F. Goodrich Site has traveled a distance of seven miles, as assumed in the comment. However, EPA continues to investigate the downgradient extent of contamination at the Site and will make use of the sampling results generated by the City of Riverside as part of its investigation. See response to comment Riverside-1 for additional discussion.

Comment Riverside-4. ***The RI/FS report cites groundwater flow velocities calculated by GeoLogic of 2 to 4 feet per day in the Intermediate Aquifer and 1 foot per day in the Regional Aquifer near the Rialto 03 Well. Figures 2 through 4 show potential plume migration velocities of 2, 5, and 8 feet/day, respectively. Using a velocity of 5 feet/day, perchlorate may be detected in the Flume Tract Wells as soon as 2014. These numbers are only estimates in the absence of any reliable pump test data in the area. RPU recommends redirecting a portion of the EPA resources to conduct a controlled pump test in the vicinity of the Rialto-Colton Basin downgradient of the Patterson Well in order to more accurately calculate potential travel time of the perchlorate plume. As the plume approaches the Santa Ana River channel, velocities in the recent channel deposits may be considerably higher.***

↳EPA Response: The prediction made in the comment ("perchlorate may be detected in the Flume Tract Wells as soon as 2014") assumes that contaminated groundwater from the B.F. Goodrich Site has already reached a point about one-half mile beyond the Patterson Well and that the groundwater is moving at a rate of 5 feet per day. The available data do not, at this time, support the conclusion that contaminated groundwater from the B.F. Goodrich Site has reached the Patterson Well, and the 5 feet per day estimate likely overestimates the average groundwater velocity in the area downgradient of the Patterson Well

EPA agrees that more information is needed to understand groundwater movement downgradient of the SA OU, and is conducting RI activities to acquire additional information and determine what additional cleanup efforts are needed to address contamination originating from the 160-acre area. The RI activities will likely include, at the appropriate time, pump tests similar to those recommended in the comment. The locations of any future pump tests may differ from those recommended in the comment.

Comment Riverside-5. ***The portion of the Rialto-Colton and North Riverside groundwater basins displayed in Figures 2 through 4 is a critical groundwater supply component for numerous agencies in addition to RPU. Domestic water supply wells in the area include RPU Flume Tract Wells 2, 3, 4, and 6; City of Colton Wells 23, 30, and 31; and Meeks and Daley Wells 36 and (new) Well 36. The combined pumping capacity of production wells in the area immediately downgradient of the nearest detected perchlorate (in the Patterson Well) is approximately 25 million gallons per day (mgd). The RPU Flume Wells alone produce and deliver 10 mgd to the J.W. North Treatment Plant.***

RPU continues to sample and analyze selected wells shown in Figure 1 and perchlorate analyses compiled to date indicate that the perchlorate levels are consistent and have in fact elevated over time in the Patterson Well, ranging from 7.0 ug/L in 2008 to 9.4 ug/L in 2009. The RI/FS report addresses the point source of the contamination, but the larger regional implications downgradient of the capture zone need to be addressed in a proactive manner. In order to predict the velocity of the plume and projected detection in production wells in the area, additional pump tests are required in order to calculate aquifer parameters specific to this region of the basin. RPU will assist in this effort as required in order to comprehensively address this issue.

↳EPA Response: EPA agrees that the RCB, and adjoining groundwater basins, are critical sources of drinking water for the region, and that additional investigation is needed downgradient of the SA OU. The investigations will likely include pump tests to estimate aquifer properties. EPA appreciates the city's offer to assist in future investigations. As noted in the response to comment Riverside-4, the timing and location of pump tests will be determined as EPA's remedial investigation progresses.

Comment by: Clay A. Rosson, Environmental Engineer/ Sustainability Consultant

I am aware of the plume locations in the basin. As you may be aware by now, there are two plumes. The longer one is coming from the 160-acre site, while the shorter one is flowing from the bunker complex beneath the sedimentation ponds of the concrete operation. We know exactly when those sedimentation ponds were created in 2001. Therefore, we know exactly how long it took to create the shorter plume further to the west. It is effectively a transport experiment that was permitted by San Bernardino County and the City of Rialto. If you take the distance and divide it by time traveled, you will have the effective transport of the shorter plume. You can do this on the back of an envelope. Now for the best part. With the effective transport number, you can determine roughly how long it will take for perchlorate to reach the Santa Ana River. You can also determine when the contamination hit groundwater at the 160-acre site in the 1980's. I am somewhat disappointed that your agency seems to be ignoring the impending pollution of the Santa Ana River with perchlorate which I have determined will happen within 3-5 years from the logic I have just outlined for you. Another important point that needs to be addressed is that the Cactus Basin, operated continuously as a stormwater basin by San Bernardino County Flood Control District, has contributed to the spreading of perchlorate contamination. It is easy to see from any of the figures supplied by the Rialto: Roadmap to Remedy, although the agencies left Cactus Basin off the map. See how the concentrations of perchlorate radically drop when they reach Cactus Basin due to the dilution from stormwater flows. If you let Santa Ana River be contaminated, all the water treatment facilities will have to be upgraded that have water rights to Santa Ana River water. You should weigh the cost of upgrading the water treatment plants against pumping and treating the plume before it reaches the river.

EPA Response: EPA agrees that there are two (or more) plumes of groundwater contamination in the Rialto-Colton groundwater basin. However, EPA disagrees with the conclusion that contamination will reach the Santa Ana River in three to five years. Available data on groundwater flow conditions in the RCB indicate that groundwater flow and contaminant transport rates are slower than assumed in the comment.

In addition, EPA does not agree that the available data demonstrate that the Cactus Basin has contributed to the spread of perchlorate contamination. EPA's groundwater level contours and groundwater flow evaluations do not indicate that the Cactus Basin has any substantive impact on groundwater flow or contaminant movement.

EPA lacks sufficient information to agree or disagree with other statements regarding the relative length of the plumes and groundwater travel times for the western plume.

As described in response to comment Riverside-1, EPA is conducting additional remedial investigation work to determine the extent of contamination at the Site, and the direction and rate at which contaminated groundwater moves downgradient of the area targeted by the SA OU. Additional remedial actions will likely be needed downgradient of the SA OU remedy.

Comment by: Dinah L. Watson, Homeowner

This sounds like a bad plan. Why wouldn't the water be completely and thoroughly cleaned. If you're going to clean it at all, clean it completely. Too many people in my neighborhood have died of cancer, and even more have thyroid gland problems. The home owners of Rialto keep paying and paying and it seems nothing is being done. No half baked plans please. Research and find out the best and most complete way to clean it up before spending anymore money.

↳EPA Response: The testing needed to develop a cleanup plan for the entire site is underway but has not yet been completed. Rather than wait until all testing at the site has been completed, EPA chose to divide the site into two parts, and begin cleanup of the part where enough testing and analysis has been completed to determine the best way to carry out the cleanup.

EPA expects to develop a second cleanup plan for the remaining portion of the site after sufficient testing and analysis have been completed, to ensure that the money spent on cleanup is properly spent.

All water pumped to the surface as a part of EPA's action will be treated to remove the contaminants of concern. The treatment goals for TCE, carbon tetrachloride, and perchlorate in the extracted groundwater are 5.0, 0.5, and 6 ug/L, respectively. These are the standards enforced by EPA and the State of California to ensure that the drinking water does not pose an unacceptable risk to human health. It is expected that TCE and perchlorate concentrations would, in practice, be reduced to levels substantially below MCLs.

Comment by: George Slajchert, Western Water Equipment Company

We request the opportunity to meet with you at your convenience for approx. one hour to present a new technology that did not appear in your options on Table 2 of this report.

An extensive study of perchlorate destruction has been carried out at Lawrence Berkeley National Laboratory using electro-chemo-bio process, patented, for which we have just completed a pilot unit. We feel this process will address the B.F. Goodrich Superfund site contaminated aquifer cleanup to near, nondeterminant level that will meet drinking water standards.

EPA Response: EPA representatives have spoken with Mr. Slajchert, and concluded that there is insufficient information available at this time to consider use of the technology referred to in the comment.

Comments by: GeoLogic Associates, on behalf of the County of San Bernardino

Comment GeoLogic-1: ***In our view, the report provides a good initial characterization of existing perchlorate and trichloroethene impacts to groundwater associated with the" 160-acre parcel" area (i.e., the Eastern Plume). The report also identifies an appropriate remediation strategy to intercept, contain and treat high concentration impacts just downgradient of the 160 Acre Site. Addressing these releases near the terminus of the Intermediate Aquifer is particularly appropriate given that impacts will be more difficult to address as they move downgradient and become more subject to changes in the regional flow stresses. These measures should also minimize the time required for cleanup of impacted areas downgradient of Rialto-02.***

We further agree that the remedial design phase should include as an element some additional field work and modeling to define the optimal location and pumping strategies for this remedial program. Further, it is our expectation that a more optimized location for the additional extraction well will enable containment under a wider range of conditions than is assumed in the RI/FS. We also understand and agree with the operable unit approach set forth in this document, which contemplates the potential need for additional remedial action to address the distal end of the Eastern Plume. Finally, we endorse and agree with the approach of managing the Eastern Plume as separate and distinct from the Western Plume, as EPA has proposed in this document.

EPA Response: EPA appreciates the support for the proposed remedy and overall approach for addressing the B.F. Goodrich Site contamination.

Comment GeoLogic-2: ***Section 1.5.2 Local Hydrogeology, Page 1-10, paragraph 1. We note that the text refers the reader to Figures 1-5 and 1-6 for the location of well MW-4 and its relationship to the BC Aquitard, but that those figures do not currently identify that well. Similarly, Figure 1-4 does not appear to identify the location of Rialto-02. Also, the text refers to the wells installed by EPA as "MW" wells while the figures appear to reference those wells as "MP" wells.***

EPA Response: Commenter is correct that Figures 1-5 and 1-6 do not show the location of EPA well MW-4 (also known as EPA-MP4). The location of EPA-MP4 is shown in two other figures in the RI/FS Report (Figures 1-2 and 1-4).

Commenter is also correct that Figure 1-4 does not show the location of Rialto-02. The location of Rialto-02 is shown in Figures 1-2, 1-5, and 1-6.

Commenter correctly notes that two naming conventions are used for the new EPA wells in the text and figures. In the future, EPA intends to use the naming convention in the figures (e.g., EPA-MP1, EPA-MP2).

Comment GeoLogic-3: Page 1-10, paragraph 2. The report notes that the groundwater flow gradient in the northwestern and central portions of the RCB is 0.003 foot per foot (ft/ft) to 0.012 ft/ft. This range appears to represent gradients in both the flatter regional aquifer

(currently approximately 0.0016 ft/ft near Rialto Well No. 3) and the steeper intermediate aquifer (typically about 0.015 to 0.020 ft/ft southwest of the 160-acre area), based on field measurements of each aquifer. We suggest clarifying the text to distinguish these aquifer gradients, since groundwater flow gradients have important implications with respect to contaminant migration.

↳EPA Response: The range of hydraulic gradients referenced in the text represents Regional Aquifer conditions only, not the Intermediate Aquifer. The gradients were estimated using 1994 and 1996 water level contours presented in the USGS reports cited in the RI/FS Report for the northern half of the RCB. EPA concurs that the hydraulic gradients observed in the Intermediate Aquifer are generally much higher than those observed in the Regional Aquifer.

Comment GeoLogic-4: ***Page 1-10, paragraph 4, last sentence. Text references Figure 1-6 but the correct reference appears to be Figure 1-4.***

↳EPA Response: As the commenter notes, the correct reference is to Figure 1-4.

Comment GeoLogic-5: ***Page 1-11, paragraph 4, last sentence. The text notes that the significant spiking of perchlorate and TCE levels in response to a rise in groundwater levels indicates that a large mass of perchlorate and TCE remains in the Intermediate Aquifer. We agree and note further that this spiking also suggests that significant perchlorate and TCE mass remains within the vadose zone beneath that site.***

↳EPA Response: EPA concurs that there is a reasonable likelihood that significant contaminant mass remains in the vadose zone beneath portions of the 160-acre area.

Comment GeoLogic-6: ***Section 1.7.1 Contaminant Identification. Page 1-13, First paragraph of section. Text indicates that benzene, carbon tetrachloride, chloroform, methylene chloride and TCE comprise the detected VOCs. EPA's list of detected VOCs for its January 2008 sampling round is considerably longer and includes 22 VOCs in addition to TCE. However, with 3 low-level exceptions, all of the other 22 VOCs were detected at trace concentrations. Review of the sampling results reported by GeoSyntec Corporation for the BF Goodrich "PW" wells indicates that these trace-level VOC detections are also inconsistent over time. Considering the nature of these VOCs, it seems probable that many, if not most, of the low- and trace-level VOC detections are associated with field sampling conditions (e.g., generator exhaust) or laboratory processes. This distinction is important because certain VOCs are consistently detected in Western Plume but are essentially absent from the Eastern Plume. These unique VOCs in the Western Plume are a strong indication that the Western Plume is not commingling into the Eastern Plume.***

↳EPA Response: Commenter is correct that the statement in the text does not list all of the VOCs detected in the January 2008 sampling event. The statement should have read: "Detected VOCs *include* benzene, carbon tetrachloride, chloroform, methylene chloride and TCE."

EPA agrees that many of the VOCs detected on and downgradient of the 160-acre area during the January 2008 sampling event have been detected at trace concentrations (i.e., less than 1 ug/L).

EPA also agrees that certain VOCs have been detected more consistently, and often at higher concentrations, in the western plume, than at the B.F. Goodrich Site.

There is **insufficient** evidence to support the statement that it is probable that many, if not most, of the low-and trace-level VOC detections are associated with field sampling conditions (e.g., generator exhaust) or laboratory processes.

Comment GeoLogic-7: ***Section 2.2.1 Potential Chemical-Specific ARARs. Page 2-3, First paragraph, second sentence. The text notes that TCE and perchlorate are the primary chemicals of potential concern (COPC) but that other VOCs are also present in selected wells. As noted in the comment concerning Section 1.7.1, many, if not most, of the low- and trace-level VOC detections that have been identified by the EPA appear to be associated with field sampling or laboratory conditions.***

EPA Response: See response to Comment GeoLogic-6. The ROD lists perchlorate, TCE, chloroform, methylene chloride, and carbon tetrachloride as COCs for this remedy.

Comment GeoLogic-8: ***Section 3.2.1 - Hydraulic Control Options. Page 3-2. The County agrees that hydraulic control of the Intermediate Aquifer by a series of extraction wells would be problematic. The thin and variable character of the aquifer would necessitate a large number of extraction wells whose operational conditions would likely be highly variable, inefficient, and potentially ineffective.***

EPA Response: Comment noted.

Comment GeoLogic-9: ***Evaluation of the Rialto-3 Aquifer Test. Page 3-5. The text discusses the 2006 Rialto Well No. 3 aquifer pumping test data as evaluated by GeoLogic Associate (2007), and an alternative analysis completed by CH2MHILL using the proprietary computer model, MLU. We note that the hydraulic conductivity on the eastern side of the basin is one of the parameters that can be refined during the remedial design phase for the remedy. Of note, and as detailed in the Updated Hydrogeologic Model report, when integrated in GeoLogic Associates' updated model, the Regional Aquifer horizontal (Ky) and vertical (Kv) hydraulic conductivity results obtained in the MLU analyses (120 ft/d and 6 ft/d, respectively) yielded essentially the same groundwater flow results as were achieved using GeoLogic Associates' Kh and Kv values of 80 ft/d and 8 ft/d (i.e., no significant flow or contaminant transport differences were identified in the updated model when the MLU values were input for the Regional Aquifer).***

Although GLA's updated groundwater flow model yields similar hydraulic head calibration statistics for conductivity values calculated by the EPA versus those calculated by GLA, the modeled gradients and head elevations using the EPA's conductivity values are significantly lower than observed during the modeled time period. We believe the conductivity value of 80 feet/day results in a better match of modeled to observed conditions. In addition, the County recently completed an aquifer pumping test of Rialto Well No. 3. This updated data yielded hydraulic conductivity values that are similar to those that were derived from the 2006 pump tests. (GLA 2010, Appendix A).

EPA Response: EPA concurs that additional refinement of the hydraulic conductivity estimates on the eastern side of the basin in the vicinity of the selected remedy should be considered during remedial design. EPA has not yet evaluated the results of the recently completed aquifer testing conducted by GeoLogic; however, the differences in conductivity

presented in the EPA model versus the GeoLogic model are not expected to have a significant impact on the technical evaluations conducted for the RI/FS.

The range of extraction rates proposed for the remedy (1,500 to 3,200 gpm) is likely similar to the range of extraction rates that would be generated from a model using GeoLogic's conductivity estimates.

Comment GeoLogic-10: ***Model Simulations to Evaluate the Effectiveness of Additional Extraction - General Approach. Page 3-5, last paragraph. The text indicates that an extraction well in addition to Rialto-02 will be needed to contain the impacts from the 160 Acre Site. We agree that an extraction well in additional to Rialto-02 would be appropriate, and understand that the optimal location for such a well will be developed as a component of the remedial design phase. Our experience with the Western Plume suggests that a location due south of the proposed EW-1 location could provide better plume containment efficiency than the EW-1 location shown in the RI/FS. Similarly, we understand that an optimal depth and screen interval for the extraction well will be developed as an element of the remedial design, and it is our understanding that the depth anticipated in the RI/FS for EW-1 (650 feet) is intended as a placeholder subject to further analysis.***

↳EPA Response: EPA concurs that a location to the south or southeast of the current location shown for EW-1 could potentially provide more efficient hydraulic containment than the location shown in the RI/FS Report. The optimal extraction well locations will be selected during remedial design concurrent with a more thorough evaluation of the location where the BC aquitard pinches out or is no longer effective.

The depth of any remedy extraction well will depend on the well's location along with the depth of contamination in the area targeted for hydraulic containment. The depth requirements are not expected to be significantly different than the 650 feet assumed in the RI/FS report.

Comment GeoLogic-11: ***Pumping Assumptions at Non-Remedy Wells. Page 3-7, Second paragraph. This section of the text discusses historical pump rates at the Rialto Well No. 3 treatment system. Please note that Rialto Well No. 3 has operated at approximately 1650 gpm (near its full capacity) since July 3, 2009. As detailed in the Updated Hydrogeologic Model (GLA, February 26, 2010), under current groundwater conditions, this rate is more than sufficient to fully contain the Western Plume consistent with the RAOs for that remedial action, and that lower pumping rates might be used in the future if current gradients and groundwater levels remain constant. The County is currently working with the RWQCB and the City of Rialto to identify pumping rates that assure plume containment and City water supply needs.***

↳EPA Response: The 1,650 gpm extraction rate reported for Rialto Well No. 3 is the average rate during the days in which the project operated, not the average rate over a period of months or years (as assumed in EPA's modeling). The average extraction rate for Rialto Well No. 3 over the last year has probably been less than 1,500 gpm.

Regardless, the actual rate does not appear to differ significantly from the 1,500 gpm rate assumed in the RI/FS modeling simulations. Future groundwater modeling simulations will incorporate updated pumping data from Rialto-03 and other production wells in the vicinity of the remedy

Comment GeoLogic-12: ***Page 3-8, First full paragraph. We agree that the Eastern Plume remedy design should consider the increased groundwater gradient that will be produced by relatively continuous operation of Rialto-06. As indicated in USGS reports (e.g., Woolfenden and Koczot, 2001), the groundwater gradient at or near Rialto-06 increases naturally compared to areas upgradient of it and regular operation of Rialto-06 will exacerbate this condition. This could affect plume containment requirements near Rialto-02 and EW-l.***

↳EPA Response: Comment noted. EPA will evaluate potential impacts of Rialto-06 pumping on the selected remedy during remedial design. However, EPA does not expect Rialto-06 pumping to have a significant impact on the remedy because of its location relative to the pumping planned as part of the selected remedy (almost two miles downgradient).

Comment GeoLogic-13: ***Page 3-8, Second paragraph. The text includes a discussion of the pumping rates of the Fontana Water Company. Please note that the County's Updated Hydrogeologic Model (GLA, February 26, 2010) includes the corrected Fontana Water Company annual pumping rates. Moreover, the corrected pumping rates have not significantly affected the model results compared to results presented in 2007.***

↳EPA Response: Comment noted.

Comment GeoLogic-14: ***Model Limitations. Page 3-10, Third bullet. The text notes that "very little data" exists regarding hydrogeologic conditions in the Intermediate Aquifer as a limitation of the model. This statement appears to reflect the relative lack of data regarding the Intermediate Aquifer within the Eastern Plume area; however, considerable hydrostratigraphic data has been developed by the County for this unit within the Western Plume area. This data gap for the Eastern Plume appears to be an important element of the remedial design phase. To avoid this statement being taken out of context it would be helpful to clarify that this statement refers to the Eastern Plume only, as the focus of the RI/FS is the northern portion of the Eastern Plume.***

↳EPA Response: The statement regarding the limited availability of data describing hydrogeologic conditions in the Intermediate Aquifer refers to the eastern portion of the Intermediate Aquifer from the 160-acre area to where it pinches out near the 210 Freeway.

Comment GeoLogic-15: ***Full Containment during All Expected Groundwater Conditions. Page 3-12. This section indicates that the maximum pumping rate required of the proposed interim remedy for the Eastern Plume would be approximately 3200 gpm. As discussed above, this value can likely be refined and improved during the remedial design phase when the location of the additional extraction well will be optimized. In addition to Eastern Plume containment, we also note that well EW-1 should be optimally located with respect to the location of the low concentration trough that exists between the Eastern and Western plumes to minimize potential adverse impacts on the Western Plume containment system being operated by the County.***

↳EPA Response: As noted above, EPA anticipates conducting additional evaluations during remedial design to refine the locations of the remedy extraction wells and their flow rates. These evaluations will take into account any updated interpretations of the extent of B.F. Goodrich Site contamination in the areas targeted for hydraulic control and will seek to optimize hydraulic

control while minimizing impacts on nearby production wells and the County's ongoing hydraulic containment system operations (i.e., the remedy for the former bunker area).

EPA does not anticipate that the design capacity will differ substantially from the 3,200 gpm rate assumed in the RI/FS Report.

Comment GeoLogic-16: ***Full Containment during All Groundwater Conditions. Page 3-12. This section appears to suggest that high groundwater elevation conditions are not expected to occur for periods long enough to affect plume containment capabilities. However, even if these higher groundwater conditions were to re-occur, it is our expectation that if the location of the additional extraction well is optimized during the remedial design period, that a 3200 gpm containment system should be capable of capturing the plume under a wider range of conditions than is assumed in the RI/FS analysis.***

EPA Response: Comment noted. EPA agrees that an optimized 1,500 to 3,200 gpm system will be capable of providing the required containment under a very wide range of hydraulic conditions.

Comments by: West Valley Water District (WVWD)

WVWD-1: ***Remedial Alternative 2B is not a viable remedial alternative and should be removed from consideration. This is primarily due to the following facts, inadequate analysis in the RI/FS, and/or other factors not mentioned or considered in the RI/FS:***

↳EPA Response: EPA disagrees that Alternative 2b is not a viable remedial alternative. Although Alternative 2b is not the selected remedy, EPA has identified reinjection (a key component of Alternative 2b) as an alternate end use option if agreements cannot be reached with water utilities in a timely fashion for use of the treated water. EPA has concluded that aquifer replenishment by reinjection is a viable option and that its inclusion in the remedy is warranted to minimize delays that could result if lengthy negotiations with third parties are required for potable use of the treated groundwater. EPA explains the basis for its position in responses to subsequent comments.

WVWD-2: ***The reasons are listed below in summary fashion and further explanation follows this summary list:***

1) ***The location and technical manner in which the RI/FS proposes reinjection in the Rialto-Colton Basin (the Basin), is technically infeasible based on geologic conditions presented in the RI/FS. Geologically, two reinjection wells are proposed along West Casa Grande Drive, with well screens from 450 to 700 feet below ground surface (bgs). However, as shown in RI/FS in Figure 1-5 at this location (about even with well PW-1), there is an approximately 100 foot thick aquitard interpreted between a depth of approximately 500 to 600 feet bgs.***

↳EPA Response: The injection well screen intervals assumed in the RI/FS Report are in error. The targeted depth interval should start immediately below the BC aquitard and extend down into the Regional Aquifer from approximately 650 to 850 feet bgs. This error results in a minor increase in capital costs for installation of the injection wells and does not affect the technical feasibility of reinjection. If EPA intends to inject the treated groundwater for aquifer replenishment, additional evaluations will be completed during remedial design to select exact screen depths.

WVWD-3: ***Even if the geological conditions were more favorable for reinjection north of the 160-Acre site, a significant period of pilot testing and much more infrastructure would be necessary. The "field testing" discussed in the RI/FS significantly underestimates the level of study needed for proper design. The duration of this pilot testing would at best extend the time to implementation, and will likely demonstrate that reinjection is technically infeasible anywhere in the northern-Basin area, given the Basin hydrogeologic and contaminant conditions.***

↳EPA Response: EPA disagrees with the claim that a significant period of pilot testing would be required for reinjection. If constructed, the injection wells will be tested to determine their capacity during remedial design, but the testing would not differ substantially from the aquifer tests that will be conducted at the groundwater extraction locations whether or not injection wells are used. Additional testing of a reinjection system, if built, may also occur during remedial

design or start-up of the remedy but is not expected to cause significant delays in project implementation.

The RI/FS adequately describes and evaluates the pipelines, pump stations, and other infrastructure required for reinjection.

The statement that pilot testing would "likely demonstrate that reinjection is technically infeasible anywhere in the northern-Basin area" is not supported. In the absence of new data to indicate otherwise, EPA disagrees.

WVWD-4: ***There was a lack of analysis presented concerning potential adverse hydraulic (and contaminant migration) implications of reinjection immediately upgradient of the source area.***

↳EPA Response: EPA does not anticipate that reinjection of treated groundwater into the Regional Aquifer north of the 160-acre area will have significant adverse hydraulic or contaminant transport impacts, or that there will be significant unintended hydraulic consequences. There is no known contamination in the Regional Aquifer for a considerable distance downgradient of the planned injection well locations. The contamination located just downgradient of the proposed injection well locations is in the Intermediate Aquifer, where the hydraulic heads are approximately 200 feet higher than those in the Regional Aquifer, indicating significant separation between the two aquifers. However, during the remedial design phase, if reinjection is being considered for end use of the treated water, EPA will conduct additional groundwater modeling and hydraulic analysis to assess the potential impacts of reinjection on groundwater flow, contaminant transport, and the effectiveness of the remedies for the B.F. Goodrich Site and the former bunker area to the west. If necessary, injection well locations will be adjusted to minimize potential negative impacts.

WVWD-5: ***Reinjection is a more complex and less implementable Remedial Alternative in relation to water rights than direct potable use, and the RI/FS did not acknowledge this. The Consent Decree for the Basin clearly restricts groundwater extraction only to parties subject to the decree. The very significant and lengthy process of resolving water rights for reinjection by a non-Decree party, will hold-up implementation of any Remedial Alternative including reinjection for years, if not prevent it entirely.***

↳EPA Response: There will be institutional issues to resolve if the treated groundwater is reinjected, including those raised by the 1961 Decree (the "The Lytle Creek Water & Improvement Company vs. Fontana Ranchos Water Company, et al.," Action 81264), but their resolution would not necessarily be more challenging or time consuming than the issues raised by supplying treated groundwater for potable use. The potable end use option will require detailed arrangements with the participating water utilities to resolve operational, liability, financial, and water rights issues.

WVWD-6: ***The RI/FS underplayed and did not highlight important State ARARs related to the reinjection, specifically compliance with RWQCB Basin policies, given reinjection is proposed directly to a drinking water aquifer. This additional ARAR may add significant cost, or time to implementation for the project (e.g. additional treatment requirements).***

↳EPA Response: EPA does not agree that State ARARs related to reinjection would be a significant factor in the time required for or cost of remedy implementation when compared to

the time consuming process that is required to obtain CDPH approval for use of the treated water as a drinking water supply. Portions of the Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin, including the State Water Resources Control Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, are identified as ARARs for the selected remedy (see Section 2.12.2 of this ROD).

WVWD-7: ***There will be very vigorous opposition to any remedial alternative involving reinjection.***

↳EPA Response: To date, only WVWD and, to a lesser extent, Goodrich have expressed concern about reinjection as a potential end use option. The primary end use option selected in the ROD is use of the treated water as a drinking water supply. Reinjection has been identified as an alternate option in case agreements cannot be reached in a timely manner with local water utilities for use of the water. EPA does not expect vigorous opposition to reinjection under this scenario.

WVWD-8: ***For all of the reasons above, the true cost of Remedial Alternative 2B will increase significantly above that presented in the RI/FS, making it much less feasible. In combination with the technical infeasibility of the Alternative as proposed in the RI/FS, the qualitative rankings for Alternative 2B should change as follows:***

- ***Reduction in Toxicity/Mobility: decrease to Moderate to Low (from High)***
  - ***this reduction is due to there having been no analysis presented of whether contaminants will be mobilized by reinjection in ways other than anticipated.***
- ***Implementability: decrease to Low (from Moderate):***
  - ***This reduction is because: this option is less implementable for technical/geologic reasons; an increased need for extensive pilot testing; the potential need for additional treatment; and, from a water-rights perspective.***
- ***Costs: cost likely will significantly increase if the RI/FS analysis for Alternative 2B is refined, let alone, if reinjection is even shown to be implementable.***

↳EPA Response: EPA does not agree with the Commenter that changes are needed to the qualitative rankings for Alternative 2b.

- Alternative 2b will not result in contaminants being mobilized through reinjection and remains ranked High for the reduction in toxicity/mobility criterion.
- The implementability of Alternative 2b remains moderate. Similar to the other remedial alternatives, there will be significant administrative requirements associated with implementation of Alternative 2b. However, EPA does not consider Alternative 2b to be less implementable than the other alternatives.
- None of the potential concerns raised in the WVWD comments would result in significant changes to the Alternative 2b cost estimates presented in the RI/FS. The increase in cost that would result from correcting the injection well depth would not result in a significant change in the total estimated cost of Alternative 2b.

WVWD-9: Further details regarding the summary comments above follow:

As stated in the RI/FS, "injection wells are prone to clogging and can potentially require considerable maintenance…", as such, the fact that the reinjection wells in the RI/FS were

grossly proposed as being screened from a depth of 450 to 700 feet bgs, when significant finer grained layers are present, shows that insufficient evaluation of the geological feasibility of reinjection was conducted. The finer grained layers are evident on the geological log for nearest deep well (PW-2A) and are clearly shown on RI/FS Figure 1-5 at the location of well PW-1. On Figure 1-5 of the RI/FS, the B/C Aquitard has an interpreted thickness of more than 100 feet in the vicinity of well PW-1 (along West Casa Grande Drive), and occurs at a depth of about 500 to 600 feet bgs (which is directly in the proposed reinjection well screen zone). These simple geological facts alone raise significant concerns about the feasibility of reinjection of the proposed volume and flow-rate of water along West Casa Grande Drive (in only two wells), and also shows a lack of sufficient analysis of this key geological limitation related to the reinjection proposed in Alternative 2B of the RI/FS.

↳EPA Response: As stated in the response to WVWD-2, the estimated injection well depths listed in the RI/FS are incorrect. If installed, the wells would be screened in the Regional Aquifer immediately beneath the BC Aquitard with a total depth of approximately 850 feet. In addition, if injection testing to be conducted during remedial design indicates that an additional injection well (or wells) are needed, this is not expected to be a significant change to the scope or total cost of the remedy.

WVWD-10: ***Without any pilot testing, which will take several months (if not years), the hydraulic properties of the aquifer at any location in the Basin to receive the intended amount and flowrate of water are unknown and the proposal may not be implementable, even if the geologic conditions were not as infeasible as where/how the RI/FS proposed performing reinjection. The RI/FS does mention, "field testing," as part of the remedial design; however, this testing should have clearly been identified as being critical to the potential success or failure of this remedial option and is more than a minor design consideration and will add very significant costs.***

↳EPA Response: As stated in the response to WVWD-3, EPA does not agree that the testing required for injection would be significantly more complicated or would take significantly longer than groundwater extraction well aquifer testing. In general, an aquifer's hydraulic capacity for injection is not significantly lower than its capacity for extraction. Complications can occur if the chemistry of the two waters is not compatible. The treated water may require some type of chemical adjustment prior to reinjection, but this process is not expected to be significantly more complex or expensive than will be required for treatment of water for a drinking water end use. Water supplied for a drinking water end use may require chemical treatment for disinfection, pH adjustment, and/or corrosion control.

WVWD-11: ***There may be serious significant unintended hydraulic consequences of reinjection (e.g. contaminant migration in ways/manners other than intended), especially in the north portion of the Basin so close to the source area (10's of feet away), where there is a highly faulted and very heterogeneous depositional environment. Extensive groundwater modeling should be performed solely to assess the potential effect of reinjection on the contaminant distribution and remedial effectiveness of both the 160-Acre efforts and those related to contamination released from properties now owned by the County of San Bernardino.***

↳EPA Response: Please see the response to WVWD-4.

WVWD-12: ***The RI/FS in terms of implementability for Alternative 2b states that, "Alternative 2b would not require agreements with the water purveyors for receipt of treated water and use of pumping rights,…" and also in the identification and screening section states, "Other potential advantages to reinjection are the minimization or avoidance of water rights issues,…". These statements are inaccurate and inconsistent with the law of water rights in California. The right to withdraw water is clearly limited in the Basin Consent Decree, and it is n over-reaching assumption of RI/FS that somehow reinjection avoids water rights issues, when in fact it complicates them.***

↳EPA Response: EPA agrees that reinjection would also require consideration of water rights issues and that the referenced statements in the RI/FS Report do not make this clear. This clarification does not change the relative ranking of the remedial alternatives, or EPA's decision to include reinjection as an alternate end use option. Please see response to WVWD-5 for additional discussion.

WVWD-13: ***The RI/FS did not mention one of the most important ARARs for Alternative 2b, which would be a RWQCB permit for reinjection, given the injection proposed is directly in a drinking water aquifer. Although there are Federal injection regulations, state and basin-specific regulations should also be evaluated. In particular, under the RWQCB requirements, treatment may be required to lower levels than anticipated by the RI/FS and/or for constituents not already planned for (e.g. nitrate or metals mobilized/solubilized by reinjection).***

↳EPA Response: As stated in EPA's response to WVWD-6, this ROD does identify State ARARs related to reinjection.

The treatment processes needed to meet RWQCB discharge requirements for reinjection are not expected to differ substantially from the treatment needed to meet CDPH drinking water requirements. The planned treatment processes are expected to reduce the concentration of most COCs to levels substantially below MCLs.

Based on available water quality data in the vicinity of the expected extraction well locations, elevated nitrate levels are not expected in the treated groundwater. The technical basis for WVWD's statement that treatment may be required for "metals mobilized/solubilized by reinjection" is not clear.

EPA complies with substantive provisions of applicable or relevant and appropriate federal and state requirements, but does not obtain permits for onsite actions at Superfund Sites.

WVWD-14: ***Between the complexities of the water rights questions, the geological infeasibility, lack of any extensive technical analysis of reinjection and/or potential adverse impacts, the need for pilot studies, additional permitting, and environmental analysis outside of the USEPA's purview, there may likely be significant water purveyor and/or public opposition to Alternative 2B.***

↳EPA Response: EPA has considered the detailed comments provided by WVWD, and concluded that reinjection remains a viable remedial alternative and was properly evaluated in the RI/FS.

As noted in response to comment WVWD-7, only WVWD has expressed significant concerns with Remedial Alternative 2b. Please see responses to comments WVWD-2 through WVWD-13 for responses to comments about the technical feasibility of reinjection, reinjection well design, the impacts of field testing, the potential for adverse or unintended impacts, State ARARs, the ranking of the remedial alternatives, and the need for permits.

Comment by: Mr. Don Olinger made at the BF Goodrich Superfund Site Public Meeting, February 10, 2010

Right. Okay. Good evening everybody. I'm Don Olinger. I'm with the West Valley Water Board. I'm one of the board of directors.

Mr. Praskins, I'm very impressed, very pleased someone of your stature to be here at a community meeting. I believe you were here, also, in December. This is the second meeting. You could tell by some of the questions and concerns here tonight that there's considerable anxiety still about the safety of our water supply in this community. I might -- something that is relevant, I think might be important for EPA West Valley Water District engaged the services of a reputable public opinion company. They did a survey just 2 months ago. There were 400 people in the Rialto or greater Rialto area, mostly West Valley water customers, that were asked questions. And something that would be indigenous to what we're talking about here tonight, one of the questions had to do with do you feel that protecting our water supply from contamination pollutants is important? Well, you would expect, you know, you'd get about a hundred percent on that. There's 98.1 percent of community residents of the respondents indicated that they thought that was extremely important. Here is the zinger, the one that I think you should be concerned about, the public should be concerned about. There is a perception out there -- despite valiant efforts on our part, West Valley Water District, to accommodate the public through newsletters and through phone calls, answering questions that -- that come to our district all the time. People still have the perception that the water in this area still has a lot of perchlorate in it and that their lives are in danger because of it. And I answer this question all the time knowing I've been in the community about 50 years or so and so I know a lot of people. People who are highly educated, knowledgeable still come up and say, "Don, you know, I've known you for a long time. You're on the board. Is our water really safe to drink? We keep buying bottled water, which is pretty expensive. And they are still concerned about the perchlorate. Your being here tonight, because of your stature up there, you know, EPA director will raise anxieties to a certain degree because they say this high part public official is down here, and he's down here for some reason, you know. And yet, we know, those of us who are here, that you're here to help in our situation.

And now, let me give you the results of what the public is thinking in terms of whether or not our water is safe. Let me get the right one here. Only 55 percent of the 400 respondents in Rialto 2 months ago felt that our water was truly free of perchlorate and other pollutants. 47 percent were not fully satisfied, and 18 percent were dissatisfied. In other words, they still have doubts. So I just thought maybe this information would be helpful to you in terms of the urgency of helping us, you know, with the perchlorate cleanup. It's a real problem here in our community, and thank you very much for your concern.

↳EPA Response: The comment describes public perceptions and concerns about the quality of the region's water supply. EPA appreciates the comment and will consider these observations in its community relation activities at the Site.

Comments by: Frederic Fudacz of Nossaman LLP on behalf of Fontana Water Company (includes as an enclosure comments by John List of Flow Science on behalf of Fontana Water Company)

Comment FWC-1. ***FWC, a division of San Gabriel Valley Water Company, is the largest water utility in the Rialto Colton, No Man's Land and Northeastern Chino Basins. These Basins provide a critically needed water supply which FWC must rely on to provide water service to a population of approximately 154,000 residents and businesses throughout its 52 square mile service area. This service area encompasses most of the City of Fontana, portions of the Cities of Rialto, Rancho Cucamonga, and Ontario, as well as adjacent unincorporated areas of the County of San Bernardino ("County").***

FWC pumps groundwater from 24 production wells in the Affected Region which is contaminated by perchlorate and VOC contamination. Eight of Fontana Water Company's wells have had perchlorate levels reach or exceed the maximum contaminant level ("MCL") of 6 ppb established by the California Department of Public Health. And all of those wells have been shut down and cannot be used without first treating the water.

In addition to those eight wells, Fontana Water Company has five wells in the Rialto Colton and No Man's Land basins which are also contaminated with perchlorate at varying concentrations below the MCL. All of these wells are down gradient from, and in close proximity to, the Goodrich Site and the Mid-Valley Sanitary Landfill ("MVSL") operated by the County and recognized by the Santa Ana Regional Board and the EPA as a source of perchlorate and VOC contamination.

There is persuasive hydrological and chemical evidence that the perchlorate in the FWC wells comes from the MVSL and the Goodrich Site. Dr. List has submitted reports to the EPA dated October 6, 2008 and December 10, 2009 which validate this conclusion based upon known groundwater flow trajectory data as well as the results of a preliminary perchlorate isotope study. Dr. List's analysis is supported by EPA's own modeling efforts with respect to the Proposed Plan. Figure A-8 from the RI/FS indicates that perchlorate from the Goodrich Site as well as the MVSL is impacting FWC's wells.

EPA Response: EPA appreciates the information provided by FWC describing its water supply infrastructure and water quality problems. EPA and FWC representatives have had numerous communications about these matters over the last seven years, and EPA included several documents prepared by FWC representatives in the Administrative Record for the remedy, including documents dated March 27, 2003, May 28, 2003, and November 21, 2008. EPA has also added the October 6, 2008, and December 10, 2009, submittals from Dr. List, and a March 27, 2009, letter from EPA to FWC (which addresses several issues raised in the comment), to the Administrative Record.

Based on currently available data, including the FWC submittals identified above, EPA does not agree that there is persuasive hydrological and chemical evidence that the perchlorate detected in FWC wells in the Rialto-Colton or Chino groundwater basins originates from the B.F. Goodrich

Site. See responses to other FWC comments for more detailed responses to FWC's claim that FWC wells in the Rialto-Colton or Chino groundwater basins are affected by the B.F. Goodrich Site.

Comment FWC-2. ***FWC acknowledges that the Proposed Plan purports to be interim. Nonetheless, the Remedial Investigation should comprehensively analyze the evident impacts to FWC's wells (or at least present a plan to do so) and provide some assurance that these impacts will be addressed. FWC's 154,000 customers deserve no less.***

EPA Response: EPA has completed a Remedial Investigation and Feasibility Study to support the selection of a remedy for the SA OU, and is conducting additional investigations to evaluate the need for additional response actions at the Site. EPA's additional investigations will include an analysis of the impacts on any FWC wells believed to be affected or threatened by the Site. EPA does not plan, as part of the B.F. Goodrich Site RI/FS, to analyze the impacts on FWC wells where there is not a reasonable basis to suspect that the wells have been affected by the Site.

Comment FWC-3. ***As Dr. List's report points out, the remedial investigation is flawed in that it does not analyze the remediation efforts required to address the contamination emanating from the MVSL site. EPA incorrectly assumes that contamination from the Goodrich Site can be addressed in isolation from efforts to remediate the contamination at the adjacent MVSL site.***

EPA Response: EPA has analyzed the remediation efforts associated with the MVSL site to the extent they are relevant to the B.F. Goodrich Site. EPA makes use of groundwater test results from investigations at the MVSL site in its evaluations at the SA OU, incorporates an assumption about the rate of groundwater extraction at the MVSL site remedy as part of its evaluation of remedial alternatives for the SA OU, and has reviewed documents related to the MVSL as they are generated to evaluate their relevance to the SA OU. EPA included six reports related to the MVSL in the Administrative Record for the SA OU, and has added four additional documents generated after completion of the January 2010 RI/FS Report.

EPA does not assume, as stated in the comment, that contamination from the Goodrich Site can be addressed in isolation. EPA expects that groundwater pumping occurring as part of the MVSL site and expected to occur as part of the SA OU remedy will need to be coordinated to ensure that neither remedy adversely affects the other and to optimize operation of the two projects.

The MVSL site referred to in the comment is also described as the former bunker area and the County Site.

Comment FWC-4. ***In 1998, FWC entered into a settlement with San Bernardino County wherein FWC pumps and treats the water from three of its wells in the Affected Region that have been contaminated with VOCs from the MVSL. Two of these wells, F10-B and F10-C, are in the No Man's Land Basin and the third well, F49-A, is in the Rialto Colton Basin. Since 1998, pumping and treating these three wells has allowed the County to meet its obligation pursuant to the Regional Board's Cleanup and Abatement Order 98-96 to contain the VOC plume emanating from the MVSL and remediate contamination in FWC's water***

supplies from those three wells. The RI/FS neglects to even mention this remedial action let alone analyze how the Proposed Plan would impact this RWQCB mandated cleanup.

↳EPA Response: The RI/FS does account for the MVSL remedial action by incorporating assumptions about groundwater extraction at the F10-B, F10-C, and F49-A wells as part of the evaluation of remedial alternatives. These three wells are specifically mentioned in Section 3.3.1 of the RI/FS Report (in the subsection titled Pumping Assumptions at Non-Remedy Wells), and the assumed groundwater extraction rates are listed in Table 3-3. The RI/FS Report also discusses the potential impact of pumping at the F10-B, F10-C, and F49-A wells on the remedial alternatives in the subsection of Section 3.3.1 titled Selected Flow Fields: 1998, 2001, and 2004 Conditions.

Based on preliminary evaluations completed as part of the RI/FS, EPA does not expect the SA OU remedy to have a significant effect on the three FWC wells operating as part of the RWQCB (Water Board) mandated cleanup. The three wells were chosen for use in the MVSL cleanup based on the belief that they draw groundwater from the MVSL area, not the B.F. Goodrich Site, and EPA's modeling efforts support this understanding. Nevertheless, to ensure that the SA OU does not have an adverse effect on the three FWC wells, EPA has initiated discussions with the Water Board over possible changes in the pumping required by the Water Board's Cleanup and Abatement Order 98-96. In addition, EPA has included a performance criterion as part of this ROD to ensure that the SA OU does not have an adverse effect on the three FWC wells or other non-remedy wells. This criterion, included in Section 2.11.2.1 of this ROD, states that *Implementation of the remedial action cannot result in adverse effects to water supply wells that are not part of the remedial action (e.g., significant increases in the concentrations of COCs or significant movement of contaminated groundwater toward non-remedy wells).*

Comment FWC-5. ***Moreover, as Dr. List points out, the EPA's own modeling (as reflected in Figure A-8 of the RI/FS) indicates that the County's proposed perchlorate remediation program for the MVSL, utilizing Rialto Well No. 3, will not be effective in containing the perchlorate plume from the MVSL. FWC's wells continue to be exposed to this plume (and already have rising detections of perchlorate). It therefore appears that the EPA approach of focusing solely on the Goodrich Site, without regard for the contamination emanating from the MVSL, will leave FWC without a remedy for either site and continue to leave FWC's wells subject to contamination emanating from both. This artificial and unworkable delineation of responsibility between the EPA and the Regional Board has had the predictable effect of leaving FWC's perchlorate contamination concerns unaddressed.***

↳EPA Response: EPA disagrees with Dr. List's assertion that EPA's modeling (as reflected in Figure A-8 of the RI/FS) shows that the County's perchlorate remediation program for the MVSL(which is overseen by the Water Board), utilizing Rialto Well No. 3, will be ineffective. See the response to FWC-16 for further discussion of the proper use of EPA's modeling results.

EPA also disagrees that "the EPA approach of focusing solely on the Goodrich Site... will leave FWC's wells subject to contamination emanating from [the B.F. Goodrich Site]." Although EPA does not believe, based on the available data, that FWC's wells have been affected by the B.F. Goodrich Site, a primary objective of EPA's remedy is to limit the impact of the contaminated groundwater spreading from the 160-acre area on affected or threatened water supply wells.

EPA also disagrees with FWC's characterization of the division of responsibility between EPA and the Water Board (which is overseeing remediation of the MVSL) as artificial and unworkable. EPA believes that the division of responsibility is based on a proper scientific analysis of the available geologic, water level, and water quality information from the MVSL and B.F. Goodrich sites, and that EPA and the Water Board have effectively coordinated their investigation and cleanup efforts at the two sites.

Comment FWC-6. ***The RI/FS misconstrues the Rialto Basin Decree. That Decree applies to a legally defined area which does not include the No Man's Land Basin from which Fontana Water Company pumps its F10-B and F10-C wells, among others. The No Man's Land Basin covers an unadjudicated area between the legally defined areas of the Rialto Colton and Chino Basins. FWC has pumped over 3,500 acre feet per year on average over the last five years from No Man's Land Basin as part of the Regional Board approved and mandated groundwater cleanup plan for VOCs migrating from the MVSL. Fontana Water Company enjoys senior appropriative pumping rights with respect to this water production.***

↳EPA Response: EPA is unsure why the commenter believes that the RI/FS misconstrues the Rialto Basin Decree. EPA does not comment on the specific areas included in or excluded from the Rialto Basin Decree; EPA does not assert that the F10-B and F10-C wells are located within the area addressed by the Rialto Basin Decree; and, EPA does not comment on the water rights that FWC asserts it possesses from its historical pumping in the No Man's Land.

Comment FWC-7. ***Moreover, the RI/FS's discussion of the Rialto Basin Decree inaccurately depicts water production permissible under that Stipulated Judgment. The Decree permits unlimited pumping each water year (October 1 to September 30). In the middle of each water year water level measurements are taken in three key wells (in March, April and May). Depending on those water level measurements, the amount of water available under the Decree can be limited during a period of limitation (June through September). Accordingly, it is incorrect to state, as your RI/FS does on page 2-8, that "Fontana Water Company reports its entitlement is 920 acre feet." FWC has made no such report. As we pointed out by a memorandum from Frederic A. Fudacz, to Wayne Praskins, dated April 15, 2009, that entitlement is only applicable during a period of limitation and not otherwise relevant. That memorandum is attached to this letter.***

The fact that the entitlement set forth in the Decree operates as a potential production constraint only during a four-month period of limitation was a critical premise in providing the water rights to support the VOC remediation effort mandated by Cleanup and Abatement Order 98-96. FWC is the beneficiary of a standby water lease between Fontana Union Water Company and the City of Rialto, a party to the Decree, in which Rialto committed to lease FWC up to 1,600 acre feet of its Rialto Basin water rights if and only if production is required to be curtailed under the Decree. The express intent of the Standby Water Lease is to enable FWC to produce 2,000 gpm continuously from its Rialto Colton Basin wells (e.g., F49A) to fulfill the VOC remedy of FWC's water supplies. Rialto and the County both confirmed this interpretation of the Decree, in an agreement dated May 9, 2000, and no party to the Decree has ever objected to the agreement before or after it was approved following a public hearing by the County.

↳EPA Response: FWC writes that the RI/FS has inaccurately depicted water production permissible under the Rialto Basin Decree, and that "it is incorrect to state… that "Fontana

Water Company reports its entitlement is 920 acre feet." FWC further comments that "FWC has made no such report" and makes reference to an April 15, 2009, memorandum from Frederic A. Fudacz to Wayne Praskins.

EPA is unclear why FWC believes that the RI/FS inaccurately depicts water production permissible under the Rialto Basin Decree or that the statement in the RI/FS report is incorrect. The statement in the RI/FS is based on the April 15 memorandum submitted by FWC's attorney, which states that "Depending on those water level measurements [in the key wells], the amount of water allocated to Fontana Union pursuant to Sections 5 and 9 of the Decree during a period of limitation (June – September) can be 920 feet." FWC is an agent for Fontana Union.

FWC also comments that the "entitlement is only applicable during a period of limitation and not otherwise relevant." EPA agrees that the entitlement is only applicable during a period of limitation, as stated in Section 2.3 of the RI/FS report: The RI/FS states that:

> *The decree allows unlimited pumping from the basin if the average of the "spring-high water levels" at three wells specified in the decree (the "index wells") exceeds 1,002.3 feet. When the level is between 969.7 and 1,002.3 feet, a party's entitlement is the sum of the amounts specified in Section 5 of the decree (which lists amounts for each party to the decree) and Section 9 of the decree (which refers to amounts for particular wells). If the average "spring-high water level" drops below 969.7 feet, the entitlement is reduced by 1 percent for every foot the average is below 969.7 feet, but not by more than 50 percent.*

EPA concludes that FWC does not disagree with the statements in the RI/FS, but instead is using its comments as an opportunity to advocate its position on the period of time that the entitlement is applicable in years in which the Decree limits pumping. The RI/FS does not comment on this matter. Two of the other major water rights holders in the RCB submitted letters in response to FWC's comment stating that they believe that EPA accurately describes the Rialto Basin Decree in the RI/FS report. See the March 24, 2010 letter from Gerald W. Eagans to Wayne Praskins, and the May 19, 2010 letter from Danielle G. Sakai to Wayne Praskins. These letters, along with the Rialto Basin Decree, have been added to the Administrative Record for the remedy.

As stated in the comment, FWC believes that in years in which the decree limits pumping in the RCB, pumping may be limited only between June and September. EPA is aware of FWC's interpretation of the decree, but notes that at least two of the other major water rights holders in the RCB disagree with FWC's interpretation. They note in their letters that the 1961 decree clearly provides that water rights are based on a twelve month water year which begins on October 1 and ends on September 30 of the following year. As explained in the Sakai letter, in years in which the decree limits pumping in the RCB, pumping limitations are in effect at least until water levels are measured during the following year.

Figure 2-1 and Table 2-1 in the January 2010 RI/FS Report provide historical information on the average of the spring-high water level elevations at three groundwater wells specified in the 1961 decree. The average elevation has been below the 1,002.3-foot benchmark since 2003, and dropped below the 969.7 foot benchmark in 2008. Results from 2010 show a continued drop in water levels down to 962.66 feet above MSL (see the June 2, 2010 letter from Samuel H. Fuller of the San Bernardino Valley Municipal Water District, which has been added to the Administrative Record). The average water level elevation has dropped 71 feet over the last

eight years, indicating that the current rate of groundwater production from the RCB may not be sustainable.

Comment FWC-8. ***EPA's Preferred Alternative 2A contemplates the pumping and treating of 1,500 to 3,200 gpm of contaminated groundwater and using the treated water as a drinking water supply. The alternative assumes that the treated water would be supplied to West Valley Water District even though it is noted that "it may be difficult for WVWD to accept the full 3,200 gpm of treated water that would be generated during high water level conditions." If EPA determines to go forward with its proposed interim remedy notwithstanding the concerns articulated by Dr. List and FWC, FWC believes there would be significant advantages to using FWC's Plant F49 as the site for treating water produced under the interim remedy.***

First, FWC already is developing plans for VOC and perchlorate facilities at Plant F49 to treat rising levels of contaminants in the well at that site.

Second, FWC is in a position to commit to use most, if not all of the treated water generated by the interim remedy (both alternative 2a and alternative 3) on a continuous basis and has the ability to deliver portions of that water to other local water purveyors (i.e. Rialto and WVWD) through existing or new interconnection facilities.

Third, FWC can provide ample land free of charge for the construction and proper operation of all necessary treatment facilities. The RI/FS acknowledges that there may not be sufficient room at the City of Rialto owned parcel where Rialto-2 is located to accommodate all necessary treatment facilities. To the extent that the preferred alternative would require additional land acquisition costs, using FWC's F49 site would result in additional savings.

Fourth, the modified preferred alternative would involve groundwater extraction from Rialto Well 2, from the new well EW-1, and would also include Well F49A. A 16-inch raw water delivery pipeline, approximately 11,000 feet in length, could be built from the Rialto 2 well to Plant F49 which has ample room to accommodate a treatment plant which could readily be designed to treat up to 6,000 gpm, which would be sufficient for FWC to treat water from the extraction wells contemplated by the interim remedy as well as for water FWC produces from Well F49A. Treatment would include ion exchange for perchlorate removal, liquid phase granulated activated carbon for volatile organic compound removal and disinfection. In addition, there is sufficient room at the F49 site to accommodate additional treatment modalities should, at a future date, additional contaminants or wells require remediation. Attached to this letter is a diagram showing FWC's proposed water treatment facility at plant F49 which could readily be incorporated within the preferred alternative as proposed by EPA.

Fifth, the additional capital cost to construct a 16-inch raw water pipeline for delivery of water from Rialto 2 and EW-1 to the F49 plant would likely be offset by reduced O&M expenditures. There is an elevation difference of approximately 130 feet between the location of the contemplated treatment plant in alternative 2-A and the location of Plant F49. Accordingly, there should be sufficient head pressure at F49 to substantially reduce power costs.

↳EPA Response: As described in the EPA's January 2010 Proposed Plan and in this ROD, EPA will make a final decision on the treatment plant location, pipeline alignments, and the use and user of the treated groundwater, during remedial design. At that time, EPA will consider the advantages and disadvantages of supplying water to all potential users.

Comment FWC-9. ***Sixth, if FWC does not treat the water, EPA should not assume that FWC would be in a position to accept a portion of the water generated by the proposed interim remedy. As a matter of policy, FWC cannot rely on treated water from other purveyors because the company is not in a position to assure its customers that the water will be treated to fully comply with safe drinking water standards and that the water will be delivered reliably in amounts and to locations required for efficient usage within its water system. However, FWC is, by far, the largest water utility in the Affected Region, with a water system master plan to serve 250,000 customers, and is able to commit to use most if not all of the water it treats at the treatment facility if the F49 option is adopted. To the extent that either West Valley Water District or Rialto require or desire a portion of the water treated by the Plant 49 option, existing interconnections between FWC's system and those adjacent water systems would allow for delivery of such treated water.***

EPA Response: EPA is not assuming that FWC would accept a portion of the treated water from the SA OU remedy.

Comment FWC-10. ***Finally, in lieu of utilizing plant F49, the preferred alternative could also be modified to utilize Plant F13 for the location of the treatment plant and distribution of treated water. This plant has the advantage of being closer to the Rialto 2 well, requiring a shorter raw water pipeline. Figure 3-9 in the RI/FS already shows a proposed route for a treated water pipeline between Rialto 2 and the F13 site. This same alignment could be utilized readily for a raw water pipeline if F13 were the treatment site. However, the F13 site does not enjoy the elevation advantage of Plant F49, but has ample available land for FWC to construct and operate treatment facilities to support the proposed interim remedy.***

EPA Response: As described in the January 2010 Proposed Plan and in this ROD, EPA will make a final decision on the treatment plant location, pipeline alignments, and the use and user of the treated groundwater, during remedial design.

[The following comments were included in an enclosure to the letter from Fred Fudacz. They were prepared by John List of Flow Science on behalf of Fontana Water Company]

Comment FWC-11. ***The RI/FS and proposed cleanup plan are incomplete and premature for several reasons:***
1) They ignore the best scientific knowledge that is available related to the Rialto-Colton Groundwater Basin.

2) They ignore the effects of the adjacent source of perchlorate --the County's MVSL --and the remediation proposed for that site.

3) They fail to propose any remedy for the perchlorate contaminating numerous FWC wells southwest of the Goodrich and County sites.
4) The proposed remediation plan leaves a large fraction of the existing perchlorate in the ground with the potential to impact downstream water supply wells.
5) They rely upon a groundwater model that is demonstrably in error and flawed.

EPA Response: EPA does not agree that any of the issues raised in items 1 through 5 lead to a conclusion that the proposed cleanup plan and RI/FS are incomplete or premature. Each of the statements in items 1 through 5 is addressed in detail in responses to comments FWC-12 through FWC-23.

Comment FWC-12. ***Contrary to Best Scientific Knowledge***

Although the RI/FS references (page 1-7) the seminal research paper by Anderson et al[1] that describes the structure of the Rialto-Colton Basin and the bounding faults, it contradicts the basic finding of the Anderson paper in relationship to the location and structure of the Rialto-Colton Fault (RCF). All of the figures in the RI/FS, and the description of the groundwater flow modeling performed for the RI/FS, show the RCF as a continuous impervious barrier to groundwater flow, which the Anderson et al. study shows is incorrect, both with respect to the fault location and structure. Furthermore, according to the seismic profiling of the fault area performed by the USGS (Gandhok et al[2]): "Our seismic reflection images show that the Rialto-Colton fault consists of an approximately 1-km-wide zone of small-offset (approximately 20 to 30 m) faults in the upper 1 km depth. No single large-offset fault was imaged along any of the seismic profiles."

Figure 1, below, is extracted from the Anderson paper and illustrates clearly the difference in location of the RCF Zone, as determined by the Gandhok and Anderson

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[1] *Anderson, M.,J.Matti,andR.Jachens.2004. "Structural Model of the San Bernardino Basin, California, from Analysis of Gravity, Aeromagnetic, and Seismicity Data." Journal of Geophysical Research. Volume 109, B04404, doi:10.1029/200318002544.*

[2] *Gandhok, G.; Catching, R. D.; Rymer, M. J.; Goldman, M. R. 2003 "Shallow Geometry and Velocities Along the Rialto-Colton Fault, San Bernardino Basin, California" American Geophysical Union, Fall Meeting 2003, abstract #S21F-0393*

work and the prior location of the fault, as depicted by Dutcher and Garrett[3]. A review of Plate 1 from Dutcher and Garrett actually shows that the Rialto-Colton Fault and Barrier H form a fault zone (in congruence with the findings of Gandhok et al), as opposed to a single continuous RC fault and shorter Barrier H, as depicted in the RI/FS. The basic difference between Anderson et al and Dutcher and Garrett is in the location of Barrier H and the structure of the Rialto Colton Fault (see further discussion below regarding the placement of Barrier H).

In addition to the misrepresentation of the Rialto-Colton Fault Zone (RCFZ) and Barrier H, the EPA modeling assumes that the northwestern section of the RCFZ is impervious, which is contrary to the fact that at least four hydrogeological maps of groundwater contours in the northern Chino Basin indicate flow through this section of the RCF Zone.

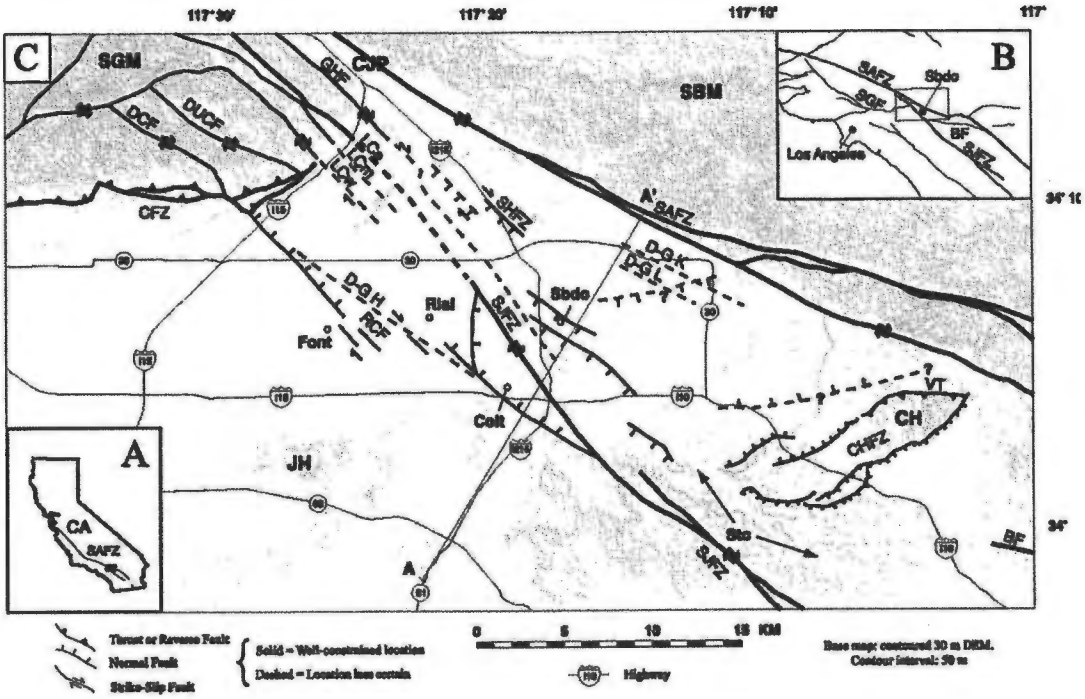

Figure 1. (a) Index map showing study area location within California. (b) Index map showing location of the study area relative to major faults. (c) Topographic map showing San Bernardino basin and vicinity. Fault and geographic feature names are given in Table 4. Sources for fault locations are: RCT'~ SHFZ, graben bounding faults, and dotted faults in the eastern portion of the basin, this study; DCF/DUCF, Morton [1976]; all other faults, Matti and Morton [1993]. Profile labeled A-A' is shown in Figure 6. Normal faults in the center of the map are inferred in the subsurface, and outline the edges of the San Bernardino graben shown in Figure 5a.

Figure 1 -Extracted from Anderson et at and illustrating the location of the Rialto-Colton Fault Zone as determined by Anderson et at (RCF) and Dutcher and Garrett (D-G H)

[3]***Dutcher, L.C., and Garrett, A.A., 1963 [1964], Geologic and hydrologic features of the San Bernardino area, California-with special reference to underflow across the San Jacinto fault: U.S. Geological Survey Water-Supply Paper 1419,114 p***

EPA Response: EPA agrees that the Rialto-Colton Fault (RCF) is more complex than depicted in the figures in the January 2010 RI/FS Report and is not necessarily a continuous impervious barrier to groundwater flow. EPA agrees that the RCF is most likely a fault zone as opposed to a single continuous fault. EPA also agrees that the Anderson paper, which describes gravity, aeromagnetic, and seismicity data and a new conceptual model for the San Bernardino geologic basin, provides useful information on the location and structure of the fault zone in the bedrock underlying the groundwater basin. As noted in the comment, EPA included the paper in the Administrative Record for its proposed remedy.

Although the Anderson, et al (2004) paper presents updated interpretations of the location and nature of the RCF, it does not describe or comment on the impact of the fault system on groundwater movement, or provide information or interpretations that change EPA's understanding of groundwater flow conditions in the RCB.

The location and depiction of the RCF shown on figures in the RI/FS Report and incorporated into EPA's groundwater model were developed by the USGS in prior studies of the RCB. Two relevant USGS reports, published in 1997 and 2001, are included in the Administrative Record. EPA continues to believe that the USGS studies provide a sound basis for EPA's conceptual model of the RCB. EPA does not agree with the statements in the comment that the basic findings of the Anderson paper contradict EPA's RI/FS or that EPA has misrepresented the RCF zone or other geologic features in the RCB. Instead, the findings of the Anderson paper emphasize that the depictions in the figures in EPA's RI/FS Report and in this ROD, and the assumptions made in EPA's groundwater model, reflect many simplifying assumptions, as do most figures and models. Section 3.3.1 of the January 2010 RI/FS Report describes many of the limitations in the modeling effort. Furthermore, the simplifying assumption that the RCF acts as a no-flow-barrier does not likely have a significant impact on the extraction rates needed to hydraulically control groundwater flowing in the areas targeted by the selected remedy. Estimating the extraction rates needed for hydraulic control was the primary use of the groundwater flow model in the RI/FS.

Although the RCF or fault zone is not necessarily a continuous impervious barrier to groundwater flow, and data are relatively sparse in the vicinity of RCF, water levels in the Chino Basin are generally 100 to 150 feet lower than in the RCB, indicating that the fault zone acts as a significant impediment to groundwater flow, particularly in the middle and northern portions of the RCB. EPA has prepared a figure summarizing groundwater elevations in several wells in the Chino Basin and in wells in the RCB during November and December 2009. The figure has been added to the Administrative Record. EPA cannot respond to the comment that "at least four hydrogeological maps of groundwater contours in the northern Chino Basin indicate flow through this section of the RCF Zone," because the comment is unsupported by any data or analysis.

Comment FWC-13. ***Contrary to Best Scientific Knowledge (cont.)***

EPA also failed to use the results obtained from its own multi-port sampling wells that were installed and sampled in 2009. None of the contaminant sampling data from these six EPA wells installed in 2009 have been included in the document, but the results of the well survey in 2009 (excluding EPA well data) are used to plot Figure 1-4. It is not clear why the data from the EPA sample wells were excluded from the RI/FS.

The results of the sampling to date from these EPA wells and others (Goodrich's PW-9; Colton's CPW-16 and CPW-17) provide an important confirmation of the existence of two deep plumes of perchlorate that are separated vertically by more than 100 feet of uncontaminated aquifer. In that the source of the lower plume has not yet been identified, it could be the Goodrich site, but it also could be from the County's former BROCO Facility (EPA ID NO. CAT080022148). Until the sources are known, the efficacy of the proposed remedial plan is uncertain and remedy selection is premature.

EPA Response: See response to GR-2 regarding the results from EPA's multi-port groundwater monitoring wells installed in 2009.

Recent groundwater monitoring results, from January, March, and April 2010 (added to the Administrative Record) provide clear evidence of distinct shallow and deep groundwater plumes at only one location (monitoring well PW-9). This well is located adjacent to an idle, deep

production well (Rialto-06) that may be influencing the vertical distribution of contamination at this location. There is no evidence that the source of contamination observed in the deeper portion of PW-9 is outside of the 160-acre area. Nevertheless, EPA plans additional investigation of the nature and extent of groundwater contamination in the general vicinity of PW9 as part of its evaluation of the need for a second response action to address contaminated groundwater downgradient of the area targeted by the SA OU.

Comment FWC-14. *2. Adjacent Source and Treatment of Perchlorate are Ignored*

The proposed Cleanup Plan does not address perchlorate contamination from the County Mid Valley Sanitary Landfill (MVSL) and the interactions between this proposed remedy and the proposed clean up operations employing Rialto #3 for the County site. It is clear from the modeling results presented in the RI/FS that the impact of the proposed remediation wells and the operation of the Fontana Water Company wells in the Rialto-Colton Basin have a very substantial impact on the remediation planned for the County's Landfill site.

According to Figure A-8 of the RI/FS, included below here as Figure 2, (and all of the other RI/FS figures that address 2004 groundwater flow conditions) the operation of the Fontana Water Company wells, particularly its well F49A treating County VOCs, appear to impact the groundwater streamline patterns. Since these are the conditions that will likely be in place for the foreseeable future this is a very important finding. If the modeling is to be believed (and there is good reason to doubt that it can be, as discussed below), this figure and all the others for 2004 conditions show that the streamline patterns for flow into the County planned remediation well Rialto #3 actually do not derive from the County site and that this well will not remediate the County's contamination. The original figure from which Figure 2 was derived (RI/FS Figure A8) does not plot streamline patterns that pass through the MVSL and so to illustrate the point streamline patterns based on the groundwater contours have been sketched onto the map, together with the location of the MVSL. From this figure it can be seen that no streamlines through the MVSL enter Rialto #3 and furthermore, it appears that the most effective remediation wells for the County site will likely be the five FWC wells F13A/B, F10B/C and F49A. Conclusion: both the EPA and County's proposed treatment systems at Rialto #2 and Rialto #3 may remove some of the perchlorate emanating from the Goodrich site, but little or no perchlorate from the County landfill.

EPA Response: EPA agrees that its proposed cleanup plan does not address perchlorate contamination from the County Mid Valley Sanitary Landfill (MVSL), except that some comingling of contamination between the BF Goodrich Site and the MVSL Site may occur. See response to FWC-15 for additional explanation. The former bunker area is now part of the MVSL.

EPA disagrees with the statement that its proposal does not address "the interactions between this proposed remedy and the proposed clean up operations employing Rialto #3 for the County site." See response to GeoLogic-11 regarding the interactions between EPA's remedy and the Rialto #3 (i.e., Rialto-03) cleanup project. As indicated in that response, operation of the County's pump and treat remedy at Rialto-03 was incorporated into the modeling evaluations in the RI/FS at an assumed constant rate of 1,500 gpm. In its groundwater flow modeling (as

explained in Section 3.3.1 of the January 2010 RI/FS Report), EPA also accounts for operation of wells FWC 49A, F-10A, F-10B, F-13A, and F-13B. EPA agrees with the comment that EPA's remedy will remove "little or no perchlorate from the County landfill."

The majority of the comment addresses the performance of the County's remedy (which includes use of the Rialto-03 well) in capturing groundwater contamination emanating from the County landfill property. This portion of the comment is not directly relevant to the SA OU and does not call into question EPA's selected remedy. The County has performed extensive independent groundwater modeling and technical evaluations to assess the performance of its remedy.

The comment notes that figures in the RI/FS appear to show that operation of some FWC wells impact the groundwater streamline patterns. EPA agrees, and explains the importance of this observation in response to comments FWC-15 and FWC-16.

Comment FWC-15. ***2. Adjacent Source and Treatment of Perchlorate are Ignored (cont.)***

EPA's cleanup plan and maps all assume and depict a separate perchlorate plume emanating from the Goodrich site, completely separate from the plume from the adjacent County landfill. But EPA's modeling refutes this untenable separate plume theory. The streamline patterns and particle paths shown in the model results are quite simply incompatible with two distinct contaminant plumes.

While it is understood that the streamline patterns drawn are representative of "steady state" flow conditions, and that in a situation where the flows are changing year-by-year, particle paths do not always coincide with streamlines, the results plotted in Figure 2 (and the other 2004 remediation scenarios plotted in the RI/FS Appendix A) make it very clear that a proper analysis of the remediation effort must analyze the transient flow conditions and the remediation of the County site in the Cleanup Plan.

EPA Response: Most or all of the groundwater contamination shown in figures in the RI/FS Report and in Figures 11 and 12 in this ROD is believed to originate on the 160-acre area, not the County landfill site. There may be a small area along the southwestern boundary of the area of groundwater contamination shown in Figures 11 and 12 that represents the merging or comingling of contamination originating from the 160-acre area and the County landfill site. The available groundwater quality and water level data do not rule out this possibility. EPA's modeling also indicates that, during some groundwater conditions (e.g., the low water level conditions shown in RI/FS Figure A-8), hydraulic gradients pull groundwater from the B.F. Goodrich Site in the direction of the County landfill contamination (toward the southwest), which may contribute to the comingling of the two areas of contamination.

EPA is uncertain of the basis for the comment that "EPA's cleanup plan and maps all depict a separate perchlorate plume emanating from the Goodrich site, completely separate from the plume from the adjacent County landfill." EPA's cleanup plan and maps do not attempt to depict the area of groundwater contamination associated with the County landfill.

EPA disagrees with the Commenter's assertion that EPA's modeling somehow refutes the separation of the two areas of contamination. EPA does not claim that there is no possible comingling of the two areas of contamination. Still, the extensive water quality data, groundwater level data and groundwater flow modeling results presented in the RI/FS Report

support the interpretation that most, if not all, of the B.F. Goodrich Site groundwater contamination is separate from the County's groundwater contamination.

The extent of comingling, if any, will be considered during remedial design, when final decisions are made on groundwater extraction rates and locations. EPA agrees that the more detailed groundwater flow modeling evaluations planned during the remedial design and construction phases of the SA OU remedy should be based on an analysis of transient groundwater flow and should continue to account for groundwater pumping occurring as part of the County landfill remediation effort.

Comment FWC-16. ***The Plan Fails to Propose Any Remedy for the Perchlorate Contamination Flowing to the Southwest from the Goodrich and County Sites***

The recent data report[4] for the Regional Aquifer southeast of the County site shows that in the area traversed by streamlines to the FWC wells, the Regional Aquifer contains high concentrations of perchlorate. For example, Sampling Well N-9 has a concentration of 79 ppb of perchlorate; Well N-10 has 230 ppb. The streamlines implied by the computed groundwater contours in the Regional Aquifer (plotted in red in Figure 2) show that flow to the FWC wells

[4]Groundwater Monitoring Report Third Quarter Summer 2009 Prepared by Geologic Associates on behalf of County of San Bernardino and submitted to Regional Water Quality Control Board (Santa Ana Region).

passes through this area. These wells also appear to intercept streamlines that pass through the Goodrich site. However, there are few sampling wells at the Goodrich site that extend into the Regional Aquifer so it is not known what concentrations of perchlorate actually exist in this aquifer at this site (see RI/FS Figure 1-5).

The southwesterly flow of perchlorate is further indicated by the streamline directions implied by the groundwater elevation contours plotted in RI/FS Figure 1-4. Figure 3 below has been extracted from EPA Figure 1-4 to emphasize the groundwater contours not plotted between elevation 990 and 995. Streamlines inferred from these groundwater contours (plotted in red in Figure 3) clearly show transfer of perchlorate from the County site to FWC 13A/B, which is confirmed by the high fraction of synthetic perchlorate observed in well F13A during the recent preliminary chlorine and oxygen isotope studies. The plotted streamlines also indicate possible transfer of perchlorate from the Goodrich site to FWC well F49A. (Note that this figure also indicates the correct positions of FWC wells F10B/C, which are incorrectly placed in RI/FS Appendix figures, as discussed in more detail below.)

Note also in Figure 3 that the measured groundwater contours, and their associated streamlines that transport perchlorate to the FWC wells FI3A1B, F10B/C and F49A (the purple squares on the map), agree in general form to those streamlines and contours in the same area shown in Figure 2.

The conclusion that perchlorate in FWC's wells derives from the County and possibly Goodrich sites is also supported by prior groundwater contours prepared by USGS, the studies by Anderson et al. and Gandhok et al, the initial isotope study of perchlorate in FWC wells, and a wealth of other data discussed in my prior reports to EPA beginning in October 2008. Unless this conclusion is refuted by the new perchlorate isotope and hydrogeologic studies now being conducted by the ESTCP and USGS, any perchlorate remediation plan for the Goodrich and/or County sites should also remediate perchlorate contamination in FWC's wells.

FIGURE 2 -Extracted from RI/FS Figure A-8 and modified to show Goodrich and County Landfill sites and correct positions of Wells F10B/C. Schematic streamlines added in red.

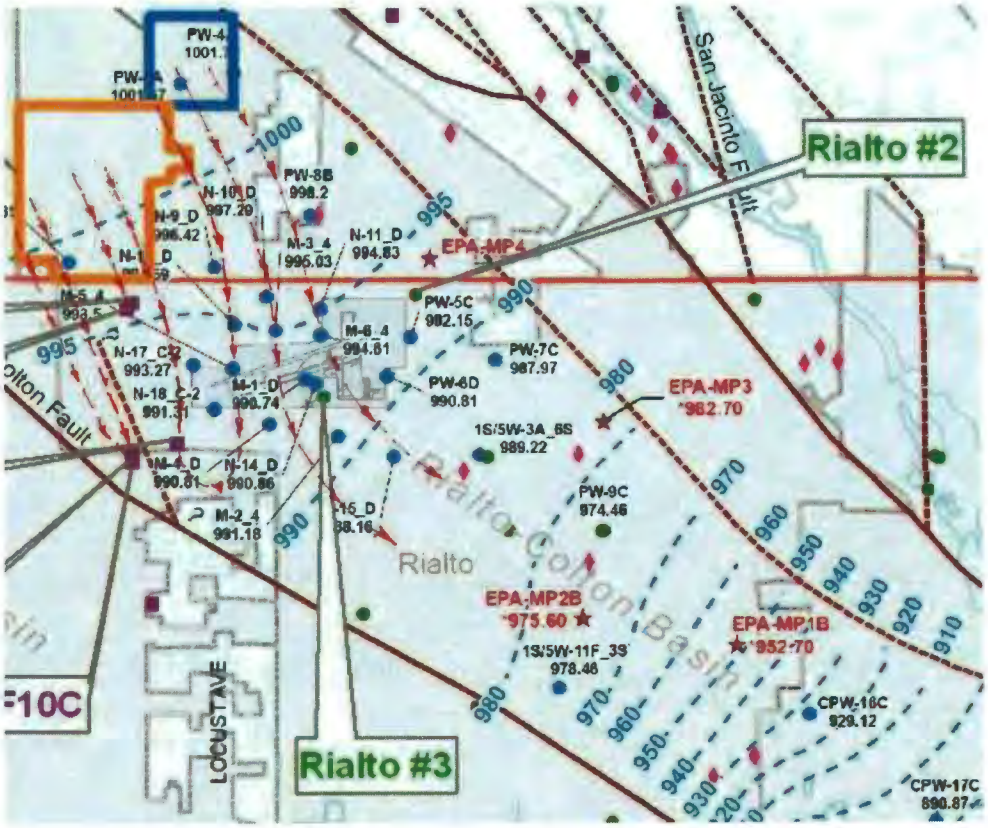

FIGURE 3 -Extracted from RI/FS Figure 1-4. Schematic streamlines added in red.

EPA Response: Available water quality and water level data do not support the conclusion that there is southwesterly migration of perchlorate from the 160-Area Area to FWC's wells in the western portion of the RCB. The streamlines depicted in Figure A-8 from the January 2010 RI/FS Report do not represent past or expected future conditions. They illustrate the potential movement of potentially contaminated groundwater in the extreme case that groundwater conditions observed in 2004 continued indefinitely. As stated in Section 3.3.1 of the RI/FS Report, the modeling results "should be interpreted carefully because the actual flow field varies from year to year and particular caution should be exercised in interpreting results when the selected flow field reflects extremely wet or dry years or other transient conditions."

Furthermore, EPA has carefully reviewed the figures and data provided with or referenced in the comment and does not find any evidence to support a conclusion that perchlorate contamination from the B.F. Goodrich Site has impacted FWC's wells. The streamlines added to EPA's Figures A-8 and 1-4 (included as Figures 2 and 3 in the comment) inappropriately extrapolate from the extreme conditions shown in Figure A-8 or the snapshot shown in Figure 1-4. In addition, some of the streamlines do not accurately reflect and are not implied by the interpreted contours shown in the figures.

The comment states that "there are few sampling wells at the Goodrich site that extend into the Regional Aquifer so it is not known what concentrations of perchlorate actually exist in this aquifer at this site (see RI/FS Figure 1-5)." EPA is uncertain about the meaning of this comment. A review of Figure 1-5 in the RI/FS Report shows ten monitoring wells or piezometers extending into the Regional Aquifer. As noted in comments GR-2 and FWC-13, EPA installed six additional wells in 2009, all screened in the Regional Aquifer, not shown in the figure.

See the response to comment FWC-18 regarding the possible mis-location of FWC wells 10B/C.

The comment states that "prior groundwater contours prepared by USGS, the studies by Anderson et al. and Gandhok et al, the initial isotope study of perchlorate in FWC wells, and a wealth of other data" support the conclusion that perchlorate in FWC's wells may derive from the B.F. Goodrich Site. EPA has reviewed historical groundwater contours prepared by USGS (such as those included in the 1/1/97 report by Woolfenden et al, which are included in the Administrative Record) but has not found evidence to support the claim that perchlorate contamination from the B.F. Goodrich Site has impacted FWC's wells. Although not submitted as part of the comment, EPA has also reviewed isotope measurements referenced in the comment and similarly concluded that they do not provide evidence that perchlorate contamination from the B.F. Goodrich Site has impacted FWC's wells. (See the March 27, 2009, letter from Wayne Praskins to John List, included in the Administrative Record, for additional detail.) EPA also does not concur with the claim that the studies by Anderson et al. and Gandhok et al support the conclusion that perchlorate in FWC's wells may derive from the B.F. Goodrich Site. Neither of these studies provides information that is directly relevant to the movement of perchlorate contaminated groundwater from the 160-acre area. EPA is not clear what is meant by "a wealth of other data."

Portions of this comment are directed at the County Site and are not relevant to the evaluation and selection of a remedy for the SA OU (e.g., the source of contamination at FWC wells 13A/B).

The *Groundwater Monitoring Report Third Quarter Summer 2009* referenced in the comment has been added to the Administrative Record.

Comment FWC-17. ***A Large Fraction of Perchlorate Will Remain in the Ground***

The proposed Cleanup Plan relies upon two interception wells Rialto #2 and a new well EW-I, located to the west of Rialto #2, as shown in RI/FS Figure 3-6. However, referring to RI/FS Figure 1-5, included here as Figure 4, it is clear that a huge volume of perchlorate contaminated groundwater lies hydrogeologically downstream of Rialto #2 and that the Cleanup Plan will have no impact on the removal of this polluted groundwater flow stream. Concentrations of perchlorate in this downstream plume exceed 300 ppb of perchlorate (Rialto#6). The Cleanup Plan should address how this plume of perchlorate is going to be intercepted and treated.

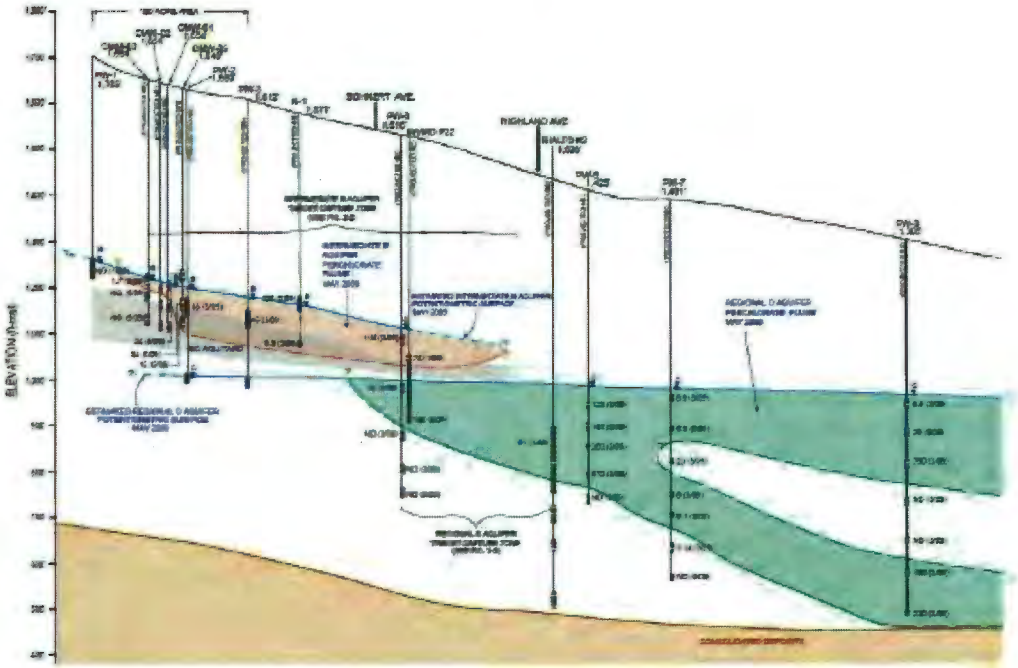

FIGURE 4 -Extracted from RI/FS Figure 1-5 to show extent of plume east of Rialto #2.

↳EPA Response: The SA OU remedy is an interim remedy intended to capture groundwater contamination migrating away from the 160-acre area source area as a first step towards complete remediation of the B.F. Goodrich Site contamination. EPA understands that there is substantial groundwater contamination downgradient of the SA OU target area, as reflected in the TCE and perchlorate levels at wells PW-5 and PW-9, in particular. EPA expects that additional actions will be needed to address this contamination, as explained in Sections 1.61 and 2.1.2 of the RI/FS Report, EPA's January 2010 Proposed Plan, and other parts of this ROD.

The testing and evaluation needed to develop a cleanup plan for the downgradient portions of the Site are underway but have not yet been completed. Rather than wait until all testing at the Site has been completed, EPA chose to divide the Site into two parts, and begin cleanup of the part where enough testing and analysis has been completed to determine the best way to carry out the cleanup (i.e., the SA OU). EPA expects to develop a second cleanup plan for the remaining portion of the Site after sufficient testing and analysis have been completed.

Comment FWC-18. ***Reliance on a Demonstrably False Groundwater Model***

The model employed in the RI/FS is a slightly adjusted version of the Geologic Associates ground water model of the Rialto-Colton Basin. It presumes the existence (for which there is scant evidence) of a shortened section of the Dutcher and Garrett Barrier H (interpreted as an impermeable branch off the RCF into the Rialto-Colton Basin), and it assumes an impervious and contiguous RCF fault, contrary to the findings of Anderson et al. and Gandhok et al (see §1 above). The most important failings of the modeling are:

(i) The presumed position of Barrier H and the locations of FWC wells F10B and F10C are incorrectly positioned in the groundwater model. Figure 5 below is an overlay map created by Flow Science with a GIS system using Figures 1-4 and A-8 from the RI/FS. In the lower left hand comer of this figure two different locations for Barrier H can be seen. One shown as a dark blue solid line, as in Figure A-8, and the other a dotted light brown line, as in Figure 1-4. Wells F10B/C are not explicitly called out in Figure A-8, but their location is implied by the apex of the green particle paths. In Figure 1-4 these two wells are shown as overlapping light purple squares. Flow Science has checked the actual locations of Wells F10B/C and has marked these locations on Figure 5; they coincide with the locations shown in RI/FS Figure 1-4. The fact that Barrier H and the Wells F10B/C are apparently mislocated in the groundwater model will obviously change the computed groundwater contours and streamlines; how significant the change will be is difficult to assess without rerunning the model with the correct geometrical data.

Perhaps even more important than the mislocation of Barrier H is the presumption of its shape and impermeability. Given the uncertainty associated with both the location and structure of this "barrier" it would have been entirely appropriate to have performed model sensitivity analyses that omitted the barrier altogether.

FIGURE 5 --Sections of RI/FS Figures 1-4 and A-8 in an overlay showing misplacement of Wells F10B/C and Barrier H. Figure also includes County and BROCO sites.

↳<u>EPA Response</u>: If FWC Wells F-10B and F-10C, and Barrier H, are slightly misplaced in the groundwater model as is implied on Figure 5, EPA does not expect the change in location to

have a significant impact on the remedy extraction rates or to change the relative ranking of the remedial alternatives. Nevertheless, EPA will ensure that the wells are correctly located when additional modeling simulations are conducted to refine the groundwater extraction rates and locations during remedial design.

Regardless of whether Barrier H is incorporated into the model as an offshoot of the RCF (as is currently implied in the model) or as part of a broader RCF zone as may be inferred by the Anderson et al (2004) findings, it provides a reasonable reproduction of the difference in groundwater elevations on opposite sides of the barrier. Performing additional simulations without the barrier is not a critical part of model sensitivity analyses in support of the SA OU. The groundwater elevations measured in Wells F-10B and F-10C are approximately 100 feet lower than those measured in nearby wells in the RCB (e.g., F-49A). However, EPA agrees that additional modeling should be conducted with a more sophisticated groundwater flow model during the remedial design phase (prior to remedy implementation) to more closely evaluate groundwater flow conditions in this part of the RCB.

Comment FWC-19. ***There is a failure to impose upstream boundary conditions that show a rapid rising and falling of the Intermediate Aquifer water table in response to major stormwater flows in Lytle Creek. Field work at the Goodrich site and County sites has shown that these very rapid rises in water table elevation are responsible for major influxes of perchlorate into the groundwater system through flushing of the vadose zone (see Figures 6a and 6b for the Goodrich site below; similar charts exist for the County site). Lytle Creek had exceptionally high flows in late 2004 and early 2005, which are reflected in the changing water table elevations at the Goodrich site later in 2005. The USGS[5] has also noted the extreme variability in the inflows to the Rialto-Colton Basin from the Lytle Basin (see Figure 40 of the USGS WRIR 00-4243).***

↳EPA Response: EPA agrees that water levels and perchlorate concentrations in the Intermediate Aquifer can vary significantly from year to year. During the RI/FS, EPA reviewed the groundwater elevation and perchlorate data included in the comment and included these data in the Administrative Record (see the monthly progress reports submitted by Geosyntec consultants).

EPA disagrees that it has failed "to impose boundary conditions that show a rapid rising and falling of the Intermediate Aquifer water table in response to major stormwater flows in Lytle Creek." The basis for this claim is unclear. The boundary fluxes assumed in the model do change dramatically each year (the model time steps are one-year increments) resulting in significant fluctuations in simulated water levels in the Intermediate Aquifer.

[5] *USGS Water Resources Investigation Report 00-4243, 2001.*

Comment FWC-20. ***The attempted validation of the modeling as represented by RI/FS Figure A-6 (see Figure 7 below) shows a poor correlation with measured groundwater surface elevations in City of Rialto wells with elevation discrepancies of as much as 70 ft and also indicating groundwater slopes during the 1980's that are not present in the well data. In fact, the RI/FS concedes that the model even indicated flows out of the northwest boundary of the modeling region in the late 1980's and 1990's -basically saying that groundwater ran uphill! (See RI/FS Figure A-7a included here as Figure 8.)***

EPA Response: The RI/FS Report acknowledges key limitations and uncertainties associated with the groundwater flow model used to evaluate groundwater extraction rates needed to achieve the remedial action objectives of the SA OU (see page 3-10). In the RI/FS Report, EPA clearly identifies the model limitations referred to in the comment. EPA believes that the model used during the RI/FS was adequate to support the evaluation of remedial alternatives and the selection of a remedy, including estimation of the approximate remedial pumping rates required for hydraulic capture of the targeted areas of contamination during varying groundwater conditions. EPA is confident that the groundwater extraction and treatment rate for in the selected remedy will satisfy the RAOs and performance criteria, with minor changes to the rate possible during remedial design.

Comment FWC-21. ***It is acknowledged that the modeling does not show any transfer of perchlorate from the Intermediate Aquifer to the Regional Aquifer: "Simulations of downward movement through the Intermediate Aquifer with the larger target area provided results that may not be representative of actual conditions. The particles are shown either moving into the B Aquitard, or they become stranded in portions of the Intermediate Aquifer where the saturated thickness was limited during low to intermediate water level conditions. These simulations assume that the specified water levels continue unchanged for a period of tens or hundreds of 'years."***

However, as shown in the field data from the Goodrich site (Figures 6a and 6b) the water levels do not remain constant, and it is these changing water levels that give rise to the pulses of high concentration perchlorate in the groundwater. In the absence of any transfer from the Intermediate to the Regional Aquifer, where do the high concentrations in the Regional Aquifer come from?

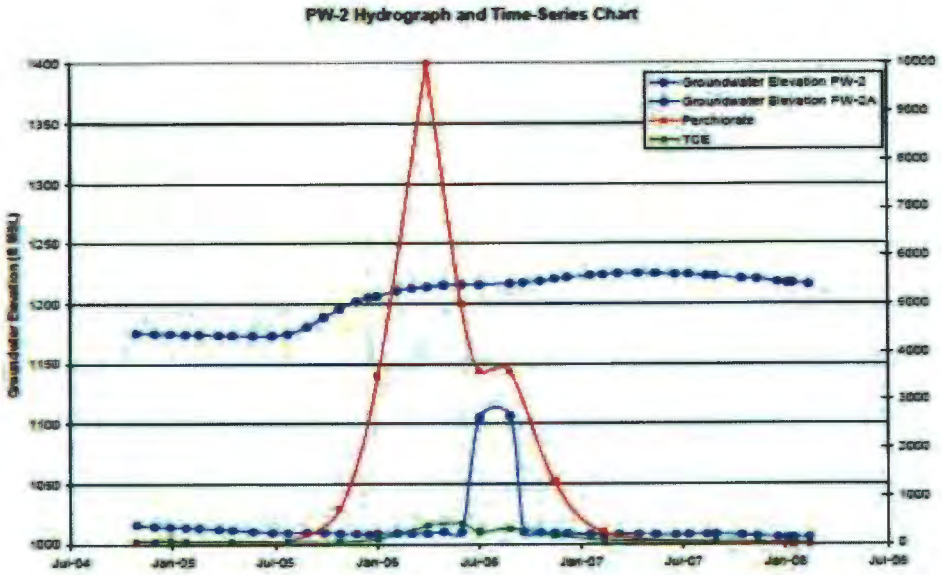

FIGURE 6a -Groundwater elevation and perchlorate in sample well PW-2 Goodrich site.
Source: Goodrich Corporation Progress Report for the Month of February 2008
160-Acre Parcel, Rialto, California
Geosyntec Project No. HA 0938

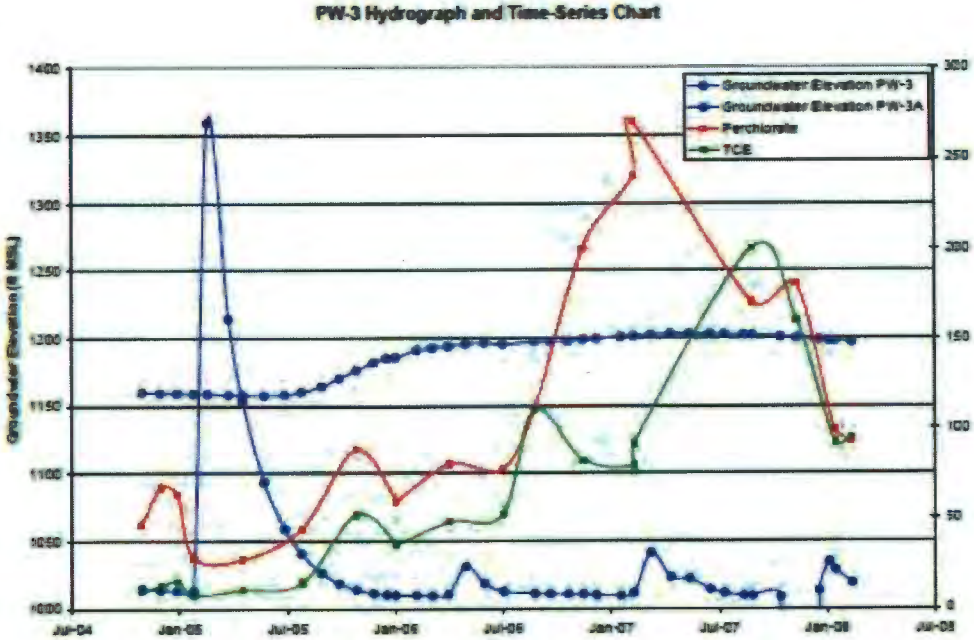

FIGURE 6b-Groundwater elevation and perchlorate in sample well PW-3 Goodrich site.
Source:
Goodrich Corporation Progress Report for the Month of February 2008
160-Acre Parcel, Rialto, California
Geosyntec Project No. HA 0938

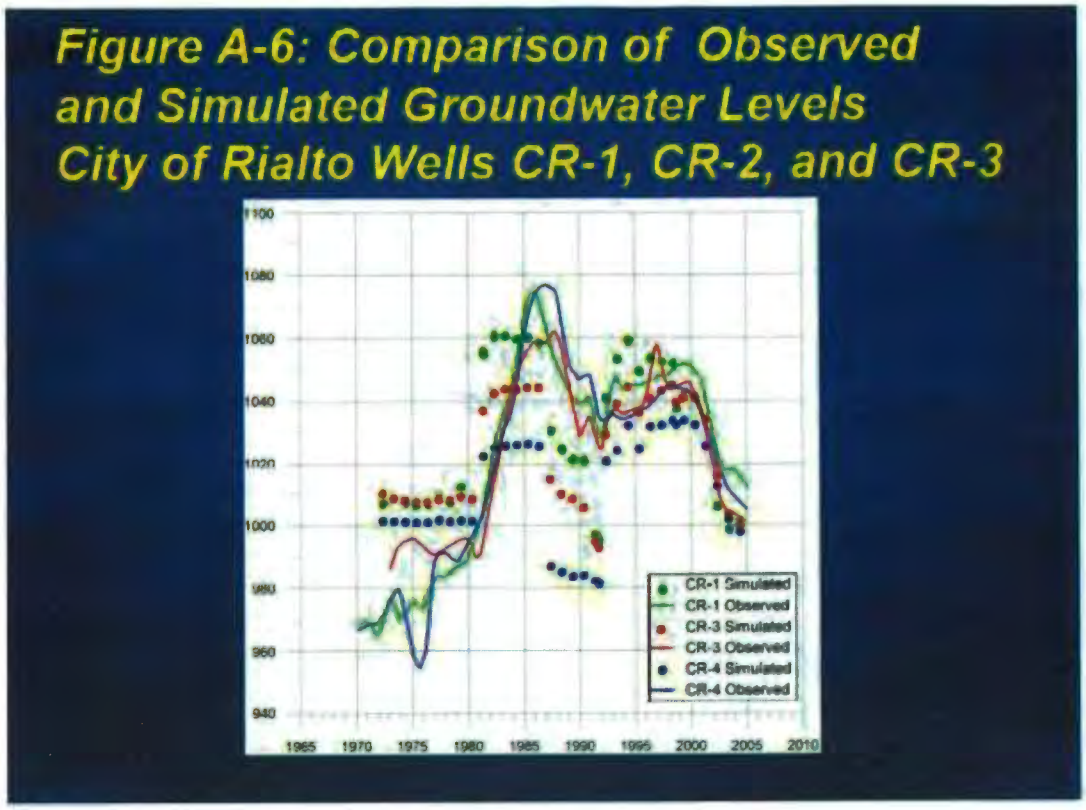

FIGURE 7 -Validation of the model versus City of Rialto wells.

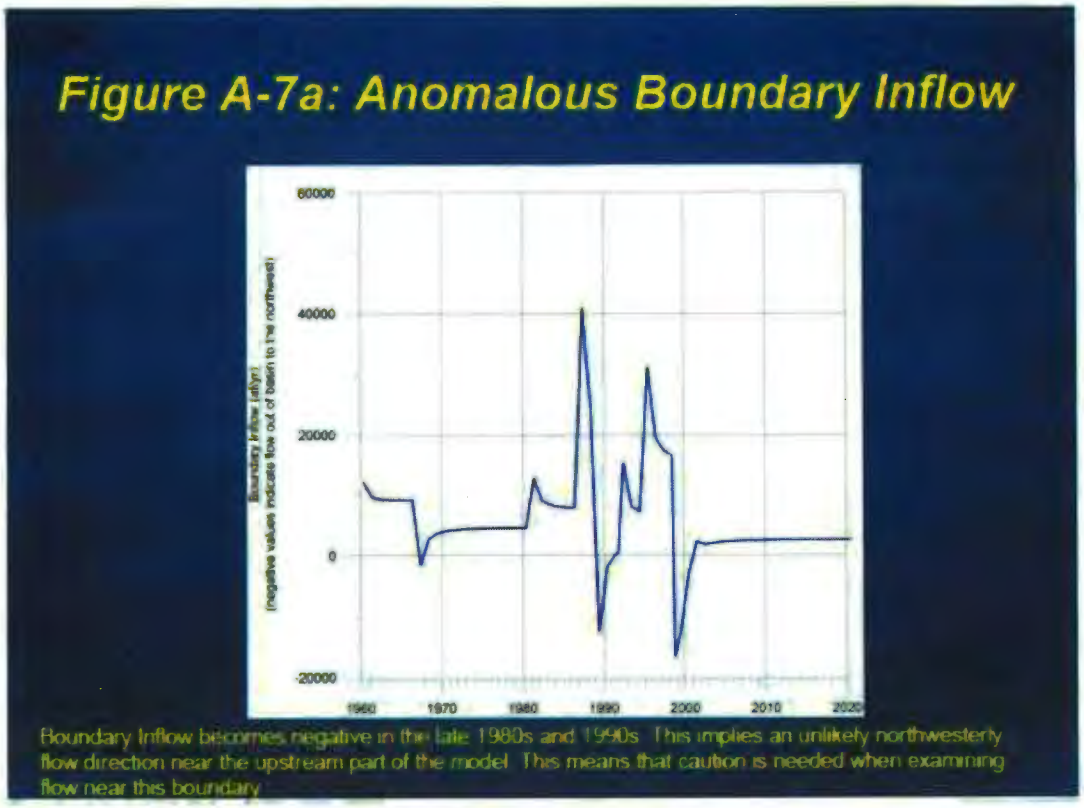

FIGURE 8 -Extracted from RI/FS Figure A-7a showing negative boundary flows at the "upstream" northwest boundary to the model.

↳EPA Response: The comment appears to misinterpret the RI/FS Report in stating that the groundwater flow model does not show any transfer of perchlorate from the Intermediate Aquifer to the Regional Aquifer, and in posing the question "where do the high concentrations in the Regional Aquifer come from?" The model simulates the primary mechanism believed to be responsible for the transfer of groundwater contaminated with perchlorate and other COCs from the Intermediate Aquifer into the Regional Aquifer. That is the movement of groundwater from the downgradient end of the Intermediate Aquifer (where the Intermediate and Regional Aquifers merge) into the Regional Aquifer.

The statement from the RI/FS Report quoted in the comment ("Simulation of downward movement…") refers to limitations in the proper interpretation of modeling simulations that assume that relatively dry conditions continue unchanged for tens or hundreds of years. Nevertheless, it is notable that the model suggests very slow transfer rates, consistent with the several hundred foot head difference between the two aquifers in the vicinity of the 160-acre area.

Comment FWC-22. ***Misrepresentations in Figure 2 of Public Notice of Comment***

Figure 2 of the document entitled "EPA Seeks Public Comment on Groundwater Cleanup Plan" completely misrepresents the extent of the contamination in the Rialto-Colton and Chino Basins. The legend to this figure: " Figure 2. Approximate extent of perchlorate and /or trichloroethene (TCE) contamination", and the depiction of the contaminated ground water plume, have entirely omitted the contributions to the groundwater contamination emanating from the County Landfill and BROC sites. Furthermore, the depiction of a single plume streaming to the southeast is contrary to EPA's own modeling results that show, in all of the figures in Appendix A for 2004 conditions, that such a uniformly streaming plume cannot be present. The figures also depict the Rialto-Colton Fault as a single entity, when in fact geological evidence developed by the USGS (discussed in Section 1 above) has shown that the fault is anything but contiguous and actually occupies a zone of at least a kilometer in width.

↳EPA Response: Figure 2 of EPA's Proposed Plan is not intended to illustrate contamination throughout the Rialto-Colton and Chino Basins. Figure 2 is intended to illustrate the approximate extent of contamination associated with the B.F. Goodrich Site. The comment correctly notes that the figure omits the contamination associated solely with the County's landfill property (which is not part of the Site).

See FWC-12 for a response to the comment that "the depiction of a single plume streaming to the southeast is contrary to EPA's own modeling results" and the comment regarding the depiction of the RCF.

Comment FWC-23. ***SUMMARY AND CONCLUSIONS***

Before EPA spends tens of millions of dollars on a remedy that is incomplete and premature, it should wait for and carefully consider the results of the comprehensive studies of groundwater hydrology and isotopes being performed under the aegis of the ESTCP by Shaw Environmental and the USGS. These studies will provide the information needed to develop the most effective cleanup plan for perchlorate generated from the two adjacent sites in the Rialto-Colton Basin.

↳EPA Response: As noted above, the SA OU remedy is an interim remedy intended to hydraulically control contaminated groundwater moving away from the source area where the highest levels of groundwater contamination have been detected. EPA believes that it has adequately explained the basis for the preferred alternative described in the January 2010 Proposed Plan and the remedy selected in this Record of Decision. EPA's proposal and selected remedy are based on the January 25, 2010, RI/FS Report and other documents included in the Administrative Record.

EPA does not agree with the statement that it should wait to implement this initial interim remedy until the ongoing studies are completed (another one to two years). Adequate data are currently available in the SA OU to evaluate and select an interim remedy. EPA concurs that the supplemental studies of groundwater hydrology and isotopic signatures referenced in the comment are likely to provide data that will be useful in the selection of a remedy for the downgradient portions of the Site, but they are not directly relevant to the SA OU area.

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Appendix C

Appendix C

List of Settling Ability to Pay Defendants and Payment Amounts

1) **Broco, Inc.; and J. S. Brower & Associates, Inc.**
   Fifty Thousand Dollars ($50,000.00)

Appendix D

Appendix D

List of Settling Cashout Defendants and Payment Amounts

1) **American Promotional Events, Inc. – West; and American Promotional Events, Inc.**

Two Million Five Hundred Thousand Dollars ($2,500,000.00)

2) **The Ensign-Bickford Company; Ensign-Bickford Industries, Inc.; and Ordnance Associates**

One Million Two Hundred Fifty Thousand Dollars ($1,250,000.00)

3) **Raytheon, in its own capacity and as successor by merger to HE Holdings, Inc., formerly known as Hughes Aircraft Company and as alleged successor to the Missile Division of General Dynamics; and Raytheon Missile Systems Company, in its own capacity and formerly known as Hughes Missile Systems Company.**

One Million Dollars ($1,000,000.00)

4) **Whittaker Corporation, in its own capacity; as successor by merger to Tasker Industries, Inc.; and as alleged successor in interest to Delta T., Inc., formerly known as Amex Products, Inc. a.k.a. American Explosives Company;**

Three Million One Hundred Fifty Thousand Dollars ($3,150,000.00)

Appendix E

Appendix E

List of San Bernardino Settling Parties

1. COUNTY OF SAN BERNARDINO
2. ROBERTSON'S READY MIX, INC.
3. THE SCHULZ PARTIES
   a. EDWARD STOUT
   b. ELIZABETH RODRIGUEZ
   c. JOHN CALLAGY
   d. JOHN CALLAGY, AS TRUSTEE OF THE FREDERICKSEN CHILDREN'S TRUST UNDER TRUST AGREEMENT DATED FEB. 20, 1985
   e. LINDA FREDERICKSEN
   f. LINDA FREDERICKSEN, AS TRUSTEE OF THE WALTER M. POINTON TRUST DATED NOV. 19, 1991
   g. LINDA FREDERICKSEN, AS TRUSTEE OF MICHELLE ANN POINTON TRUST UNDER TRUST AGREEMENT DATED FEB. 15, 1985
   h. MARY MITCHELL (now known as MARY CALLAGY)
   i. JEANINE ELZIE
   j. STEPHEN CALLAGY
4. THE ZAMBELLI PARTIES

   ZAMBELLI FIREWORKS MANUFACTURING COMPANY, INC., ZAMBELLI FIREWORKS COMPANY aka ZAMBELLI FIREWORKS INTERNATIONALE, and ZAMBELLI FIREWORKS MANUFACTURING COMPANY

Appendix F

Appendix F

STATEMENT OF WORK
for
Remedial Design and Remedial Action
(RD/RA)

SOURCE AREA OPERABLE UNIT
B.F. GOODRICH SUPERFUND SITE

SAN BERNARDINO COUNTY, CALIFORNIA

US EPA Region 9

October 10, 2012

Appendix F

Statement of Work for Remedial Design/Remedial Action
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Appendix F

Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CD	Consent Decree
CDPH	California Department of Public Health
CFR	Code of Federal Regulations
CQA	Construction Quality Assurance (Plan)
CSI	Construction Specification Institute
DQO	Data Quality Objective
DTSC	CA Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
HASP	Health and Safety Plan
SAOU	Source Area Operable Unit
O&M	Operation and Maintenance
OU	Operable Unit
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
RA	Remedial Action
RAOs	Remedial Action Objectives
RD	Remedial Design
RD/RA	Remedial Design and Remedial Action
RDI	Remedial Design Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SOW	Statement of Work
TCE	Trichloroethylene
VOC	Volatile Organic Compound
Water Board	Regional Water Quality Control Board

Appendix F

STATEMENT OF WORK FOR
REMEDIAL DESIGN AND REMEDIAL ACTION
Source Area Operable Unit
B.F. Goodrich Superfund Site

1. Introduction

1.1. Purpose

This Statement of Work ("SOW") sets forth the activities to be performed by the Settling Work Defendant (Emhart Industries, Inc.) pursuant to the Consent Decree to design, construct, operate, maintain, monitor, and evaluate the remedial action described in the September 30, 2010, Source Area Operable Unit ("SAOU") Record of Decision for the B.F. Goodrich Superfund Site (the "2010 ROD") ("CD"). The Settling Work Defendant shall furnish all necessary and appropriate personnel, materials, and services needed for, or incidental to, performing and completing the remedial action required by the CD as described and limited herein.

Remedial design ("RD") includes the development of plans and specifications, general provisions, and specific requirements necessary to implement the remedy selected in the 2010 ROD, including compliance with the performance standards defined below in Section 3.4 of this SOW ("Performance Standards"). Remedial Action ("RA") shall mean all activities Settling Work Defendant is required to perform under the CD as specified in this SOW, and the final Remedial Design Work Plan approved by EPA to implement the 2010 ROD, until the Performance Standards are met, excluding performance of the Remedial Design and the activities required under Section XXIV (Retention of Records) of the CD. Operation & Maintenance ("O&M") refers to most post-startup activities, including monitoring and evaluation of the remedy.

1.2. EPA Oversight and Review and State Review

EPA will provide oversight of the Settling Work Defendant's activities. EPA will review and approve deliverables in accordance with Section XI of the CD. The State may also, at their discretion, review deliverables. Deliverables will either be approved or disapproved by EPA (except for the Health and Safety Plans, which will be reviewed by EPA but neither approved nor disapproved). If EPA disapproves the deliverable and requests modifications, the Settling Work Defendant shall revise the deliverable and resubmit it to EPA and the State, as provided in Section XI of the CD. After Settling Work Defendant's receipt of EPA comments, if any, on a draft document, Settling Work Defendant shall submit for EPA and State review a revised document within 14 days of receipt of such comments, unless specified otherwise in Attachment

2 or in writing by EPA.

EPA will review deliverables to assess the likelihood that the Work will achieve the Remedial Action Objectives, Performance Standards, other ARARs, and other requirements set forth in the 2010 ROD, the CD and this SOW. Notwithstanding any action by EPA or the State, Settling Work Defendant remains fully responsible for satisfying the provisions and requirements of the 2010 ROD, the CD, and this SOW. Nothing in the CD, this SOW, or EPA's approval of the RD, RA, or any other submission, shall be deemed to constitute a warranty or representation of any kind by EPA or the State that full performance of the RD and RA will achieve the Performance Standards or other requirements. Settling Work Defendant's compliance with submissions approved by EPA does not foreclose EPA from seeking additional work to achieve Performance Standards or other requirements as provided for in the CD.

1.3. Communication between EPA, Settling Work Defendant, and State Agencies

The primary EPA contact for activities to be conducted pursuant to this SOW is the EPA Project Coordinator, Wayne Praskins, praskins.wayne@epa.gov.

The alternate contact is Richard Hiett, Chief of the California Site Cleanup Section 3, hiett.richard@epa.gov.

The California Department of Toxic Substances Control ("DTSC") contact is Rafat Abbasi, Senior Project Manager, rabbasi@dtsc.ca.gov.

The Regional Water Quality Control Board ("Water Board") contact is Kurt Berchtold, Executive Officer, kberchtold@waterboards.ca.gov.

1.4. Contractor Personnel and Qualifications

As required in Section VI of the CD, and in accordance with the schedule included as Attachment 2, Settling Work Defendant shall notify EPA and the State of the name, title, and qualifications of the Supervising Contractor that Settling Work Defendant proposes to retain to perform the Work, and a copy of the proposed contractor's Quality Management Plan ("QMP"). EPA will issue a notice of disapproval or an authorization to proceed regarding hiring of the proposed contractor.

1.5. Reporting to EPA and the State

1.5.1. Monthly Progress Report

The Settling Work Defendant shall prepare and submit written Monthly Progress Reports as required by Section X of the CD. The progress reports shall: (a) describe deliverables

submitted and actions taken during the previous month on each active task required by this SOW or the approved RD or RA Work Plans; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Work Defendant or its contractors or agents in the previous month; (c) describe problems arising since the previous report and steps planned or underway to mitigate the problems; (d) describe actions scheduled for the next two months; (e) describe any anticipated changes in the schedule; (f) describe the nature of, duration of, and response to any noncompliance with Performance Standards or other requirements; and (g) describe any community relations activities completed during the previous month or planned for the next two months. Progress reports are due by the tenth day of every month.

1.5.2. Annual Report

After EPA issues a Certification of Completion of Construction of the Remedial Action, Settling Work Defendant shall prepare and submit no later than March 30 of each year an Annual Report that provides information generated by implementation of the Operation and Maintenance Plan and Compliance Monitoring Plan described in Section 4.3 of this SOW.

1.5.3. Progress Meetings and Documentation of Critical Decisions

Settling Work Defendant shall consult with EPA during the design and construction process as appropriate. Any critical decisions made in meetings or conversations with EPA representatives shall be documented in a written submittal submitted by Settling Work Defendant to EPA and, if appropriate, the State, within five (5) days of the discussion. The submittal shall document the decision and the rationale for the decision.

1.5.4. Notification of Non-Compliance

Settling Work Defendant shall notify EPA of any non-compliance or potential non-compliance with Performance Standards.

1.6. EPA Guidance and Reference Materials

Settling Work Defendant shall consider relevant guidance, directives, and policies issued by EPA for conducting RD/RA and the activities described herein. A list of selected guidance and reference material is included as Attachment 3.

1.7. Modifications

If EPA determines that modifications to the Work are necessary to achieve and maintain the Performance Standards specified in Section 3.4 of this SOW, EPA may require that such modifications be incorporated into the appropriate work plans developed pursuant to this SOW,

as set forth in Section VI of the CD.

2. B. F. Goodrich Superfund Site and Source Area Operable Unit

2.1. B. F. Goodrich Superfund Site

The B. F. Goodrich Superfund Site ("Site") is located in San Bernardino County, California, approximately 60 miles east of the city of Los Angeles. The site was added to the National Priorities List in September 2009.

The Comprehensive Environmental Response, Compensation, and Liability Information System ("CERCLIS") Identification Number for the Site is CAN000905945.

The Site includes a 160-Acre Area in Rialto, California where volatile organic compounds ("VOCs") and perchlorate have contaminated soil and groundwater, and all areas where contamination from the 160-Acre Area has come to be located, including, but not limited to, groundwater contamination downgradient of the 160-Acre Area. The 160-Acre Area is bounded by West Casa Grande Drive on the north, Locust Avenue on the east, Alder Avenue on the west, and an extension of Summit Avenue on the south.

Most or all of the Site is located in the Rialto-Colton Groundwater Basin, an important source of drinking water to residents and businesses in the cities of Rialto, Colton, and Fontana.

The 160-Acre Area is part of a larger area acquired by the United States Army in 1942 to develop an inspection, consolidation, and storage facility for rail cars transporting ordnance to the Port of Los Angeles, known as the Rialto Ammunition Backup Storage Point ("RABSP"). Since the United States sold the RABSP in 1946, portions of the area were thereafter used by defense contractors, fireworks manufacturers, and other businesses that used perchlorate salts and/or solvents in their manufacturing processes or products. The County of San Bernardino (the "County") also has used, since 1958, a portion of the RABSP as the Mid-Valley Sanitary Landfill ("MVSL"), which is located immediately west and south of the 160-Acre Area. In 1956 and 1957, West Coast Loading Corporation manufactured and tested two products, photoflash flares and "ground-burst simulators," containing potassium perchlorate. From about 1957 to 1962, B.F. Goodrich Corporation conducted research, development, testing, and production of solid-fuel rocket propellant containing ammonium perchlorate, and used solvents in the manufacturing process. Since the 1960s, the 160-Acre Area has been used by a number of companies that manufactured or sold pyrotechnics, including Pyrotronics, Pyro Spectaculars, and American Promotional Events.

2.2 Source Area Operable Unit

The SAOU is the first OU at the B.F. Goodrich Site. The SAOU is intended to limit further spread of the most contaminated groundwater at the Site, which extends from the 160-Acre Area

about 1 ½ miles to the southeast. The targeted area includes the portion of the aquifer where perchlorate has been detected in groundwater at a concentration as high as 10,000 µg/L (1,600 times the MCL), and trichloroethylene ("TCE") has been detected in groundwater at a concentration as high as 1,500 µg/L (300 times the MCL). Carbon tetrachloride has also been detected above its drinking water standard of 0.5 µg/L.

The area of contaminated groundwater targeted for hydraulic control (the "Target Area") is defined as the portion of the Intermediate Aquifer contaminated with perchlorate or TCE above MCLs, the underlying portion of the Regional Aquifer contaminated with perchlorate or TCE above MCLs, and an additional portion of the Regional Aquifer extending downgradient to where the Intermediate and Regional aquifers merge as described in Section 2.4.8 (Area and Depth Targeted in this Operable Unit) of the 2010 ROD.

3. Description of Remedy/ Performance Standards

3.1 Remedial Action Objectives

The objectives of this remedial action, as described in the Record of Decision, are to:

- Protect water supply wells and groundwater resources downgradient of the Target Area by limiting the spread of contaminated groundwater from the 160-acre area; and

- Remove the contaminants from the groundwater in the Target Area.

3.2. Remedy Components To Be Performed by Settling Work Defendant

3.2.1. The 2010 ROD Remedy Components

EPA's selected remedy is a groundwater pump and treat system intended to intercept (i.e., "hydraulically control") and remove contaminated groundwater in the Target Area spreading from the 160-acre source area. The 160-Acre Area is where most or all of the contaminants in the Target Area entered the groundwater and testing has identified the highest levels of groundwater contamination.

As described in the 2010 ROD, the remedy includes the construction and operation of groundwater extraction wells at the downgradient end of or downgradient of the Target Area to extract contaminated water; liquid-phase granular activated carbon (LGAC) or other water treatment systems to remove TCE and other VOCs from the extracted groundwater; ion exchange or other water treatment systems to remove perchlorate from the extracted groundwater; pipelines and pumps to convey the treated water from the treatment plant to one or more local water utilities for distribution to the utility's customers as drinking water supply (or to reinjection wells to replenish the aquifer if

agreements cannot be reached with the water utilities in a reasonable period of time to distribute the water); and a groundwater monitoring program to evaluate the effectiveness of the remedy. Preliminary computer modeling conducted during the RI/FS estimated that up to 3,200 gpm of contaminated groundwater would need to be extracted or treated to satisfy the performance criteria during all anticipated groundwater conditions, with an estimated long-term average pumping rate from the remedy extraction wells of 1,840 gpm and an estimated typical flow of 1,500 gpm. Subsequent modeling by EPA has suggested that a higher typical flow rate may be necessary. Settling Work Defendant shall conduct additional groundwater flow modeling to provide the appropriate basis for design, specifically as to the extraction well locations and their flow rates.

3.2.2. Combining 2010 ROD Remedy with Existing County Remedy

In 2006, the County commenced operation of an extraction and treatment system to address perchlorate and TCE contamination in the groundwater under Unit 5 of the MVSL and adjacent areas ("County's Remedy"). The California Regional Water Quality Control Board, Santa Ana Region, ("Regional Board") has oversight responsibility for the County's Remedy, which is located immediately west of the southeastern end of the Target Area. The County's Remedy currently extracts and treats groundwater for perchlorate and TCE at an annual average rate of 1,300 gpm.

Based on preliminary engineering analysis conducted by Settling Work Defendant and the County, Settling Work Defendant believes that expanding the capacity of the County's existing treatment facilities to meet the needs of the County's Remedy and the 2010 ROD Remedy may be technically feasible and more cost effective than constructing and operating a second separate stand-alone treatment facility. If Settling Work Defendant proposes a Remedial Design that includes an expansion of the County's existing treatment facility, EPA will require that the proposed Remedial Design satisfies the remedial objectives of the 2010 ROD, achieves all Performance Standards, is readily implementable, and incorporates sound engineering principles. Any such expansion of the County treatment facilities shall be consistent with EPA's and the Regional Board's respective oversight responsibilities.

Based on preliminary engineering analysis conducted by Settling Work Defendant and the County, Settling Work Defendant believes that combining the capture zones and the operation of the existing County extraction wells with the extraction wells needed to meet the objectives of the 2010 ROD ("Combined Capture") may be technically feasible and may be cost effective when compared to operating those capture systems separately. If Settling Work Defendant proposes a Remedial Design that includes Combined Capture, EPA will require that the proposed Remedial Design satisfies the remedial objectives of the 2010 ROD, achieves all Performance Standards, is readily implementable, and incorporates sound engineering principles. Any such Combined Capture shall be consistent with EPA's and the Regional Board's respective oversight responsibilities.

3.2.3. Phasing of the Construction of Treatment Capacity and Extraction Wells

Based on preliminary engineering analysis conducted by Settling Work Defendant, Settling Work Defendant believes that phasing the construction of the necessary treatment capacity, installation of a second new extraction well, and/or other components may be cost effective. If Settling Work Defendant proposes a Remedial Design that includes such phasing, EPA will require that the proposed Remedial Design does not unacceptably delay or jeopardize attainment of the remedial action objectives and will require that it satisfies the remedial objectives of the 2010 ROD, achieves all Performance Standards, is readily implementable, and incorporates sound engineering principles.

3.3. Third Party Involvement in the Remedy

Coordination and/or written agreements may be needed with various third parties to implement the remedy, including the City of Rialto, CDPH (if treated water is supplied for potable use), and local water utilities (to operate the remedy and to accept and distribute treated groundwater if treated water is supplied for potable use).

3.4. Performance Standards

Settling Work Defendant shall implement the RD/RA to achieve the Performance Standards. The Performance Standards are the cleanup standards, the Applicable or Relevant and Appropriate Requirements ("ARARs"), and other measures of achievement of the goals of the Remedial Action, set forth in Section 2.11.2.1, Table 12, and Table 13 of the 2010 ROD. Settling Work Defendant will continue to implement the RD/RA until Settling Work Defendant can demonstrate that: (1) the concentrations of the chemicals of concern identified in the 2010 ROD, in groundwater at monitoring locations to be determined, do not exceed State or federal MCLs identified in the 2010 ROD; and (2) such concentrations are not reasonably expected, based on sound and generally accepted scientific principles, to increase above their respective MCLs after the RD/RA ceases operation.

4. List of Deliverables and Other Tasks

Settling Work Defendant shall submit plans, specifications, drawings, and other deliverables for EPA and State review. Major deliverables, and the recipients and format of the deliverables, are specified in Attachment 2. Information presented in a deliverable in color must be interpretable when reproduced in black and white.

Settling Work Defendant shall implement quality control procedures to ensure the quality of all reports and submittals to EPA and the State. These procedures shall include, but are not limited to, internal technical and editorial review; independent verification of all calculations used in the design; and documentation of all reviews, problems identified, and corrective actions taken.

Pursuant to Section XI of the Consent Decree, EPA may approve, disapprove, or modify each deliverable.

4.1. Remedial Design Work Plan

The Settling Work Defendant shall submit a draft RD Work Plan, in accordance with Sections VI and X of the CD. Settling Work Defendant shall submit a revised RD Work Plan if directed by EPA. Upon approval by EPA, Settling Work Defendant shall implement the RD Work Plan. The deliverables and schedule in the RD Work Plan approved by EPA shall become requirements of this SOW and the CD. The Work Plan shall include the elements described in Sections 4.1.1 through 4.1.8 of this SOW.

4.1.1. Brief Description of the Site and Operable Unit

The RD Work Plan shall include a brief description of the Site and the SAOU, including the sources, nature, and extent of groundwater contamination; a description of the remedy; and geographic, hydrogeologic, ecological, cultural, or natural resource features relevant to the RD.

4.1.2. Remedial Design Investigation

EPA has completed a majority, but not all, of the planned remedial design investigation activities. The RD Work Plan shall describe activities needed to complete the Remedial Design Investigation (RDI) and include provisions for submittal of a Sampling and Analysis Plan (SAP) for the RDI. The RDI shall satisfy the following objectives:

- provide updated groundwater data needed for the remedial design
- provide data if needed to support proposals to phase construction of portions of the remedy
- provide data to address any concerns about the quantity, quality, completeness, or usability of water quality or other data upon which the design will be based

The RDI is expected to include, at a minimum, measurement of water levels and the collection and analysis of groundwater samples from new and selected existing groundwater wells in the Target Area. The location and design of the compliance monitoring wells will be proposed in the preliminary RD submittal

As described in more detail in Section 4.5 of this SOW, the RDI SAP shall describe planning, field, laboratory, data review and interpretation, and reporting efforts needed to satisfy the RDI objectives.

4.1.3. Groundwater Flow Modeling

The RD Work Plan shall include provisions for the use of a numeric groundwater flow model to support decisions about groundwater extraction rates and locations needed to satisfy remedial objectives, submittal of preliminary modeling results to EPA, and submittal of a Groundwater Flow Modeling Report at the completion of the modeling effort. If applicable, the RD Work Plan shall also include provisions for one or more submittals that describe the development and calibration of a new model, or any changes to the calibration of the EPA/CH2M Hill model. The model shall be calibrated over a wide-range of hydrogeologic conditions and have the capability to simulate transient conditions in three dimensions. The model shall be capable of conducting particle tracking simulations to evaluate hydraulic control. The modeling effort should consider the procedures outlined in EPA's guidance document "*A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems,* EPA/600/R-08/003, January 2008."

4.1.4. Updated Project Schedule

The RD Work Plan shall include a schedule consistent with Attachment 2 of this SOW that provides dates for design deliverables and other critical path activities required during design of the remedy. The schedule shall include dates for all design and remedial action planning activities included in Attachment 2, including the Groundwater Flow Modeling activities. Should changes to the schedule requirements presented in Attachment 2 be warranted, these changes will be proposed in the RD Work Plan (or via other written communications) and will be subject to EPA approval.

The schedule shall include time for EPA and State review of written deliverables and for meetings with EPA representatives when appropriate.

4.1.5. Roles and Responsibilities of Key Personnel and Organizations.

The RD Work Plan shall describe the roles and responsibilities of individuals and organizations involved in the RD effort, including major subcontractors.

4.1.6. RA Contracting and Implementation Strategy

The RD Work Plan shall briefly describe the planned strategy for procuring the RA contractor and implementing the RA.

4.1.7. Permits, Property Acquisition, Access, Approvals, Coordination, and Compliance with Substantive Requirements

The RD Work Plan shall list all permits, property, leases, easements, access agreements, and approvals required for implementation of the remedy and summarize actions taken to date, if any. This shall include planning for compliance with the CDPH 97-005 process if the treated groundwater may be used as drinking water. The Work Plan should also include a discussion of the relevance of the 1961 Decree in The Lytle Creek Water and Improvement Co. v. Fontana Ranchos Water Co. et al., San Bernardino County Superior Court Case No. 81254, to the remedy, and the impact of pumping at non-remedy wells on the remedy.

4.1.8. Third Parties Necessary for Implementation of the Remedy and Use of Existing Facilities

The RD Work Plan shall describe the roles and responsibilities of water utilities or other third parties required for implementation of the remedy. Possible third party roles include extraction well and treatment plant operation and acceptance of treated groundwater.

The RD Work Plan shall identify existing facilities (e.g., groundwater extraction wells, water treatment systems, pipelines) that may be used as part of the remedy, describe their planned use, and discuss their condition, expected life, and the potential for increased maintenance or reduced lifespan (compared to new facilities).

4.2. Remedial Design

Remedial Design activities shall include the preparation of clear and comprehensive design documents, construction plans and specifications, and other design activities needed to implement the Work and satisfy all Performance Standards and other requirements. All plans and specifications shall be developed in accordance with U.S. EPA's Superfund Remedial Design/Remedial Action Handbook (EPA 540/R-95/059), and in accordance with the schedule set forth in Attachment 2 of this SOW.

4.2.1. Sampling and Analysis Plan for RD Investigation

The Settling Work Defendant shall submit a Sampling and Analysis Plan for the RDI in accordance with the approved RD Work Plan.

4.2.2. RD Investigation

Settling Work Defendant shall conduct the RDI in accordance with an approved SAP and

the schedule in the approved RD Work Plan.

4.2.3. RD Investigation Report

Settling Work Defendant shall submit a RD Investigation Report in accordance with an approved SAP.

4.2.4. Groundwater Flow Modeling

Settling Work Defendant shall conduct groundwater flow modeling in accordance with the schedule in the approved RD Work Plan.

4.2.5. Groundwater Flow Modeling Report

Settling Work Defendant shall submit a groundwater flow modeling report in accordance with the approved RD Work Plan.

4.2.6. Preliminary Design

The Settling Work Defendant shall conduct Preliminary Design activities in accordance with the approved RD Work Plan. The Preliminary Design submittal shall include the following:

- A detailed Design Basis Report that presents and justifies the concepts, preliminary assumptions, design criteria, performance standards, other requirements, and preliminary interpretations and calculations used in the design, including, as appropriate:

  - Updates to information provided in the RD Work Plan;
  - A description of the targeted area of contamination, including a summary of geologic, water quality, or other data used to delineate the area and an explanation of how the hydraulic control requirements will be met by the planned groundwater extraction;
  - Use of the treated water, recipients of the treated water, treated water delivery rates, pressures, and locations; and locations of major project components;
  - Siting criteria for extraction wells, treatment facilities, pipelines, and other facilities;
  - The results of any treatability studies;
  - Assumed treatment plant influent quality over the design life of the treatment systems, with a description of the methodology used to develop the estimate
  - Disinfection, corrosion control, filtration, aeration, or other treatment requirements in addition to removal of COCs;
  - A description of waste streams, including approximate rates or volumes to be generated (e.g., spent carbon, spent resin, backwash water);

- Effluent (treated water) quality for all COCs exceeding Performance Standards in the untreated groundwater, including discussion of the impact of reductions in State or Federal drinking water standards for perchlorate, TCE, or other COCs, if they were to occur;
- The planned level of operator oversight;
- A description of the system control strategy, including a discussion of how the system is designed to respond to seismic events, power outages, equipment failure, and operator error

- An outline of specifications to be used;

- Preliminary plans and drawings of groundwater extraction, treatment, conveyance, and monitoring systems, including a mass balance and process flow diagram.

4.2.7. Prefinal/Final Design

Settling Work Defendant shall submit the Prefinal Design when the design effort is approximately 95% complete in accordance with Section X of the CD and the approved RD Work Plan. The Prefinal Design shall fully address all comments made to the preceding design submittal, and be submitted along with a memorandum indicating how the comments were incorporated into the Prefinal Design. The Prefinal Design shall function as the draft version of the Final Design.

The Prefinal Design shall include an updated schedule for the construction and implementation of the Remedial Action (including startup procedures, startup testing, and any anticipated compliance testing by CDPH) through satisfaction of "Operational and Functional" criteria; a capital and O&M cost estimate; and a complete set of reproducible construction specifications and drawings that conform to CSI format suitable for bid advertisement. The drawings shall include an outline or list of drawings, a process flow diagram, a piping and instrumentation diagram with a control logic table, and engineering drawings for all components of the project. This includes, but is not limited to, all necessary civil, piping, electrical, structural, mechanical, instrumentation and control drawings for the extraction wells and wellheads, conveyance systems, treatment processes, and monitoring systems.

The Final Design shall fully address all comments made on the Prefinal Design and be submitted with a memorandum indicating how the comments were addressed in the Final Design. The Final Design shall be certified by a Professional Engineer registered in the State of California.

4.3. Remedial Action Planning

During the design period, in preparation for implementation of the remedial action and in accordance with the schedule included in the approved RD Work Plan, Settling Work Defendant

shall submit an Operation and Maintenance Plan, a Compliance Monitoring Plan, a Construction Quality Assurance Plan, and a Construction Health and Safety Plan. The Construction Quality Assurance Plan must be reviewed and approved by EPA prior to the initiation of Construction of the Remedial Action.

4.3.1. Operation and Maintenance Plan

Settling Work Defendant shall prepare an Operation and Maintenance (O&M) Plan pursuant to Sections VI and X of the CD that describes operation, troubleshooting, training, maintenance, and evaluation activities.

A draft O&M Plan shall be submitted during the design period in accordance with the approved RD Work Plan. The O&M Plan shall be updated to incorporate any manufacturer or vendor information and any design modifications implemented during the construction or startup phases of the Remedial Action. The O&M Plan must be reviewed and approved by EPA prior to initiation of O&M activities. The Compliance Monitoring Plan described in the following subsection of this SOW may be incorporated into the O&M Plan or submitted separately.

The O&M Plan shall provide or address the following elements:

- A description of material and maintenance needs, and anticipated equipment replacement for significant components;
- A description of recordkeeping, including, as appropriate, daily operating logs and maintenance records;
- A summary of O&M staffing needs, including training and certification requirements;
- A description of routine data collection and analysis activities required for O&M and to determine if Performance Standards related to O&M are being met, including:

    - Flow rates and volume of groundwater extracted from each extraction well to compare with groundwater extraction rates required to achieve hydraulic control and to estimate contaminant mass removed;
    - Water quality at remedy extraction wells and treatment plant influent to detect any conditions that may interfere with the proper operation and function of the remedy, and to anticipate conditions that may require modifications to the treatment system (Water quality sampling and analysis at groundwater monitoring wells within the capture zone are addressed in the Compliance Monitoring Plan.);
    - Water quality monitoring at appropriate locations within the treatment plant to determine the need for activated carbon and resin replacement, if applicable
    - Water quality monitoring in treated water to verify compliance with Performance Standards, and any additional testing requirements imposed by CDPH for use of treated water as a drinking water source.

- Air emission monitoring to verify that air emissions, if any, comply with Performance Standards;

- Criteria to determine when activated carbon and resin replacement are needed, if applicable
- A description of planned routine reporting to EPA and the State, including, monthly and annual reporting to EPA and the State required by Section 1.5 of this SOW.
- Provision for development of a Health and Safety Plan for O&M.
- Description and analysis of potential operating problems (e.g., decline in groundwater elevation, higher than expected VOC or perchlorate influent concentrations) and potential control strategies or corrective actions (e.g., additional monitoring, operational modifications, project shutdown, and/or additional design and construction activities);
- A description of the plans for the proper disposal of materials used and wastes generated during the O&M periods (e.g., spent treatment media) in compliance with Section VI of the CD
- Provisions for submittal of a SAP or addendum to an existing SAP to address data collection related to O&M
- Procedures for notification to EPA and the State within 72 hours after receipt of information indicating noncompliance or potential noncompliance with Performance Standards related to O&M

4.3.2. Compliance Monitoring Plan

Settling Work Defendant shall submit a Compliance Monitoring Plan (CMP) to provide for data collection and analysis activities needed to demonstrate that the Work satisfies all Performance-Standards related to hydraulic control. The CMP shall be submitted during the design period as specified in the approved RD Work Plan, and implemented after EPA approval. The CMP shall be amended as necessary over the life of the remedy.

The CMP shall, at a minimum, include or accomplish the following:

1. Identify Performance Standards related to hydraulic control that must be satisfied by the remedy.

2. Describe the types of data to be collected, sampling and data gathering methods, monitoring locations, sampling and measurement frequencies, and if appropriate, minimum monitoring duration. The data shall include:

a. Water quality measurements in one or more depths in groundwater compliance wells downgradient of the capture zone. The compliance wells shall be two or more new or existing multi-level monitoring wells (or well clusters) located approximately 500 to 1,500 feet downgradient of the groundwater extraction wells operated as part of the remedy. Compliance well

screens shall be designed to minimize the dilution of groundwater samples and be sufficient in number and adequately located to verify that groundwater moving from the Target Area is intercepted by the remedy extraction wells. Each multi-level compliance well or well cluster shall allow the collection of samples from multiple depths in the contaminated portion of the aquifer. The wells shall be located and designed, and the data analyzed, to evaluate whether hydraulic containment has been achieved, and to support recommendations for changes in the extraction plan if warranted.

b. Installation of at least two nested wells or piezometer clusters installed adjacent to each extraction well. The wells and/or piezometers shall provide for the measurement of hydraulic head at multiple locations and multiple depth intervals to help define the size of the extraction well capture zone. The estimated completion depths for the new, nested wells and/or piezometers are 450 and 650 feet. The data shall be analyzed to evaluate whether the groundwater extraction system results in the required hydraulic control. The data shall be analyzed to determine the direction of groundwater flow, and shall be compared with hydraulic gradients and water level drawdown predicted by computer modeling. Initial monitoring frequency for hydraulic head shall be high enough to assess temporal variability, and the cause of the variability, and may be reduced over time with EPA approval.

3. Include upgradient groundwater monitoring within the capture zone to provide early warning of conditions that may require changes in remedy operation. The CMP shall identify the specific existing (or new) multi-level monitoring wells (or well clusters) located within the predicted capture zone (i.e., upgradient of the remedy extraction wells) that will be monitored. The early warning monitoring shall include the collection of samples from multiple depths in the contaminated portion of the aquifer.

4. Describe how performance data shall be analyzed, interpreted, and reported to EPA and the State to determine compliance with Performance Standards related to hydraulic control and provide early warning of conditions that may require changes in remedy operation. Compliance with Performance Standards related to hydraulic control shall be determined in part based on simulations using the groundwater flow model developed in accordance with Section 4.1.3 of this SOW. Claims of change, difference, or trend in water quality shall include the use of appropriate statistical concepts and tests.

5. Describe the procedures for reporting compliance monitoring information to EPA and the State in the monthly and annual reporting required by Section 1.4 of the SOW.

6. Provisions for submittal of a SAP and Health and Safety Plan, or addendums to existing plans.

7. A schedule for the performance of sampling and data gathering activities.

8. Procedures for notification to EPA and the State within 72 hours after receipt of information indicating noncompliance or potential noncompliance with Performance Standards.

4.3.4. Construction Quality Assurance Plan

Settling Work Defendant shall submit for EPA review a Construction Quality Assurance Plan (CQA Plan). The CQA Plan shall ensure, with a reasonable degree of certainty, that the completed RA will meet or exceed all design criteria, plans and specifications, relevant Performance Standards, and other relevant requirements. EPA will approve the CQA Plan consistent with Section XI of the CD. The CQA Plan must be approved by EPA prior to the initiation of construction.

The CQA Plan shall include the following elements:

- Responsibility and authority of all organizations and key personnel involved in the remedial action construction (including contractors, subcontractors, and consultants);

- A description of the quality control organization, including a chart showing lines of authority, responsibilities and qualifications, and documentation that the QA team is independent of the construction contractor;

- A description of the observations, inspections, and testing that will be used to assure quality workmanship, verify compliance with the plans and specifications, and verify compliance with health and safety procedures during implementation of the Remedial Action. The Plan shall include documentation of the qualifications of the laboratories performing the testing;

- Reporting procedures, frequency, and format for CQA activities.

4.3.5. Construction Health and Safety Plan

Settling Work Defendant shall prepare a Construction Health and Safety Plan in compliance with U.S. Occupational Safety and Health Administration requirements in Title 29 of the Code of Federal Regulations ("CFR"), sections 1910 and 1926, and any other applicable requirement(s). The Construction Health and Safety Plan shall specify

how workers will be protected during site activities through the identification, evaluation, and control of health and safety hazards.

EPA will review but neither approve nor disapprove Settling Work Defendant's Construction Health and Safety Plan.

4.4. Remedial Action

4.4.1 Remedial Action Work Plan

Settling Work Defendant shall submit a draft Remedial Action Work Plan in accordance with Section VI of the Consent Decree. Settling Work Defendant shall submit a revised RA Work Plan if directed by EPA. Upon approval, Settling Work Defendant shall implement the RA Work Plan. The deliverables and schedule in the EPA-approved RA Work Plan shall become requirements of this SOW and the CD.

The RA Work Plan shall update the RD Work Plan and include designation of Settling Work Defendant's on-site Remedial Action Coordinator, Construction Manager, Construction Contractor, Construction Quality Assurance personnel, Resident Engineer and other key project management personnel along with lines of authority and descriptions of duties; a plan for EPA and State review and EPA approval of significant changes during construction; identification of any outstanding issues regarding property acquisition, regulatory agency approvals, access or use agreements, easements, third party agreements, permitting requirements, or substantive requirements for on-site activities; plans to provide site security; any needed updates to the schedule of major activities and submission of deliverables; any changes in procurement or contracting strategy; and any contractor or equipment availability concerns.

Significant field changes to the Remedial Action as set forth in the RA Work Plan and Final Design shall not be undertaken without the approval of EPA.

4.4.2. Construction Contractor

Settling Work Defendant shall notify EPA and the State of the selected construction contractor in accordance with the approved RA Work Plan.

4.4.3. Pre-Construction Meeting

A pre-construction meeting shall be held after selection of the construction contractor but before initiation of construction. The meeting shall include Settling Work Defendant's representatives and interested federal, state and local government agency personnel, and shall define the roles, relationships, and responsibilities of all parties; review work area security and safety protocols; review any access issues; review the construction schedule; and review construction quality assurance procedures. Settling Work Defendant shall ensure that the results of the pre-construction meeting are documented and transmitted to all parties in attendance, including the names of people in attendance, issues discussed, clarifications made, and instructions issued.

4.4.4. Remedial Action Construction

Settling Work Defendant shall implement the Remedial Action as detailed in the approved Final Design and approved RA Work Plan.

4.4.5. Final Construction Inspection and Completion of Construction of the Remedial Action

Within 90 days after Settling Work Defendant concludes that Construction of the Remedial Action has been fully performed, Settling Work Defendant shall schedule and conduct a Final Construction Inspection to be attended by Settling Work Defendant and EPA representatives.

If, after the Final Construction Inspection, Settling Work Defendant still believes that Construction of the Remedial Action has been fully performed, it shall submit a written report in accordance with the schedule in Attachment 2 requesting EPA Certification of Completion of Construction of the Remedial Action.

4.4.6. Pre-certification Inspection and Completion of Startup Activities

Within 90 Days after Settling Work Defendant concludes that the remedy is Operational and Functional, Settling Work Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendant and EPA representatives.

If, after the pre-certification inspection, Settling Work Defendant still believes that the remedy is Operational and Functional, it shall submit a draft Remedial Action Report in accordance with the schedule in Attachment 2 requesting EPA Certification that the Remedy is Operational and Functional.

The RA Report shall demonstrate that the Remedial Action satisfies the requirements of the CD, is operating and functioning as intended, and shall be prepared in accordance

with "Close Out Procedures for National Priorities List Sites," OSWER Directive 9320.2-22 (February 2011). It shall include:

- a narrative description of the construction;
- a chronology of events;
- the results of operational and compliance monitoring completed to date;
- a determination whether remedial action objectives and other relevant requirements are being met, and the basis for the determination;
- a summary of the findings of the Pre-Certification Inspection(s);
- documentation to substantiate Settling Work Defendant's certification of full satisfaction with Section XIV of the CD;
- documentation that the construction quality assurance quality control plan was implemented and that construction completion is consistent with the 2010 ROD and remedial design plans and specifications;
- an electronic copy of the as-built drawings, signed and stamped by a professional engineer, on a CD or DVD.

The RA Report shall also contain the following statement, signed by a responsible corporate official of Settling Work Defendant or the Settling Work Defendant's Project Coordinator:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, 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."*

After completion of the pre-certification inspection and receipt and review of the draft Remedial Action Report, EPA may provide a Certification of Completion of Startup Activities, or notify Settling Work Defendant in writing of the activities that must be undertaken to complete Startup Activities.

Alternatively, after the pre-certification inspection, Settling Work Defendant may submit a written report that outlines outstanding construction and/or startup items, actions required to resolve the outstanding items, completion dates, and a proposed date for another pre-certification inspection.

4.4.7. Pre-certification Inspection and Completion of the Work

Within 90 Days after Settling Work Defendant concludes that the Work, other than any remaining activities required under Section VII of the CD (Remedy Review), have been fully performed, Settling Work Defendant shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendant and EPA representatives.

If, after the pre-certification inspection, Settling Work Defendant still believes the Work, other than any remaining activities required under Section VII of the CD (Remedy Review), have been fully performed, it shall submit to EPA a request for Certification of Completion of the Work in accordance with the schedule in Attachment 2.

4.5 Sampling and Analysis Plan(s) and Health and Safety Plan(s)

In accordance with Section VIII of the CD, Settling Work Defendant shall prepare one or more SAPs for field and laboratory activities required to implement the Work. At a minimum, field and/or laboratory activities will be needed to complete the Remedial Design Investigation, conduct O&M, and conduct Compliance Monitoring.

Each SAP shall include a Field Sampling Plan (FSP), a Quality Assurance Project Plan (QAPP), and a schedule for implementation of sampling, analysis, and reporting activities. The FSP and QAPP shall be submitted together as one document. Upon EPA approval of a SAP, the Settling Work Defendant shall implement the activities described in the SAP.

a. The FSP shall describe sampling objectives, sampling locations and frequencies, sampling equipment and procedures, sample handling and analysis, sample paperwork and chain-of-custody procedures, analytical requirements, sample preservation, sample packing, QA/QC samples, and management of investigation-derived wastes.

The FSP shall be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The FSP shall include a schedule that describes activities that must be completed in advance of sampling, including access agreements and arrangements for disposal of investigation-derived waste. The FSP shall include provisions for the collection of split samples by EPA.

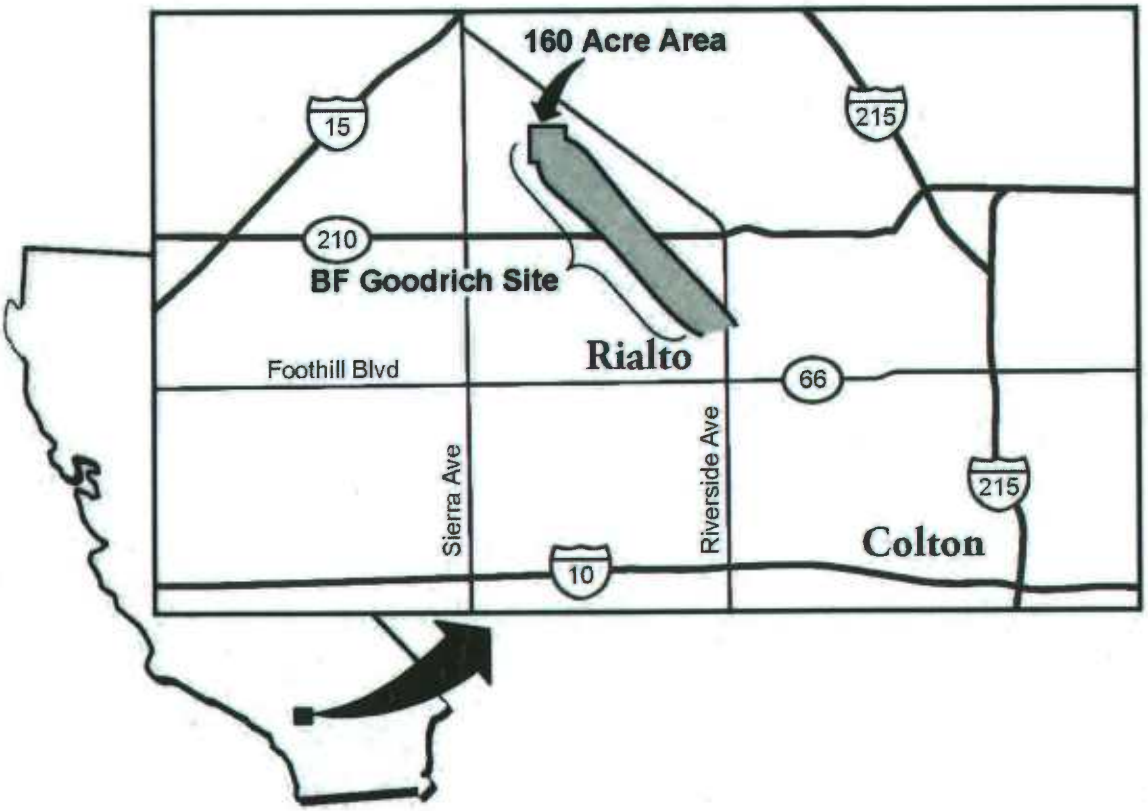
b. The QAPP shall describe monitoring objectives, data quality objectives (DQOs), and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the DQOs. The DQOs shall, at a minimum, reflect use of analytical methods for obtaining data of sufficient quality to meet National Contingency Plan requirements as identified at 300.435 (b). In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, document control procedures, preservation of records (see Section XXV of CD), data review and validation, data management, and procedures that will be used to enter, store, manipulate, and analyze data.

Settling Work Defendant shall submit analytical data and well construction information to EPA and the State in accordance with the schedule included in Attachment 2.

Settling Work Defendant shall demonstrate in advance and to EPA's satisfaction that each laboratory it may use is qualified to conduct the proposed work and meets the requirements specified in Section VIII of the CD. EPA may require that Settling Work Defendant submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specification, and laboratory analyses of performance samples (blank and/or spike samples). In addition, EPA may require submittal of data packages equivalent to those generated by the EPA Contract Laboratory Program (CLP).

c. Settling Work Defendant shall also prepare a Health and Safety Plan in conformance with U.S. Occupational, Safety, and Health Administration (OSHA) requirements as outlined in 29 CFR 1910 and 1926, and any other applicable requirements. The Health and Safety Plan shall describe health and safety risks, employee training, monitoring and personal protective equipment, medical monitoring, levels of protection, safe work practices and safe guards, contingency and emergency planning, and provisions for site control. EPA will review but will neither approve nor disapprove Settling Work Defendant's Health and Safety Plan.

Attachment 1 to the SOW: Site Map



Attachment 2 to the SOW. Due Dates for Major Deliverables and Other Activities

Ref SOW Section	Ref CD Section	Activity or Deliverable		Due [1, 2, 3, 4]	EPA Estimated Review period [5, 6]
-	-	Lodging of Consent Decree			-
1.4	VI	Notification of Proposed Supervising Contractor, including submittal of QMP		30 days after lodging of the CD	7 days
-	XII	Notification of Project Coordinator and Alternate Project Coordinator		40 days after lodging of the CD	-
-	XVII	Proof of commercial general liability and automobile liability insurance		15 days before commencing any on-Site Work	-
Communications and Reporting					
1.5.1	X	Monthly Progress Reports		10th day of each month	N/A
1.5.2	---	Annual Performance Evaluation Report		Annually, by March 30th, after Certification of Completion of Construction of the Remedial Action	45 days
1.5.3	-	Meeting Notes		5 days after meetings where critical decision made	N/A
1.5.4 4.3.1		Notification of Noncompliance or Potential Noncompliance		Seventy-two (72) hours after receipt of information indicating noncompliance or potential noncompliance	-
Remedial Design					
4.1	VI	RD Work Plan		Draft due 30 days after EPA's issuance of an authorization to proceed	30 days
4.1.2 4.2.1 4.5	VI	Sampling & Analysis and Health and Safety Plans for Remedial Design Investigation		Draft due 45 days after EPA's issuance of an authorization to proceed	21 days
4.1.2 4.2.2	VI	Remedial Design Investigation (RDI)		As specified in approved RDI Sampling & Analysis Plan	N/A
4.1.2 4.2.3	VI	Remedial Design Investigation Report		As specified in approved RDI Sampling & Analysis Plan	30 days
4.1.3 4.2.5	VI	Groundwater Flow Modeling		As specified in approved RD Work Plan	N/A

Ref SOW Section	Ref CD Section	Activity or Deliverable		Due [1, 2, 3, 4]	EPA Estimated Review period [5, 6]
4.1.3 4.2.6	VI	Groundwater Flow Modeling Report		As specified in approved RD Work Plan	30 days
4.2.7	VI	Preliminary Design		90 days after EPA approval of the RDI Report	30 days
4.2.8	VI	Prefinal Design		90 days after EPA approval of the Preliminary Design	30 days
4.2.8	VI	Final Design		21 days after EPA comments on the Prefinal Design	21 days
Remedial Action Planning					
4.3.1	VI	Operation and Maintenance (O&M) Plan		Draft due concurrent with the Prefinal Design Submittal (Revised due concurrent with Final Construction Inspection)	21 days
4.3.2	VI	Compliance Monitoring Plan		Draft due concurrent with the Prefinal Design Submittal	21 days
4.3.1 4.3.2 4.5	VI	Sampling & Analysis and Health and Safety Plans		As specified in approved O&M and Compliance Monitoring Plans	30 days
4.3.3	VI	Construction Quality Assurance Plan		90 days after receipt of EPA comments on Preliminary Design Submittal	21 days
4.3.4	VI	Construction Health And Safety Plan		90 days after receipt of EPA comments on Preliminary Design Submittal	-
4.4.1	VI	Remedial Action Work Plan		Draft due 30 days after EPA approval of the Final Design	30 days
Remedial Action					
4.4.2	-	Notification of selected construction contractor		As specified in approved RA Work Plan	7 days
4.4.3	-	Pre-construction Meeting		As specified in approved RA Work Plan	-
4.4.4	VI	RA Implementation		As specified in approved RA Work Plan	-
4.4.5	XIV	Notification of precertification inspection for completion of Construction of the Remedial Action		At least 10 days before precertification inspection	-
4.4.5	XIV	Final Construction Inspection		90 days after Settling Work Defendant concludes that the Construction of the Remedial Action has been fully performed	-

Ref SOW Section	Ref CD Section	Activity or Deliverable		Due [1, 2, 3, 4]	EPA Estimated Review period [5, 6]
4.4.5	XIV	Request for Certification of Completion of Construction of the Remedial Action (or written submittal that identifies actions and a schedule to resolve outstanding construction items)		Draft due 30 days after the Final Construction Inspection	30 days
4.4.5	XIV	Additional precertification inspections for Completion of Construction of the Remedial Action (if needed)		As specified or approved by EPA	-
4.4.6	XIV	Notification of precertification inspection for Completion of Startup Activities		At least 10 days before precertification Inspection	-
4.4.6	XIV	Precertification inspection for Completion of Startup Activities		90 days after Settling Work Defendant concludes that the remedy is Operational and Functional	-
4.4.6	XIV	RA Report and Request for Certification of Completion of Startup Activities (or written submittal that identifies actions and a schedule to resolve outstanding Startup Activities)		Draft due 30 days after the precertification inspection	30 days
4.4.6	XIV	Additional precertification inspections for Completion of Startup Activities (if needed)		As specified or approved by EPA	-

Ref SOW Section	Ref CD Section	Activity or Deliverable		Due [1, 2, 3, 4]	EPA Estimated Review period [5, 6]
4.4.7	XIV	Notification of precertification inspection for completion of the Work		At least 10 days before precertification inspection	-
4.4.7	XIV	Precertification inspection for Completion of the Work		90 days after Settling Work Defendant concludes that the Work has been fully performed	-
4.4.7	XIV	Request for Certification of Completion of the Work (or written submittal that identifies actions and a schedule to resolve outstanding Work items)		Draft due 30 days after the precertification inspection	30 days
4.4.7	XIV	Additional precertification inspections for completion of the Work (if needed)		As specified or approved by EPA	-
Operation and Maintenance					
See requirements for Communications and Reporting					
Other					
4.5	-	Submittal of Analytical Data, whether or not validated		42 calendar days after sample shipment to the laboratory or 14 days after receipt of analytical results from the laboratory, whichever occurs first.	NA
4.5	-	Submittal of Validated Analytical Data		90 calendar days after the sample shipment to the laboratory	NA
4.5	-	Well construction information		90 days after completion of a well.	NA

[1] Unless otherwise indicated, all deliverables shall be provided in an electronic format (e.g., PDF) to EPA, EPA's contractor, the Water Board, and DTSC. Paper copies are required for the following: Preliminary, Prefinal, and Final Design submittals.

[2] All deliverables set forth in Attachment 2 will be reviewed and approved by EPA in accordance with Section XI of the CD, except for the Health and Safety Plan(s), which will be reviewed but neither approved nor disapproved.

[3] Revised versions of documents, if needed, are due 14 days after receipt of EPA comments, unless specified otherwise in this Attachment or in writing by EPA

[4] Information presented in color must be interpretable when reproduced in black and white.

[5] Estimated time is in calendar days.

[6] Failure to review a deliverable within the estimated time shall not constitute a violation of the Consent Decree by the United States.

Attachment 3 to the SOW. Selected Guidance and Resources

The following regulations and guidance documents may be relevant during the RD/RA process.

"National Oil and Hazardous Substances Pollution Contingency Plan, Final Rule", Federal Register 40 CFR Part 300, March 8, 1990

Remedial Design/Remedial Action (RD/RA) Handbook, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER), 9355.0-04B, EPA 540/R-95/059, June 1995

Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992

A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, EPA/600/R-08/003, January 2008

Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER Directive 9283.1-33, June 26, 2009

Superfund Green Remediation Strategy, September 2010, available at: http://www.epa.gov/superfund/greenremediation/sf-gr-strategy.pdf

CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, (DRAFT), OSWER Directive No. 9234.1-01 and -02, August 1988

Superfund Community Involvement Handbook, U.S. EPA, Office of Solid Waste and Emergency Response, EPA-540-K-05-003, April 2005

Policy Guidance for Direct Domestic Use of Extremely Impaired Sources, California Department of Public Health Policy Memorandum 97-005

Clarification of the Role of Applicable, or Relevant and Appropriate Requirements in Establishing Preliminary Remediation Goals Under CERCLA, EPA 540/F-97/008, OSWER 9200.4-23, August 1997

Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, EPA/530-(S) SW-86-031, February 1987

USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, USEPA-540-R-08-01, June 2008

USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-10-011, January 2010

EPA Guidance on Systematic Planning Using the Data Quality Objectives Process (QA/G-4), February 2006

EPA Requirements for Quality Management Plans (QA/R-2), EPA/240/B-01/002, March 2001

EPA Requirements for Quality Assurance Project Plans (QA/R-5), EPA/240/B-01/003, March 2001

EPA Region IX Sampling and Analysis Plan Guidance and Template, R9QA/002.1, April, 2000

Region 9 Superfund Data Evaluation/Validation Guidance (Draft), USEPA, Quality Assurance Office, R9QA/006.1, December 2001

Appendix G

Appendix G

[Letterhead of Issuing Bank]

IRREVOCABLE STANDBY LETTER OF CREDIT
NUMBER: [_____]

ISSUANCE DATE: [_____]

MAXIMUM AMOUNT: [U.S.$_____]

BENEFICIARY:	APPLICANT:
U.S. Environmental Protection Agency	[Name of Settling Defendant]
c/o [Name of Regional Superfund Director]	[Title if applicable]
Director, Superfund Division, EPA Region [_]	[Address]
[Address]	

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. [___] in your favor, at the request and for the account of the Applicant, [Insert name of Settling Defendant], in the amount of exactly [in words] U.S. dollars ($XX.XX) (the "Maximum Amount"). We hereby authorize you, the U.S. Environmental Protection Agency (the "Beneficiary"), to draw at sight on us, [Insert name and address of issuing bank], an aggregate amount equal to the Maximum Amount upon presentation of:

(1) your sight draft, bearing reference to this Letter of Credit No. [____] (which may, without limitation, be presented in the form attached hereto as Exhibit G-1); and

Appendix G (continued)

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to [that certain Consent Decree, dated _____ ___, 20__, by and among the United States and _____], entered into by the parties thereto in accordance with the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)."

This letter of credit is effective as of [insert issuance date] and shall expire on [a date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [the date which is at least 1 year later] and on each successive expiration date, unless, at least one hundred twenty (120) days before the current expiration date, we notify both you and [enter name of Settling Defendant posting the letter of credit] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall immediately thereupon be available to you upon presentation of your sight draft for a period of at least 120 days after the date of receipt by both you and [enter name of Settling Defendant posting the letter of credit] of such notification, as shown on signed return receipts.

Multiple and partial draws on this letter of credit are expressly permitted, up to an aggregate amount not to exceed the Maximum Amount. Whenever this letter of credit is drawn on, under, and in compliance with the terms hereof, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft in immediately available funds directly into such account or accounts as may be specified in accordance with your instructions.

Appendix G (continued)

All banking and other charges under this letter of credit are for the account of the Applicant.

This letter of credit is subject to the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce.

Very Truly Yours,

[Name and address of issuing institution]

[Signature(s), name(s), and title(s) of official(s) of issuing institution]

[Date]

Exhibit G-1 to Appendix G - Form of Sight Draft

United States Environmental Protection Agency

Sight Draft

TO: [Insert name of Issuing Bank]
[Insert address of Issuing Bank]
[_____]
[_____]

RE: Letter of Credit No. [_____]

DATE: [Insert date that draw is made]

TIME: [Insert time of day that draw is made]

This draft is drawn under your Irrevocable Letter of Credit No. [_____]. Pay to the order of the United States Environmental Protection Agency, in immediately available funds, the amount of [in words] U.S. Dollars (U.S.$[_____]) or, if no amount certain is specified, the total balance remaining available under your Irrevocable Letter of Credit No. [_____].

Pay such amount as is specified in the immediately preceding paragraph by FedWire Electronic Funds Transfer ("EFT") to the [Site name] Special Account within the EPA Hazardous Substance Superfund in accordance with current EFT procedures, referencing File Number [_____], EPA Region and Site Spill ID Number [_____], and DOJ Case Number [_____], as follows:

[Insert specific Special Account wiring instructions and information].

Exhibit G-1 to Appendix G - Form of Sight Draft (continued)

This Sight Draft has been duly executed by the undersigned, an authorized representative or agent of the United States Environmental Protection Agency, whose signature hereupon constitutes an endorsement.

By: _____ [signature]

_____ [name]

_____ [title]

Appendix H

Appendix H

List of Settling Ability to Pay Defendants' Financial Information

Broco, Inc.

- Letter from Allan E. Ceran to Kate Taylor, dated August 3, 2010
  - Answers of Broco, Incorporated to Ability to Pay Questions
    - Certification Statement for Ability to Pay Information
    - California Secretary of State filing A457004
      - Transcript Certification
      - Certificate of Amendment of Articles of Incorporation of Broco, Incorporated
    - Intrem, Inc. Form 996, Certified Copy of Resolution of Plan of Complete Liquidation and Dissolution
    - Certificate of Dissolution of Intrem, Inc.
    - California Franchise Tax Board Tax Clearance Certificate
    - Conveyance and Assignment by Intrem, Inc.
    - Asset Purchase Agreement between Ferry Family Enterprises and Broco, Inc., et.al., with schedules
    - Broco, Inc. Financial Statements
      - Consolidated, December 31, 1992 and 1991
      - Consolidated, December 31, 1993 and 1992
      - Balance Sheet, November 30, 1994
    - Income Statement, 11/30/94
    - IRS Form 8821, Tax Information Authorization

Appendix H (continued)

J. S. Brower & Associates, Inc.

- Letter from Allan E. Ceran to Kate Taylor, dated August 3, 2010
  - Answers of J.S. Brower & Associates, Inc. to Ability to Pay Questions
    - Certification Statement for Ability to Pay Information
    - California Secretary of State filing A493829
      - Transcript certification
      - Agreement of Merger Between Intrem, Inc. and J.S. Brower & Associates, Inc.
      - Officers' Certificate of Approval of Agreement of Merger (25,000 common shares), executed June 10, 1997
      - Officers' Certificate of Approval of Agreement of Merger (24,900 common shares), executed June 10, 1997
      - Articles of Merger of J.S. Brower & Associates, Inc. Into Intrem, Inc.
    - Intrem, Inc. Certified Copy of Resolution of Plan of Complete Liquidation and Dissolution, dated March 16, 1998
    - Certificate of Dissolution of Intrem, Inc.
    - State of California Franchise Tax Board Tax Clearance Certificate, dated May 7, 1998
    - Conveyance and Assignment By Intrem, Inc.
    - IRS Form 8821, Tax Information Authorization

Appendix I

Appendix I

List of Settling Ability to Pay Defendants' Insurance Information

Broco, Inc.

- Answers of Broco, Incorporated to Ability to Pay Questions
  - Northbrook Property and Casualty Insurance Company, Policy No. 95-550177
  - Northbrook Property and Casualty Insurance Company, Policy No. UEL 0550178
  - Hartford Steam Boiler Inspection and Insurance Company Policy Number CSI-LA-9932867-03
  - London Institute Companies, Policy Number CMO 8062
  - Nat'l Union Fire Ins Co., Policy Number PLL7631915
  - Cal Eagle Insurance, Policy No. CB02741-3
- Email from Allan E. Ceran to Deborah Gitin, dated February 8, 2012
  - Royale Belge Policy No. RGB 004413
  - Royale Belge Policy No. RGB 004515
  - Royale Belge Policy No. RGB 004181
- Email from Allan E. Ceran to Deborah Gitin, dated April 10, 2012
  - Mission Insurance Policy No, MN 035297
  - Allianz Policy No. AUX 5201585
  - Letter from Paul M. Mason of Allianz Global Corporate & Specialty to Allan E. Ceran, dated March 13, 2012

J. S. Brower & Associates, Inc.

- Email from Allan E. Ceran to Deborah Gitin, dated February 8, 2012
  - Royale Belge Policy No. RGB 004413

Appendix I (continued)

- Royale Belge Policy No. RGB 004515
- Royale Belge Policy No. RGB 004181

- Email from Allan E. Ceran to Deborah Gitin, dated April 10, 2012
  - Mission Insurance Policy No, MN 035297
  - Allianz Policy No. AUX 5201585
  - Letter from Paul M. Mason of Allianz Global Corporate & Specialty to Allan E. Ceran, dated March 13, 2012

Appendix J

Appendix J

MATERIAL TERMS TO BE INCLUDED IN THE RIALTO/SETTLING WORK DEFENDANT IMPLEMENTATION AGREEMENT

The Rialto/Settling Work Defendant Implementation Agreement shall contain the following terms:

1. Rialto shall lease to Emhart for a nominal fee: (a) Rialto property reasonably necessary for the construction and operation of up to two groundwater extraction wells and three monitoring wells on Rialto property; (b) Rialto-02 water supply well (as needed) may be used as one of the two groundwater extraction wells; and (c) Rialto property reasonably necessary for the construction and operation of a groundwater treatment facility in a location mutually acceptable to Rialto and Emhart, which is reasonably proximate to either (i) Rialto-02 and/or the new groundwater extraction wells, or (ii) the existing groundwater treatment system constructed by the County of San Bernardino at Rialto-03 water supply well; provided, however, that all such wells and other facilities will be located to the maximum extent feasible in public rights of way, must be consistent with Rialto's land use and development plans and entitlements for such properties, and be in locations approved by Rialto in its sole discretion. All such leases shall contain provisions setting forth reasonable aesthetic standards satisfactory to Rialto.

2. Emhart shall be responsible for the costs of permitting, design, installation, construction, operation, and maintenance of: (a) the capture system necessary to perform the Work (as such term is defined in the Consent Decree); (b) the groundwater treatment system and extraction wells necessary to perform the Work (to be operated by Rialto); and (c) the additional piping necessary to connect the existing Rialto and Colton water supply systems, and the existing water supply systems of Rialto and any water purveyor (other than Colton) who is to receive the treated water. Emhart shall also reimburse Rialto for costs it incurs for record retention relating to the Work, and the copying or production of such records to EPA as may be required from time to time under this Consent Decree.

3. Rialto (or its contractor) shall operate the groundwater treatment system and extraction wells required by the Work (subject to Emhart's responsibility for the costs of such operation). Emhart shall operate and maintain the capture system required by the Work.

Appendix J (continued)

4. Rialto shall for a nominal fee: (a) transport the treated water generated by the Work through its existing water supply system to Colton (and/or a water purveyor other than Colton), if the piping and infrastructure currently exists for such transport and such water purveyor agrees to accept such water at no cost to Rialto; and (b) provide easements for new pipelines needed to transport that water (i) through Rialto property from the groundwater extraction wells to the treatment facility, (ii) from that treatment facility to Rialto's existing water supply system, and (iii) from Rialto's existing water supply system to Colton's existing water supply system (and/or to another water purveyor as provided above). These easements shall be reasonably consistent with the location/alignment of the piping depicted in the conceptual diagram attached hereto as Exhibit 1 or at such other locations approved by Rialto in its sole discretion.

5. Rialto shall ensure that knowledgeable representatives are available, as reasonably necessary, to work with Emhart during the design, permitting, and construction phases of the Work, provided that Emhart shall reimburse Rialto for: (a) the cost of the time incurred by Rialto's consultant Peter Fox (or Rialto's designated alternate consultant), except for the first ten hours of the consultant's time which Rialto has agreed to pay; and (b) all other Rialto personnel costs, including the time of any other necessary Rialto consultants, up to an amount not-to-exceed $20,000. There will be no reimbursement for the time of any elected official. Emhart's reimbursement or payment obligation in this Paragraph 5 shall be in addition to Emhart's obligation to be responsible for Rialto's costs as set forth herein.

6. Rialto and Settling Work Defendant shall include such other terms (including mutual indemnification commitments) as are consistent, necessary, and appropriate to carry out the obligations set forth in Paragraph 10. b. 1) of this Consent Decree.

Exhibit 1 to Appendix J

Appendix K

Appendix K

SETTLEMENT TERMS FOR RESOLVING PENDING APPEALS

Whereas, Emhart Industries, Inc., ("Emhart"), Kwikset Locks, Inc. ("KLI"), Black & Decker Inc. ("BDI") (collectively the "Emhart Parties"), the Emhart Related Parties, the United States, and the County of San Bernardino ("County") agree as follows:

1. The parties to this agreement are the Emhart Parties, the Emhart Related Parties, the United States, and the County.

2. Definitions

a. The term "Prior Orders" shall mean the District Court orders and all related District Court decisions presently on appeal in the Ninth Circuit Court of Appeals in *United States of America v. Zambelli Fireworks Manufacturing Co., et al.*, No. 11-56309, *United States of America v. City of Rialto, and County of San Bernardino, et al.*, No. 12-55342, *Emhart Industries, Inc. v. Zambelli Fireworks Manufacturing Co. et al.*, No. 11-56159, and *Emhart Industries, Inc. v. County of San Bernardino, et al.*, No. 12-55083, including associated appeals and each case subject to the Amended Order consolidating Appeals filed on April 16, 2012 (Dkt. 12).

b. "Non-Basin Contaminants" shall mean a hazardous substance, as defined in CERCLA, other than Basin Contaminants, as that term is defined in this Consent Decree.

3. The United States and the Emhart Parties shall continue to stay their appeals of the Prior Orders until 30 days from (i) the Effective Date or (ii) the date the Court rejects/denies this Consent Decree.

4. If this Consent Decree is entered/approved, the United States and the Emhart Parties shall dismiss their appeals of the Prior Orders, as set forth in Paragraph 126 of this Consent Decree.

5. In the event that any other appellant of the Prior Orders continues to pursue an appeal of the Prior Orders and ultimately prevails, the County acknowledges

Appendix K (continued)

that the United States and the Emhart Parties have not waived and shall be entitled to the benefits of such a ruling, subject to the terms of this Consent Decree.

6. As between the United States and the County, in any future action or proceeding brought by any person or entity other than the City of Rialto ("Rialto") or the City of Colton ("Colton"), with respect to Non-Basin Contaminants released at or from the Mid Valley Sanitary Landfill ("MVSL"), the County agrees that, as to the United States only, all claims and defenses are preserved in any such action with respect to such releases, notwithstanding the Prior Orders.

7. As between the United States and the County, nothing in this agreement shall modify any provision of this Consent Decree. Nothing in this agreement shall alter the rights or authority of the United States Environmental Protection Agency.

8. With regard to perchlorate and TCE released in the RABSP Site, the obligations of the County, on the one hand, and Emhart, on the other, to each other, are governed by the Prior Orders and this Consent Decree.

9. With regard to any chemical other than perchlorate and TCE released from the 160-Acre Area, the County reserves, in any future action or proceeding, all claims against Emhart and the Emhart Related Parties, notwithstanding the Prior Orders and any provision of this Consent Decree.

10. With regard to any chemical other than perchlorate and TCE released from the MVSL, Emhart and the Emhart Related Parties reserve, in any future action or proceeding, all claims against the County, notwithstanding the Prior Orders and any provision of this Consent Decree.

11. If a claim is brought by Rialto and/or Colton against the County, Emhart, and/or the Emhart Related Parties, arising out of releases of chemicals from the MVSL and/or the 160-Acre Area, the County, on the one hand, and Emhart and/or the Emhart Related Parties, on the other, shall not assert or bring a claim of contribution against the other, notwithstanding paragraphs 8, 9, and 10, above.

Appendix K (continued)

12. The County, on the one hand, and Emhart and the Emhart Related Parties on the other, shall not assert or bring a claim for contribution against the other as the result of any claim, arising out of releases of chemicals from the MVSL and/or the 160-Acre Area, which has been brought, or may in the future be brought, by the City of Riverside against the County, Emhart, and/or the Emhart Related Parties, notwithstanding paragraphs 8, 9, and 10, above.

13. This agreement shall become effective on the Effective Date of this Consent Decree, except for paragraph 3, which is effective upon signature of this agreement by all parties to this agreement. If this Consent Decree is overturned on appeal, this agreement shall remain in effect provided that, within twelve (12) months thereafter, Emhart, the Emhart Related Parties, the United States, and the County enter into a subsequent consent decree, which contains, as between the County, Emhart, the Emhart Related Parties, and Settling Federal Agencies, substantially similar terms to this Consent Decree to the extent possible in conformance with any final appellate decision. In connection herewith, Emhart, the Emhart Related Parties, the United States, and the County agree to negotiate in good faith to achieve these objectives.

14. If the District Court does not enter/approve this Consent Decree, this agreement shall be null and void and of no effect.

Appendix K (continued)

FOR THE UNITED STATES OF AMERICA:

Dated: 12/4/12

By: _____

MICHAEL C. AUGUSTINI
MARK A. RIGAU
ROBERT FOSTER
Environmental Defense Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, DC 20044-7611

Appendix K (continued)

FOR THE COUNTY OF SAN BERNARDINO:

Dated: 11/29/2012

By: _____
For: TIMOTHY V.P. GALLAGHER
THOMAS A. BLOOMFIELD
Gallagher & Gallagher

Appendix K (continued)

FOR THE EMHART PARTIES AND THE EMHART RELATED PARTIES:

Dated: 26 November 2012

By: _____
JOSEPH W. HOVERMILL
Miles & Stockbridge PC

LEXISNEXIS® FILE & SERVE 48139737 E-SERVICE
Dec 04 2012 09:01AM

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice
DEBORAH A. GITIN (MA State Bar #645126)
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
301 Howard Street, Suite 1050
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Telephone: (415) 744-6488
Facsimile: (415) 744-6476
deborah.gitin@usdoj.gov

Attorneys for Plaintiff, UNITED STATES OF AMERICA

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA – WESTERN DIVISION

CITY OF COLTON, a California municipal corporation, Plaintiff, v. AMERICAN PROMOTIONAL EVENTS, INC., et al. Defendants.	CASE NO. ED CV 09-01864 PSG (SSx) [Consolidated with Case Nos. CV 09-6630 PSG (SSx), CV 09-06632 PSG (SSx), CV 09-07501 PSG (SSx), CV 09-07508 PSG (SSx), CV 10-824 PSG (SSx) and CV 05-01479 PSG (SSx)] **NOTICE OF LODGING** **CONSENT DECREE**
AND CONSOLIDATED ACTIONS	

The United States of America hereby notifies the Court that the United States is lodging a proposed Consent Decree that, subject to a public comment period and subsequent entry by the Court, will resolve the claims of certain parties to the Consolidated Actions.

On August 31, 2012, parties to the Consolidated Actions informed the Court that the majority of the litigants had entered into tentative settlements with the United States and that the settlements would be embodied in two consent decrees, one of which was identified as the Work Consent Decree. (Dkt. #1715.) The United States subsequently informed the Court that it had reached a tentative settlement with the Goodrich Corporation ("Goodrich") and that the United States and Goodrich expected to memorialize that settlement in a third Consent Decree, the Goodrich Consent Decree, which is still being negotiated. (Dkt. #1767.)

The Court granted short extensions to the remaining schedule and provided a framework for the United States' lodging the Work Consent Decree with the Court. (Dkt. ##1736 and 1768.) The United States has previously certified that it has received signatures to the Work Consent Decree from all non-United States signatories to that Decree, thereby vacating the remaining schedule as to those signatories other than the United States on behalf of EPA. (Dkt. ## 1766, 1770, and 1773.) Consistent with the Court's direction, the United States is contemporaneously lodging the Work Consent Decree with this Notice of Lodging.

Under the terms of the Work Consent Decree and pursuant to 28 C.F.R. § 50.7, the United States must publish notice in the Federal Register and accept public comment on the proposed Work Consent Decree for a period of not less than thirty days. The United States currently anticipates that the public comment period will run until January 31, 2013. Accordingly, the United States respectfully requests that this Court not enter the proposed Work Consent Decree prior to the expiration of the public comment period or prior to hearing further from the United States.

At the expiration of that period and after the United States has reviewed any public comments that are received, the United States will either request that the

Court enter the proposed Work Consent Decree, or advise the Court that public comments have been received that warrants the United States' withdrawal from the proposed Work Consent Decree. The United States anticipates that, barring any reason for withdrawal or any unanticipated delay in the negotiation process for the Goodrich Consent Decree, it will likely move concurrently for entry of the presently lodged Work Consent Decree and for entry of the anticipated Goodrich Consent Decree.

Respectfully submitted,

DATED: December 4, 2012

/s/ Deborah A. Gitin
DEBORAH A. GITIN
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice