EPA/ESD/R09-04/703
2004

EPA Superfund
Explanation of Significant Differences:

TRACY DEFENSE DEPOT (USARMY)
EPA ID: CA4971520834
OU 01
TRACY, CA
09/27/2004

18600352.27030

FINAL

DEFENSE LOGISTICS AGENCY
DEFENSE DISTRIBUTION DEPOT SAN JOAQUIN CALIFORNIA
TRACY SITE, CALIFORNIA

2004 EXPLANATION OF SIGNIFICANT DIFFERENCES TO THE SITEWIDE COMPREHENSIVE RECORD OF DECISION
DDJC-TRACY

Prepared for:

U.S. Army Corps of Engineers
Engineering and Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822
ATTN: CEHNC-IS-FS

Prepared by:

URS Group, Inc.
2870 Gateway Oaks Drive, Suite 300
Sacramento, California 95833

September 2004

URS
Project Staff

Principal-in-Charge
Victor Auvinen, V.P.

Program Manager
Michael Thomas

Project Manager
Shabad Khalsa, P.E.

Project Staff
Vivian Gaddie
Jeff Herrin
Linda Littleton
Sarah Tourre

Report Production
Gayle Gideon
Eric Stewart

Peer Review
Michael Thomas
Phil Welker

Quality Control Manager
Phil Welker

2004 Explanation of Significant Differences to the Sitewide Comprehensive Record of Decision DDJC-Tracy

9-24-04

U.S. Department of Defense, Defense Logistics Agency — Date
J. Douglas Serrano, Colonel, USA
Commander, Defense Distribution Depot San Joaquin California

9-28-04

Cal/EPA Department of Toxic Substances Control — Date
Anthony J. Landis, Chief
Northern California Operations, Office of Military Facilities

9/30/04

State of California Regional Water Quality Control Board — Date
Thomas R. Pinkos, Executive Officer
Central Valley Region

9/27/04

U.S. Environmental Protection Agency — Date
Kathleen Johnson, Chief
Federal Facilities and Site Cleanup Branch

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (CONTINUED)

Page

APPENDICES

LIST OF TABLES

Page

LIST OF FIGURES

Page

LIST OF ACRONYMS AND ABBREVIATIONS

AB	aggregate base
AR	Army Regulation
ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	contaminant of concern
COPC	contaminant of potential concern
C/U	carbamate/urea
DDCE	design data collection effort
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDJC	Defense Distribution Depot San Joaquin California
DDT	dichlorodiphenyltrichloroethane
DDX	sum of the concentrations of DDD, DDE, and DDT
DI WET	deionized water waste extraction test
DLA	Defense Logistics Agency
DoD	U.S. Department of Defense
DSERTS	Defense Site Environmental Reporting and Tracking System
DTSC	California Department of Toxic Substances Control
EBS	environmental baseline survey
ECC	Environmental Chemical Corporation
ESD	explanation of significant differences
EU	exposure unit
FFA	federal facilities agreement
FOST	finding of suitability to transfer
GWTP1	Groundwater Treatment Plant 1
HI	hazard index
HQ	hazard quotient
IMP	installation master plan
MCPA	2-Methyl-4-chlorophenoxyacetic acid
NCP	National Contingency Plan
NPL	National Priorities List
OC	organochlorine
OU	operable unit

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

ppbv	parts per billion by volume
PRG	preliminary remediation goal
RAO	remedial action objective
RBC	risk-based concentration
RI/FS	remedial investigation/feasibility study
ROD	record of decision
RPM	remedial project manager
RWQCB	California Regional Water Quality Control Board
SARA	Superfund Amendment and Reauthorization Act
SVE	soil vapor extraction
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TCE	trichloroethene
TPH	total petroleum hydrocarbons
TPHD	total petroleum hydrocarbons as diesel
TPHG	total petroleum hydrocarbons as gasoline
URS	URS Group, Inc.
U.S. EPA	U.S. Environmental Protection Agency
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USC	U.S. Code
VOC	volatile organic compound
WWII	World War II
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
2,4,5-T	trichlorophenoxyacetic acid
2,4-D	2,4-dichlorophenoyacetic acid

1.0 INTRODUCTION AND STATEMENT OF PURPOSE

1.0.1 The Defense Distribution Depot San Joaquin California, Tracy Site (DDJC-Tracy) is located in an unincorporated area of San Joaquin County, 1.5 miles southeast of Tracy, California; it is approximately 20 miles southwest of Stockton, California, and 60 miles east of San Francisco, California (Figure 1-1).

1.0.2 The DDJC-Tracy site began functioning as a depot in 1942. The Defense Logistics Agency (DLA) has operated DDJC-Tracy since 1963 as a storage and distribution depot for the United States military services in the western United States and the Pacific region. In late 1992, the DLA purchased an agricultural area north of the operating portion of DDJC-Tracy, called the Tracy Annex. The operating portion of the depot covers a 448-acre triangular parcel, and the Tracy Annex consists of approximately 460 acres (Figure 1-2).

1.0.3 Historical operations at the depot have included the handling and use of potentially hazardous materials. To address contamination associated with past practices for handling hazardous materials at the site, the *DDJC-Tracy Sitewide Comprehensive Record of Decision* (ROD) (Radian International, 1998a) was signed in April 1998. The ROD specifies remedies that are protective of human health and the environment, comply with federal and state requirements which are legally applicable or relevant and appropriate to the remedial action, and are cost effective.

1.0.4 The purpose of this Explanation of Significant Differences (ESD) to the ROD is to document significant changes to the remedies at DDJC-Tracy. This ESD addresses institutional controls at sites located throughout the depot, as well as changes to the remedy for Solid Waste Management Unit (SWMU) 6, SWMU 8, SWMU 20, and the Defense Site Environmental Reporting and Tracking System (DSERTS) 67 site (Figure 1-3). This ESD was prepared in accordance with *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (U.S. Environmental Protection Agency [U.S. EPA], 1999).

1.1 History of Remedial Activities

1.1.1 In early 1980, a records search by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) identified several waste sites (SWMUs) at DDJC-Tracy with contaminants that could migrate to off-depot locations. The records search concluded that waste disposal practices between 1940 and the mid-1970s—including the use of burning to dispose of wastes, operation of underground sumps/tanks, and use of unlined drainage and sewage leaching ponds—probably were responsible for the reported contamination (USATHAMA, 1980).

1.1.2 Results of continuing investigations led to DDJC-Tracy being listed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL) as a Superfund site in 1991. On 27 June 1991, DDJC-Tracy, the U.S. EPA Region 9, and the California Department of Toxic Substances Control (DTSC) signed a Federal Facilities Agreement (FFA) for DDJC-Tracy. This FFA has enforceable schedules; it ensures that environmental impacts are thoroughly investigated and that appropriate cleanup actions are taken to protect human health, welfare, and the environment. Consistent with the requirements of the FFA, the U.S. EPA, DTSC, and the California Regional Water Quality Control Board (RWQCB) provide regulatory oversight, including technical support, review, and comment on all investigative and cleanup work at DDJC-Tracy.

1.1.3 Following the signing of the FFA, contaminated groundwater was identified as the "principal threat" at the depot, and actions to address contaminated groundwater were given priority. *The Operable Unit No. 1 Record of Decision* (OU 1 ROD)[1] (Woodward-Clyde Consultants, 1993) was signed in August 1993;

[1] In this document, the term ROD refers to the *Sitewide Comprehensive Record of Decision*. The *Operable Unit No. 1 Record of Decision* is referred to as the OU 1 ROD.

it specifies groundwater extraction and treatment as the remedy for OU 1.

1.1.4 At the same time, a remedial investigation/feasibility study (RI/FS) was initiated to more thoroughly evaluate the contamination associated with OU 1 and to address the areas of soil contamination that were not addressed as part of the OU 1 ROD) (Montgomery Watson, 1996). The RI/FS report includes an evaluation of possible remedies for the sites identified as posing a threat to human health or the environment. A proposed plan (Montgomery Watson, 1997a) was then prepared for public review. The purpose of the proposed plan was to describe recommended remedies, provide information to the public about the actions planned at the sites, and encourage public input prior to making a final decision on a remedy.

1.1.5 Following the public comment period for the proposed plan, the *DDJC-Tracy Site-wide Comprehensive Record of Decision* (Radian International, 1998a) was developed and finalized (April 1998) in accordance with applicable federal and state laws, regulations, and codes. The ROD modifies the remedy for OU 1 groundwater and addresses all areas of soil contamination at the depot.

1.1.6 Subsequent to publication of the ROD, an ESD and ROD Amendment were completed that modified the selected remedy. This is the second ESD to the ROD. Table 1-1 summarizes the decision documents that have been prepared for DDJC-Tracy to date.

1.2 Basis for Explanation of Significant Differences

1.2.1 The basis for the significant changes documented in this ESD is specific to each site or issue and is described in the following sections of this document:

- Section 2: Institutional Controls at DDJC-Tracy;
- Section 3: SWMU 6 (evaluation of contamination left in place and institutional controls);
- Section 4: SWMU 8 (evaluation of contamination left in place and institutional controls);
- Section 5: SWMU 20 (evaluation of soil vapor extraction and institutional controls); and
- Section 6: DSERTS 67 (evaluation of aggregate cover and institutional controls).

1.2.2 This ESD documents changes to the selected remedial action for the DDJC-Tracy installation developed in accordance with §117 of CERCLA, as amended by the Superfund Amendment and Reauthorization Act (SARA). The modified remedies are also in compliance with the National Oil and Hazardous Substances Pollution Contingency Plan, referred to as the National Contingency Plan (NCP), §300.435(c)(2)(ii), and Chapter 6.8 of the California Health and Safety Code, Section 25300, et seq. Further, these actions are being taken in response to the California Water Code (Section 13300, et seq.).

1.3 Administrative Record

This ESD will become part of the Administrative Record file (NCP 300.825 (a)(9)(2)). This file is available to the public at two locations. DDJC-Tracy, Building 100, Room 2, contains documents that have been issued within the past two years. DDJC-Tracy, Warehouse 1, Section 1, contains documents that are older than two years. The Administrative Record is available for viewing between the hours of 7 a.m. and 3 p.m. To arrange to view the Administrative Record, a visitor should call (209) 839-4065.

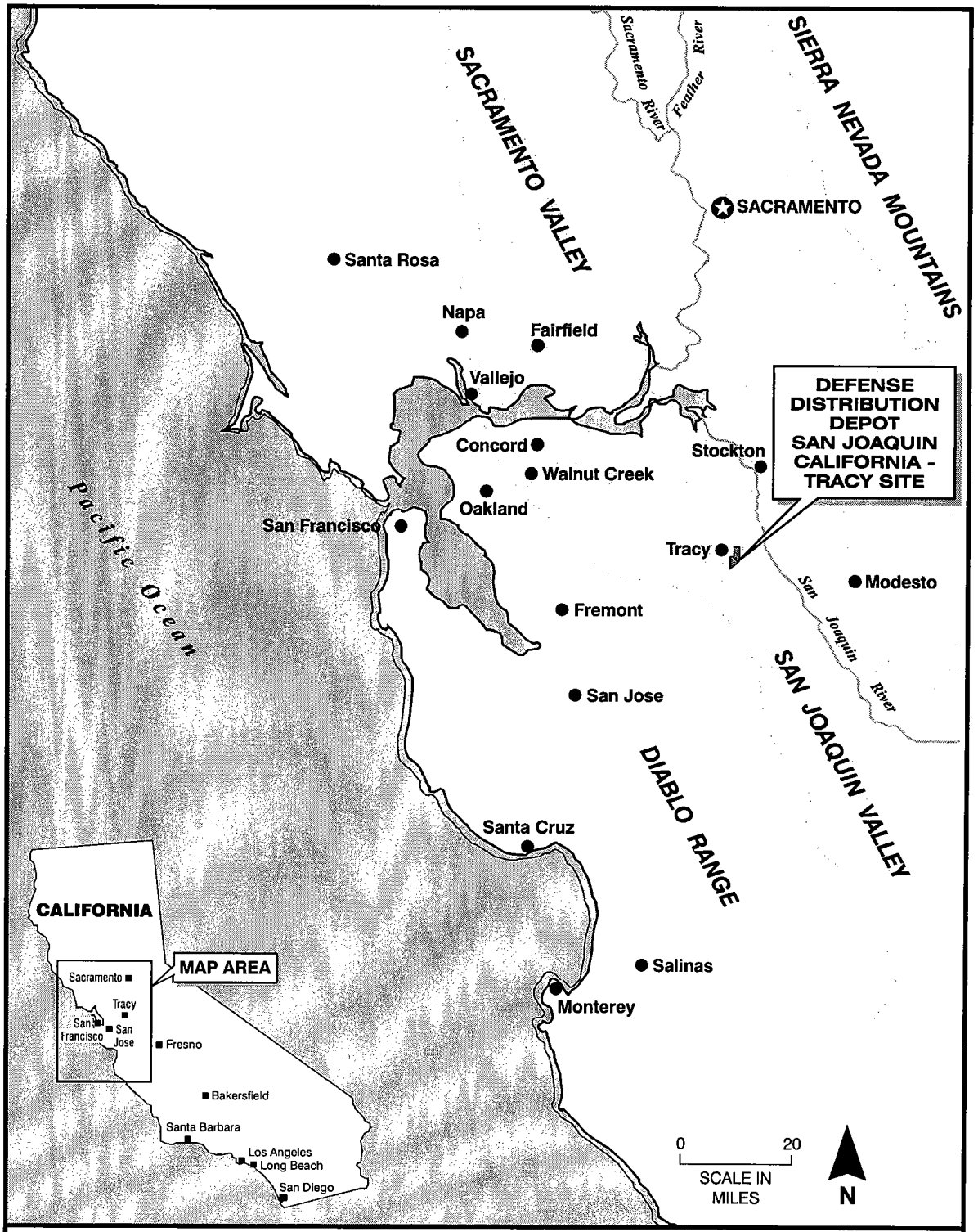
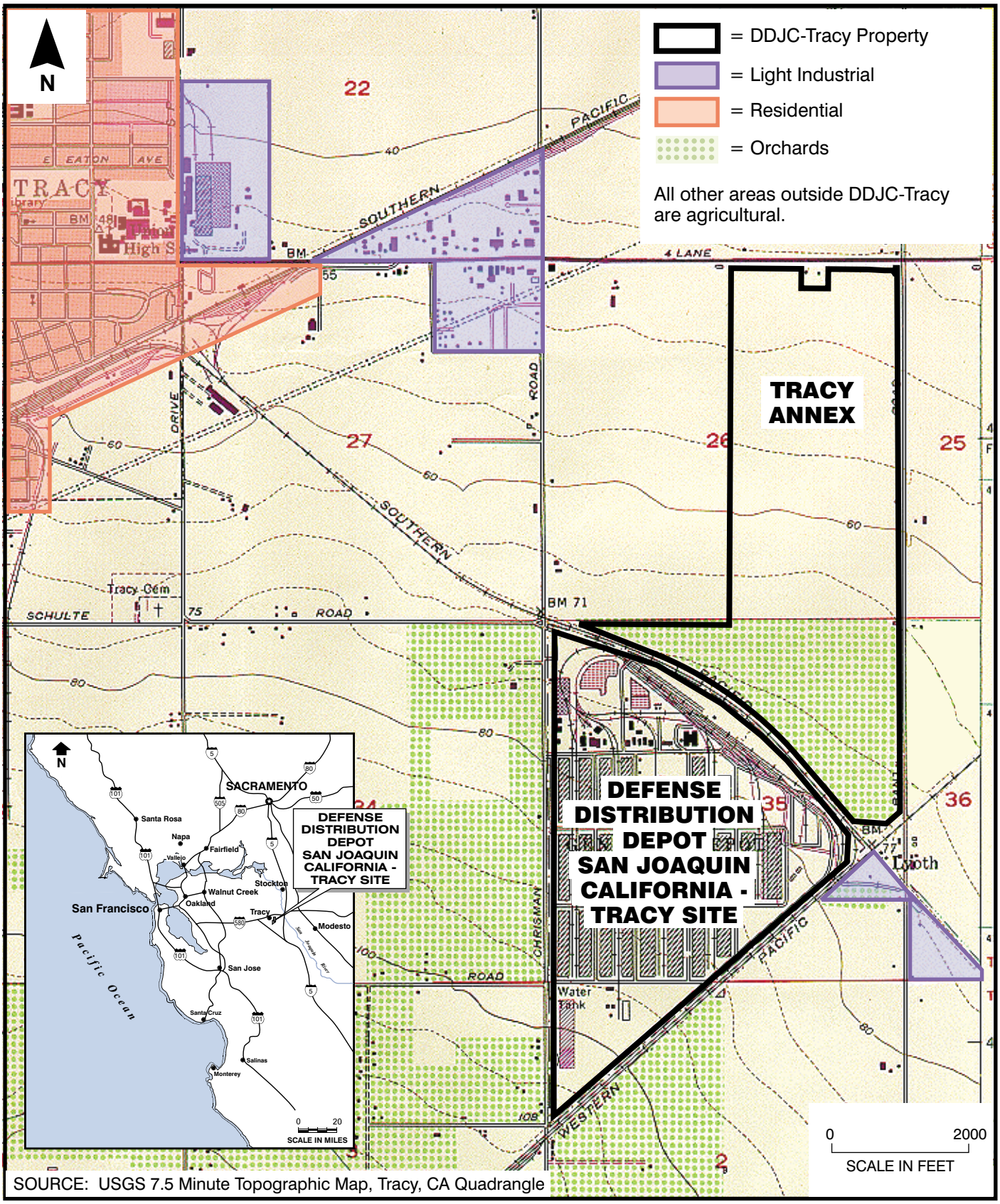


Figure 1-1. Location of DDJC-Tracy

Tracy\09-03-ESD\09-03-Tracy-ESD-loc-map.cdr - VMG 09/21/04 SAC

This page intentionally left blank



Tracy\09-03-ESD\09-03-Tracy-ESD-topo-map.cdr - VMG 09/21/04 SAC

Figure 1-2. Site Map, DDJC-Tracy

This page intentionally left blank

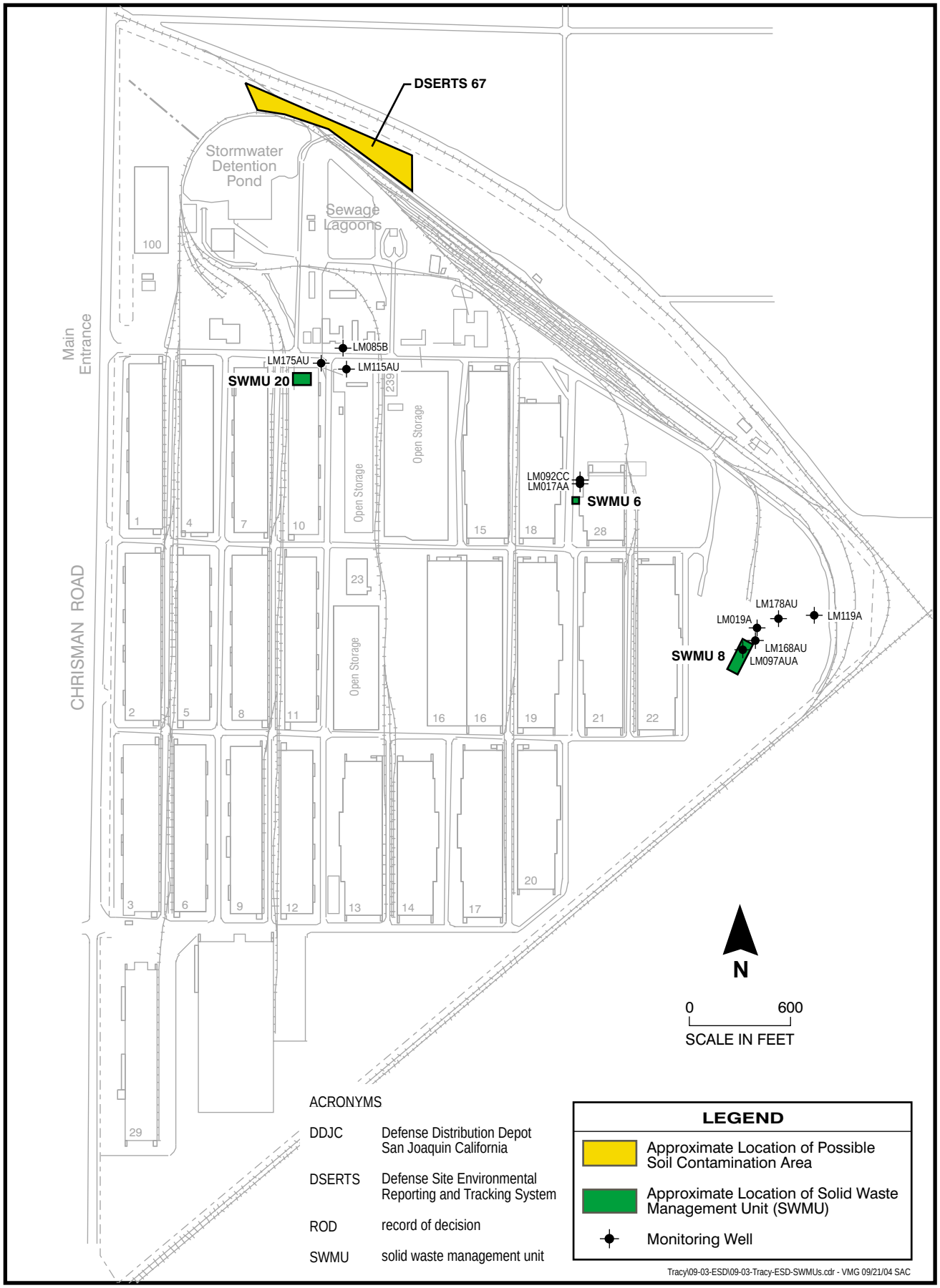


Figure 1-3. Locations of SWMU 6, SWMU 8, SWMU 20, and DSERTS 67, DDJC-Tracy

This page intentionally left blank

Table 1-1. Previous Decision Documents for DDJC-Tracy

Document	Description
Operable Unit No. 1, Record of Decision, Defense Distribution Region West-Tracy, California. Final. August (Woodward-Clyde Consultants, 1993).	• Focused ROD addressing groundwater concerns at DDJC-Tracy. • Superseded by the Sitewide Comprehensive ROD.
DDJC-Tracy Sitewide Comprehensive Record of Decision. Final. Prepared for U.S. Army Corps of Engineers, Huntsville, Alabama. Final. April (Radian International, 1998a).	• Modified the remedy for OU 1 groundwater. • Identified remedies for all soil sites at the depot.
Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area. Final. Prepared for U.S. Army Corps of Engineers, Huntsville, Alabama. July (URS, 2001).	• Revised cleanup standards for SWMUs 2 and 3 on the basis of the results from additional risk assessment. • Corrected cleanup standards for the Northern Depot Soils Area (DSERTS 67). Also modified requirements for the cover and added institutional controls. • Clarified institutional controls for SWMU 7, SWMU 33, and the Building 30 Drum Storage Area. Also clarified the institutional controls required at all sites with soil contamination in the event of a change in land use.
Amendment to the Sitewide Comprehensive Record of Decision. Final. Prepared for U.S. Army Corps of Engineers, Huntsville, Alabama. December (URS, 2003a).	• Revised cleanup standards for SWMU 4 on the basis of the results from additional risk assessment. Required land use controls including annual reporting and modification of the installation master plan. • Added option for overland flow discharge of treated groundwater to supplement the remedy for OU 1 groundwater. • Addressed DSERTS 72, a new site discovered after completion of the ROD. Required land use controls including annual reporting and modification of the installation master plan.

DDJC = Defense Distribution Depot San Joaquin California
DSERTS = Defense Site Environmental Reporting and Tracking System
OU = operable unit
ROD = record of decision
SWMU = solid waste management unit
URS = URS Group, Inc.

2.0 INSTITUTIONAL CONTROLS AT DDJC-TRACY

Land use controls are needed as institutional controls for a number of sites at DDJC-Tracy. Land use controls have previously been described in the ROD (Radian International, 1998a), *Addendum to Future Development Report* (Radian International, 1998b), *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area* (URS Group, Inc. [URS], 2001), and *Amendment to the Sitewide Comprehensive ROD* (URS, 2003a). This ESD amends the requirements for land use controls stated in earlier documents, but also summarizes the requirements for land use controls throughout the depot to provide a single comprehensive reference for understanding land use control commitments at DDJC-Tracy.

2.1 Site History, Contamination, and Selected Remedy

The DDJC-Tracy sites requiring land use controls are identified in Table 2-1 and shown on Figure 2-1. Figure 2-2 shows the portions of the depot and annex where groundwater use controls are required. The table provides information on the required land use controls and summarizes the environmental concerns at these sites.

2.2 Basis for Change

2.2.1 Changes and clarifications are needed for the land use controls at DDJC-Tracy because:

- Ongoing discussions between the U.S. Department of Defense (DoD) and U.S. EPA are defining more thorough procedures for land use controls (e.g., documentation and reporting requirements);

- Samples collected during the remedial action at SWMU 6 had higher concentrations than those collected prior to publication of the ROD and suggest the need for supplemental institutional controls (see Section 3 of this ESD); and

- Remedial activities at SWMU 20 identified site conditions that were not anticipated at the time the ROD was developed.

2.2.2 This ESD amends the requirements for all existing land use controls and adds land use controls to SWMUs 6 and 20.

2.3 Description of Significant Differences

2.3.0.1 This section amends land use control requirements for DDJC-Tracy. The following text was developed in cooperation with U.S. EPA. Section 2.3.1 describes the use of the Installation Master Plan as a mechanism to implement land use controls. Section 2.3.2 reiterates procedures previously published in the 2001 ESD (URS, 2001) to be followed in the event of a change of land use.

2.3.0.2 Land use controls as part of the selected remedy are amended at several DDJC-Tracy sites with soil contamination (these sites are identified in Table 2-1). Land use controls are required at these sites because the selected remedial actions will allow residual soil contamination to be left in place at concentrations that permit industrial land uses, but that will exceed concentrations that would allow for unrestricted reuse and unlimited exposure, including residential development. Land use controls will be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure. More specific information on the duration of land use controls is provided in Table 2-1. Additionally, residual contamination at selected sites (identified in Table 2-1) exceeds concentrations established in the ROD as being protective of groundwater quality. Land use controls for these sites are required to maintain the existing ground cover to minimize water infiltration. Also, additional land use controls are required for contaminated soil left in place at SWMU 2/3, SWMU 6, and DSERTS 67 that have contaminant concentrations in subsurface soil that could impact construction workers.

Table 2-1. Sites Requiring Land Use Controls, DDJC-Tracy

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
OU 1 Groundwater (on-Depot portion only)	Dieldrin Trichloroethene 1,1-Dichloroethene Tetrachloroethene	• Prevent domestic use of contaminated groundwater (untreated) • Protect infrastructure associated with OU 1 groundwater monitoring, extraction, treatment, and disposal • Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prevent exposure to contaminated groundwater	Groundwater use controls will be maintained on Depot property until the concentrations of hazardous substances allow for unrestricted reuse and exposure.	Groundwater remediation is currently underway.	New addition in this ESD.
SWMU 1/ Area 2	Beryllium PAHs	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Performed SVE to address VOCs. Other contaminants left in place pose a health risk under the residential scenario according to the baseline risk assessment.	Section 4.4 of ESD (URS, 2001) (note paragraph 4.4.2)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
SWMU 2/3	Dieldrin Beryllium Aluminum	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use • Prevent unprotected exposure of construction workers to contaminated soil	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Excavation addressed threat to groundwater and threat to ecological receptors. Residual contamination includes scattered areas with Dieldrin concentrations above industrial PRGs.	Section 4.4 of ESD (URS, 2001) (note paragraph 4.4.2)
SWMU 4	DDX Lead Arsenic Aluminum Manganese PCBs PAHs Dieldrin	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Wet season controls installed. Sediment in the pond has contaminant concentrations that pose a health risk under the residential scenario according to the baseline risk assessment.	Section 4.4 of ESD (URS, 2001) and Section 2.3 of ROD Amendment (URS, 2003a) (note paragraph 2.3.6)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
SWMU 6	Dieldrin Beryllium Benzo(a)pyrene Benzo(a)anthracene PCBs 2,3,7,8-TCDD	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use • Prevent unprotected exposure of construction workers to contaminated soil	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Excavation completed. Residual contamination includes Dieldrin concentrations above industrial PRGs.	Added in Sections 2 and 3 of this ESD

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
SWMU 7	1,2-Dichloroethene TCE Bis(2-ethylhexyl)phthalate 2,4-D Dieldrin Linuron Simazine Chlordane DDE DDD Benzo(a)pyrene Benzo(a)anthracene Beryllium PCBs 2,3,7,8-TCDD	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures), existing structures, and pavement • Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure • Follow defined procedures in the event of a change in land use • Install warning signs • Ensure controls are restored following construction activities	• Prohibit residential, day care, play area, or school use • Prevent unprotected exposure of construction workers to contaminated soil • Maintain existing surface to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure. Land use controls also will be maintained until it has been demonstrated that vadose zone soil concentrations do not pose a threat to the underlying water quality.	Warning signs have been installed and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report* (Radian International, 1998b) and *Comprehensive Remedial Investigation/ Feasibility Study Report* (Montgomery Watson, 1996)	Section 4.4 and 4.6 of ESD (URS, 2001) and *Addendum to Future Development Report.* Contamination left in place poses potential health risk according to the baseline risk assessment. The water quality assessment in the RI/FS report identified a potential threat to groundwater quality.

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
SWMU 20	TCE TPHD PAHs PCBs Aluminum	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) and existing structures • Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure • Follow defined procedures in the event of a change in land use • Ensure controls are restored following construction activities	• Prohibit residential, day care, play area, or school use • Maintain existing surface to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure. Land use controls also will be maintained until it has been demonstrated that vadose zone soil concentrations do not pose a threat to the underlying water quality.	Excavation completed. Additional contamination may remain under Buildings 10 and 26 and below 5th Street. Removal of these buildings or 5th Street may increase the risk to groundwater quality (additional characterization would be warranted).	Added in Sections 2.0 and 5.0 of this ESD
SWMU 24	Toluene Acetone PAHs TPH-G TPH-D PCBs Aluminum Manganese	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Bioventing is being performed, but residual PCB, TPH, aluminum, and manganese contamination is to be expected. These contaminants pose a risk under the residential scenario according to the baseline risk assessment.	Section 4.4 of ESD (URS, 2001) (note paragraph 4.4.2)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
SWMU 33	Xylenes Diethylphthalate Di-n-butylphthalate Naphthalene Aldrin Carbaryl Dieldrin Methiocarb TPHD	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures), existing structures, and pavement • Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure • Follow defined procedures in the event of a change in land use • Install warning signs • Ensure controls are restored following construction activities	• Maintain existing surface to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone	Land use controls also will be maintained until it has been demonstrated that vadose zone soil concentrations do not pose a threat to the underlying water quality.	Excavation completed along with grouting of the industrial waste pipeline to reduce infiltration. Warning signs have been installed and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Contamination left in place poses a threat to water quality as noted in the RI/FS report.	Section 4.4 and 4.8 of ESD (URS, 2001), *Addendum to the Future Development Report* (Radian International, 1998b) and *Comprehensive Remedial Investigation/ Feasibility Study Report* (Montgomery Watson, 1996)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
DSERTS 72	DDX Dieldrin	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Post excavation sampling identified residual contaminant concentrations above residential PRGs.	Section 4.3 of the ROD Amendment (URS, 2003a) (note paragraph 4.3.4)
Building 30 Drum Storage Area	Benzyl Alcohol Bis(2-ethylhexyl)phthalate Diethylphthalate Di-n-butylphthalate	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures), existing structures, and pavement • Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure • Follow defined procedures in the event of a change in land use • Install warning signs • Ensure controls are restored following construction activities	• Maintain existing surface to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone	Land use controls also will be maintained until it has been demonstrated that vadose zone soil concentrations do not pose a threat to the underlying water quality.	Warning signs have been installed and current land use controls (including existing construction notification requirements) are documented in *Addendum to Future Development Report*. Contamination left in place poses a threat to water quality as noted in the RI/FS report.	Section 4.4 and 4.7 of ESD (URS, 2001) and *Addendum to Future Development Report* (Radian International, 1998b) and *Comprehensive Remedial Investigation/ Feasibility Study Report* (Montgomery Watson, 1996)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
Northern Depot Soils Area (DSERTS 67)	Arsenic Manganese	• Establish notification procedure for construction activities or land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures); existing structures; aggregate base, gravel, and asphalt covers; and vegetation. • Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure • Follow defined procedures in the event of a change in land use • Install warning signs • Ensure controls are restored following construction activities	• Prohibit residential, day care, play area, or school use • Prevent unprotected exposure of construction workers to contaminated soil	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	Additional aggregate cover has been installed at DSERTS 67. Warning signs have been installed and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Contamination left in place poses potential health risk according to the baseline risk assessment.	Sections 3.4 and 4.4 of ESD (URS, 2001) and *Addendum to Future Development Report* (Radian International, 1998b)

Table 2-1. (Continued)

Site	COCs	Land Use Controls	Purpose of Controls	Duration	Actions to Date	Documentation
Eastern Depot Soils Area	Aluminum Arsenic Chlordane Dieldrin DDX PCBs	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	None	Section 4.4 of the ESD (URS, 2001)
Southern Depot Soils Area	Dieldrin	• Establish notification procedure for land use changes in the IMP • Maintain administrative controls (i.e., IMP appendix and notification procedures) • Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure • Follow defined procedures in the event of a change in land use	• Prohibit residential, day care, play area, or school use	Land use controls will be maintained until the concentrations of hazardous substances in the soil are at levels that allow for unrestricted reuse and exposure.	None	Section 4.4 of the ESD (URS, 2001)

Table 2-1. (Continued)

COC	=	contaminant of concern	PRG	=	preliminary remediation goal
2,4-D	=	2,4-dichlorphenoxyacetic acid	RI/FS	=	remedial investigation/feasibility study
DDD	=	4,4′-dichlorodiphenyldichloroethane	ROD	=	record of decision
DDE	=	4,4′-dichlorodiphenyldichloroethene	SVE	=	soil vapor extraction
DDJC	=	Defense Distribution Depot San Joaquin California	SWMU	=	solid waste management unit
DDX	=	sum of the concentrations of DDD, DDE, and DDT	TCDD	=	2,3,7,8-tetrachlorodibenzo-p-dioxin
DSERTS	=	Defense Site Environmental Reporting and Tracking System	TCE	=	trichloroethene
ESD	=	explanation of significant differences	TPH	=	total petroleum hydrocarbons
IMP	=	installation master plan	TPHD	=	total petroleum hydrocarbons in the diesel range
OU 1	=	Operable Unit 1	TPHG	=	total petroleum hydrocarbons in the gasoline range
PAH	=	polycyclic aromatic hydrocarbon	URS	=	URS Group, Inc.
PCB	=	polychlorinated biphenyl	VOC	=	volatile organic compound

2.3.0.3 A remedial action objective (RAO) of land use controls for all of the sites is to prohibit residential use of the property, including use for day care. Land use controls for sites with potential groundwater impacts also prevent surface-disturbing activities that would compromise the ground cover that currently serves as a barrier to infiltration through contaminated soil at these sites.

2.3.0.4 Land use controls consist of administrative measures selected by the DLA to limit exposure to residual hazardous substances. These measures restrict future land use and ensure the effectiveness of the remedy at all sites. The DLA shall not modify or terminate land use controls, implementation actions, or modify land use without approval by U.S. EPA and the State of California. The DLA shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the land use controls or any action that may alter or negate the need for land use controls. Performance measures at all sites with land use controls will include the following:

- Develop an appendix to the Installation Master Plan (IMP) (see Appendix F of this ESD) detailing:
  - Specific controls required at each site and explaining that controls are required because of the presence of pollutants or contaminants;
  - The current land users and uses of the site; and
  - The geographic control boundaries, and the objectives of the controls.

  The IMP appendix reflects the applicable use controls, with all sites restricted from use for residential development, play areas, or day care facilities. The section describing the specific controls also refers the reader to the DDJC-Tracy Environmental Project Manager if more information is needed. The IMP appendix contains a map indicating all areas where contaminated soil is located and the land use controls in effect for each of those areas. Section 2.3.1 of this ESD describes the IMP appendix and administrative procedures more fully.
- Notify the regulatory agencies 45 days in advance of any land use change. Section 2.3.2 discusses more fully procedures related to potential land use changes.
- Any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls, will be addressed by DLA as soon as practicable, but in no case will the process be initiated later than 15 days after the DLA becomes aware of the breach.
- The DLA will notify U.S. EPA and California as soon as practicable, but no later than 15 days after discovery of any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls. The DLA will notify U.S. EPA and California regarding how the DLA has addressed or will address the breach within 15 days of sending U.S. EPA and California notification of the breach.
- Maintain existing administrative controls while land use controls are in place.
- Conduct periodic monitoring (at least annually) and take prompt action to restore, repair, or correct any deficiencies or failures identified with the land use controls. A different monitoring schedule may be agreed upon according to the schedule provisions of the FFA, if all parties agree and if the change reasonably reflects the risk presented by the site.

2.3.0.5 The DLA is responsible for implementing, monitoring, maintaining, and enforcing the identified controls. If the DLA determines that it cannot meet specific land use control requirements, it is understood that the remedy may be reconsidered and that additional

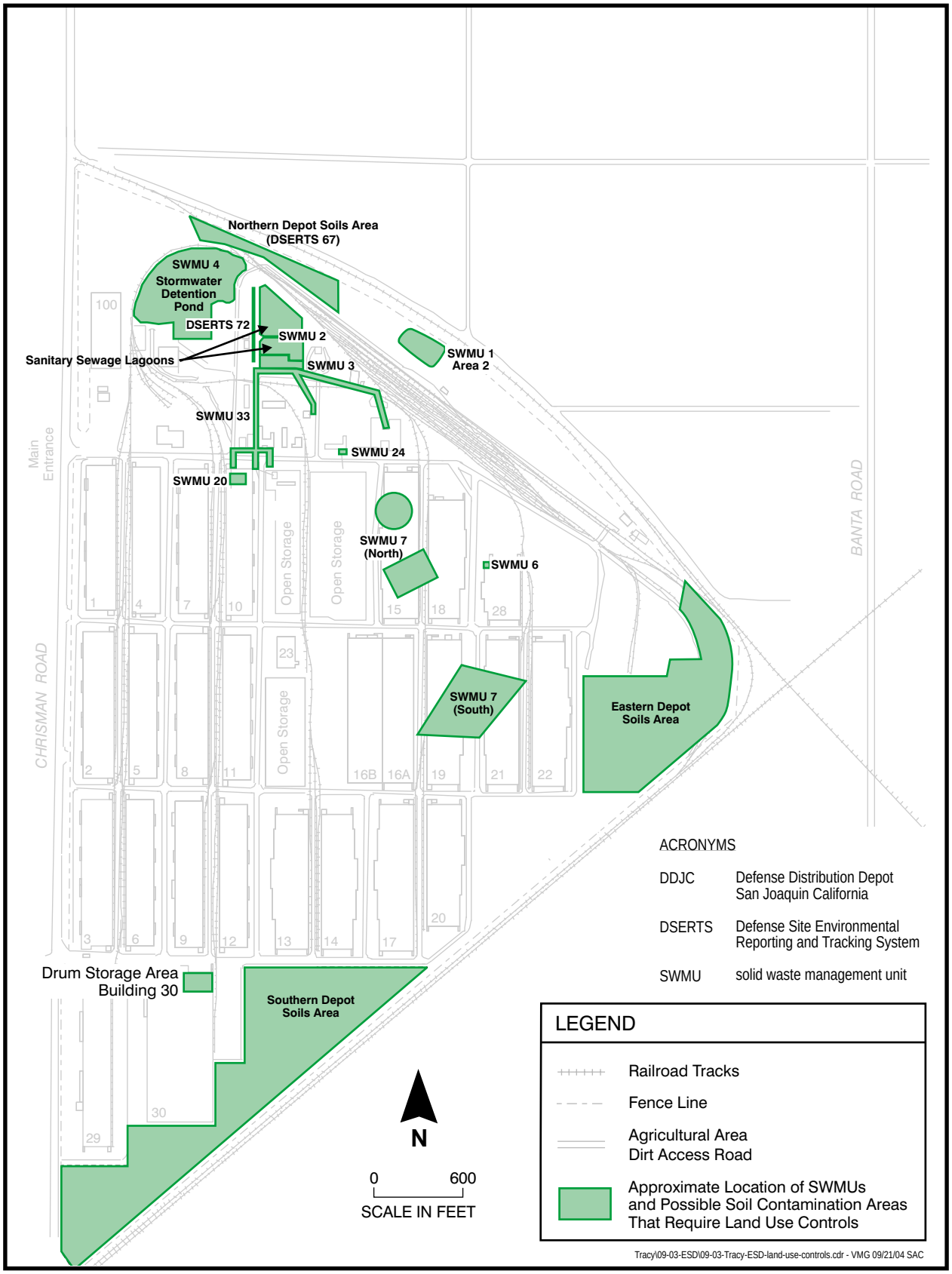


Figure 2-1. Soil Sites Requiring Land Use Controls, DDJC-Tracy

This page intentionally left blank

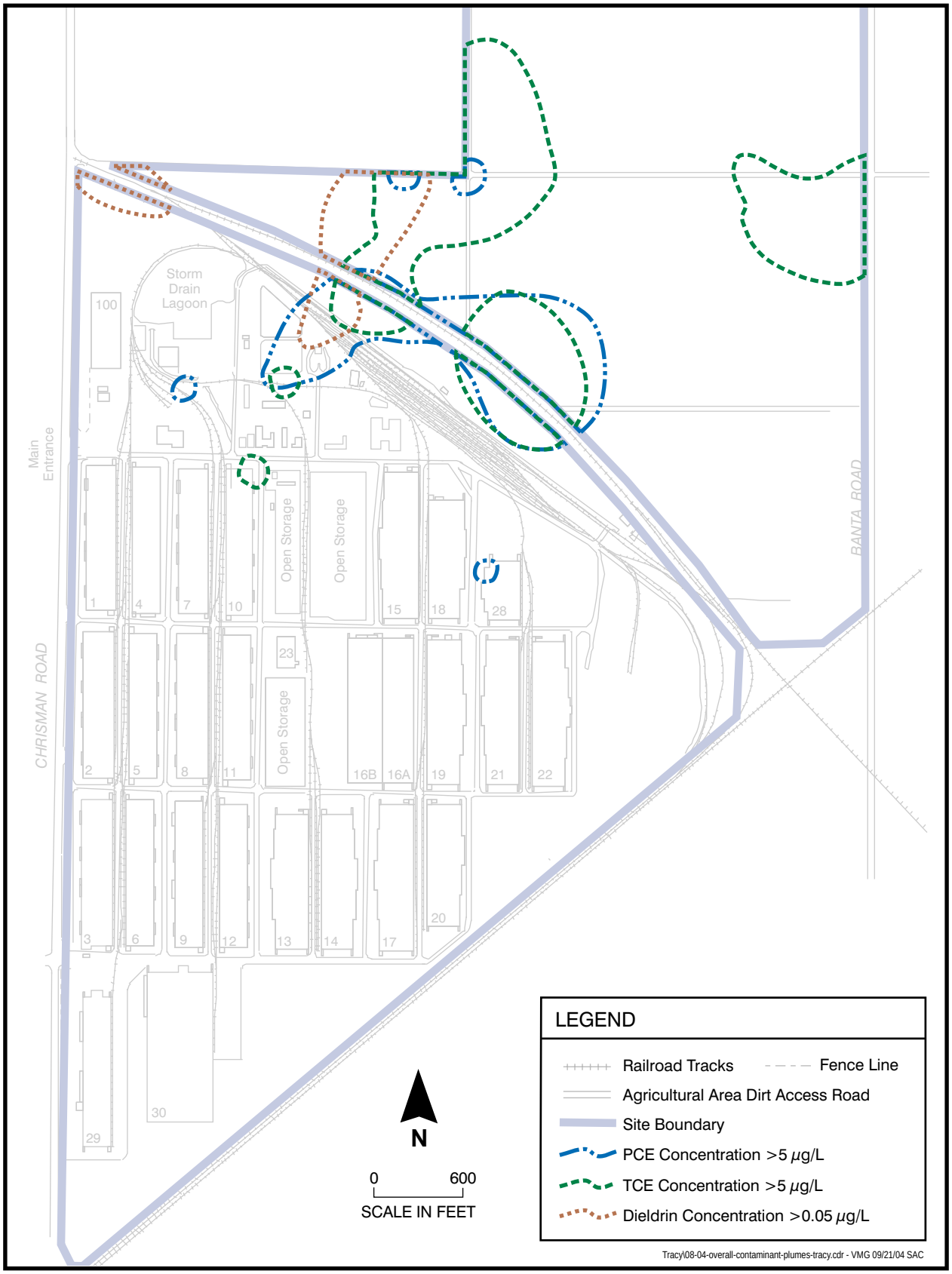


Figure 2-2. OU 1 Groundwater (On-Depot Portion of Plumes), DDJC-Tracy

This page intentionally left blank

measures may be required to ensure the protection of human health and the environment.

2.3.0.6 In addition, to assure the regulatory agencies and the public that DLA will fully comply with and be accountable for the performance measures identified herein, DLA will submit an annual monitoring report to U.S. EPA and the State of California in a timely manner. The annual monitoring report will review the status of land use controls and/or other remedial actions, including the operation, maintenance, and monitoring thereof, and how any land use control deficiencies or inconsistent uses have been addressed. The report will be included as a section in the DDJC-Tracy Well Monitoring Program Annual Report, and will be filed in the Information Repository.

2.3.1 Components of the DDJC-Tracy Installation Master Plan and Existing Administrative Procedures

2.3.1.1 The first step in restricting specific types of development at impacted sites will be an appendix to the DDJC-Tracy IMP. DLA installations require this comprehensive planning document for the establishment and maintenance of the institutional and engineering controls. The IMP appendix will identify and describe all land use controls to ensure that these sites will not be inappropriately used (e.g., as residential developments, play areas, or day care facilities). The IMP appendix will implement zone-like requirements at DDJC-Tracy. The IMP and appendix will be kept in the office of the DDJC-Tracy Facility Engineer.

2.3.1.2 The appendix to the IMP will establish the constraints against residential development in accordance with Table 2-1 of this ESD. The appendix to the IMP will include a map showing the location of the land use control areas at which specific types of development will be prohibited. DDJC-Tracy will enforce these constraints on specific developments through administrative review procedures already in place.

2.3.1.3 One procedure to be included is use of the IMP Project Approval Form. This form must be filed and approved before the start of any building project at DDJC-Tracy. The approval of the IMP Project Approval Form requires a comparison of the building site with the constraints outlined in the IMP appendix. Notification of the proposed activities to all signatories to the ROD is required if the activities are within the areas identified in Table 2-1. The project approval form serves as the document for communicating construction constraints to the appropriate offices. Any components of the proposed project that are inconsistent with the constraints at the site will result in the disapproval of the project approval form unless the requester makes appropriate modifications to the building plans. The DDJC-Tracy Facility Engineer is responsible for the final approval of building projects through this review process.

2.3.2 Change in Land Use

2.3.2.1 In the unanticipated event of property lease or transfer to a third party, the procedures described in the *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area* (URS, 2001) will be followed for all of the sites identified in Table 2-1. For ease of reference, these procedures are repeated here.

2.3.2.2 Any changes in land use for property associated with the sites identified in Table 2-1 requires site characterization (existing data from the RI/FS may be used) and, at a minimum, an environmental assessment of the property. Many decisions documented in the ROD were based on the current land use (industrial use scenario). In general, a change in land use needs to be evaluated to ensure that contamination left in place at these sites would not pose an unacceptable risk under the new exposure scenarios.

2.3.2.3 It should be noted that the baseline risk assessment (Montgomery Watson, 1997b) indicates that the concentrations of arsenic at SWMUs 10A, 11, 12, 14, and 15 are within the

range of concentrations typical for the western United States (Shacklette and Boerngen, 1984). No depot activities at these sites were identified that would have resulted in arsenic contamination. Therefore the ROD required no land use controls for these sites, although an elevated risk would exist under the residential scenario.

2.3.2.4 Land use changes for sites posing potential risk to future receptors require characterization and environmental assessment in accordance with Army Regulation (AR) 200-2, AR 200-1, and AR 415-15. These procedures require DDJC-Tracy to consult the Administrative Record and characterize the site before the specified property on the depot could be used for a nonindustrial purpose.

2.3.2.5 The DLA will provide notice to U.S. EPA and the State of California at least six months prior to any transfer or sale of any property subject to institutional controls so that U.S. EPA and California can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective institutional controls. If it is not possible for the facility to notify U.S. EPA and California at least six months prior to any transfer or sale, then the facility will notify U.S. EPA and California as soon as possible but no later than sixty (60) days prior to the transfer or sale of any property subject to institutional controls. In addition to the land transfer notice and discussion provisions above, the DLA further agrees to provide U.S. EPA and California with similar notice, within the same time frames, as to federal-to-federal transfer of property. The DLA shall provide a copy of executed deed or transfer assembly to U.S. EPA and California.

2.3.2.6 Nonclosure transfers of DoD property are guided by community input on land use, as provided by the local government land use planning agency. In the event that no community land use plan is available at the time of property transfer, DoD will consider a range of reasonably anticipated future land uses in the transfer process. These assumptions allow the DoD (in conjunction with regulatory agencies) to determine the need for institutional controls. Environmental process requirements and restrictions (including institutional controls) at installations subject to transfer are described in 42 U.S. Code (USC) Section 9620 *et seq*. (CERCLA 120) Paragraph (h). This statute establishes hazardous substance notification and deed content requirements. 40 Code of Federal Regulation (CFR) Section 373 *et seq*. establishes the regulatory notification and reporting requirements. These statutes require an environmental baseline survey (EBS) and a finding of suitability to transfer (FOST) prior to the transfer of properties subject to the NCP. In accordance with Title 22, California Code of Regulations (CCR), Section 67391.1, DTSC cannot consider property owned by the federal government to be suitable for transfer to nonfederal entities where hazardous wastes/constituents/substances remain at levels that are not suitable for unrestricted land use, unless appropriate land use covenants have been executed and recorded in the county.

2.3.2.7 The EBS is a thorough review and compilation of environmental records and other activities related to the environmental condition of property at the time of the EBS. It provides notification of storage, release, or disposal of hazardous substances, as required by CERCLA, and supports the preparation of the FOST. The preparation of the EBS includes regulatory review and coordination.

2.3.2.8 The DoD Component Disposal Agent will ensure that the FOST and other transfer documents, along with the specific land use control strategy or plan for the subject real property, reflect the use restrictions and enforcement mechanisms specified in the remedial decision document. The transfer document will also include a description of the assumed industrial use that was used to develop the remedy and to make the remedial decision in the ROD. The DoD Component Disposal Agent will also ensure that institutional controls and other layered implementation and enforcement mechanisms, appropriate to the jurisdiction where the property is located, are either in place prior to the transfer or will be put in place by the transferee as a condition of the transfer. Examples of layered implementation and enforcement mechanisms include real estate

mechanisms, deed restrictions, easements, inspections or monitoring, zoning, and state land use control registry.

2.3.2.9 Prior to the preparation of a FOST, the regulatory agencies will be notified of the intent to initiate the FOST process. The preparation of the FOST will also include regulatory review and coordination along with public review and notification.

2.3.2.10 Each transfer of fee title from the United States will include a CERCLA 120(h)(3) covenant that will have a description of the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the performance measure goals and objectives. The environmental restrictions in CERCLA 120(h)(3) are included in the deed for any property where hazardous substances have been stored for one or more years or where hazardous substances have been released or disposed of on the property. Each deed will also contain a reservation of access to the property for the DLA, U.S. EPA, and California, and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the DLA Installation Restoration Program (IRP) and the Federal Facility Agreement (FFA). The deed will contain appropriate provisions to ensure that the restrictions continue to run with the land and are enforceable by the DLA. These provisions include:

- **Lease Restrictions**: During the time between the adoption of this ESD and deeding of the property, equivalent restrictions are being implemented by lease terms, which are no less restrictive than the use restrictions and controls described above, in this ESD. These lease terms shall remain in place until the property is transferred by deed, at which time they will be superseded by the institutional controls described in this ESD.

- **Notices**: Concurrent with the transfer of fee title from the DLA to transferee, information regarding the environmental use restrictions and controls will be communicated in writing to the property owners and to appropriate state and local agencies to ensure such agencies can factor such conditions into their oversight and decision-making activities regarding the property.

2.3.2.11 The DoD expects the transferee and subsequent owners to abide by the restrictions stated in the transfer documents, and will work with all appropriate federal, state, and local agencies and prospective property owners to ensure the ongoing effectiveness of institutional controls. If DoD becomes aware of action or inaction by any future owner that causes or threatens a release or results in the ineffective performance of the remedy, DoD reserves the right to perform any additional cleanup necessary to protect human health and the environment and to recover the costs of such cleanup from that owner under the terms of the transfer document or other authority. Additional costs (e.g., regulatory oversight) may be incurred by the transferee as determined during the transfer process.

2.4 Support Agency Comments

DDJC determined that the changes represented in this ESD did not fundamentally alter the remedial actions and proposed documenting these in an ESD in the 6 August 2003 RPM meeting. This ESD was added to the FFA schedule in October 2003. Responses to comments received for the draft, draft final, and final versions of this ESD are provided following the appendices to this document.

2.5 Statutory Determinations

The modified remedy satisfies the requirements of CERCLA §121.

2.6 Public Notification Compliance

Consistent with the requirements of 40 CFR §300.435, this ESD and supporting information are being made available to the public in the administrative record and information repository. A notice summarizing the ESD, including reasons for the differences, will be

published in the *Tracy Press* and the *Stockton Record* in October 2004 and included in the administrative record.

3.0 SWMU 6

This section reviews contamination left in place following remedial activities at SWMU 6 and evaluates the need for institutional controls.

3.1 Site History, Contamination, and Selected Remedy

SWMU 6 is the site of a former 250-gallon concrete sump built sometime after the completion of Building 28 in 1968 (Figure 1-3). This building was once used to repackage materials with damaged containers, and the residual waste was emptied into the sump. Waste was then pumped into 55-gallon drums and removed to a Class I disposal site. In 1977, the sump was abandoned in place and filled with sand. The sump was removed in 1988. During the remedial investigation, pesticide and herbicide contamination was detected in soil samples collected from between the former sump and the water table (Montgomery Watson, 1996).

3.1.1 Selected Remedy in the ROD

3.1.1.1 Previous vadose zone modeling results indicated that concentrations of pesticides and herbicides detected in soils at SWMU 6 posed a threat to background groundwater quality (Montgomery Watson, 1996). However, the baseline risk assessment results did not find potential human health or ecological risks at SWMU 6 (Montgomery Watson, 1997b). The only RAO for SWMU 6 was to prevent groundwater contamination caused by the migration of pesticides (Dieldrin, Endrin, Heptachlor, and Lindane) and herbicides (Dicamba and trichlorophenoxyacetic acid [2,4,5-T]) (Radian International, 1998a). The remedy selected in the ROD required excavation and off-site disposal of approximately 100 cubic yards of soil potentially contaminated with pesticides and herbicides (Radian International, 1998a). The ROD estimated an excavation footprint approximately 15 feet by 10 feet, which would be excavated to approximately 18 feet below ground surface (bgs). Clean soil imported from off site was to be used to backfill the excavation.

3.1.1.2 The ROD required that confirmation samples be collected and analyzed for the contaminants of concern (COCs) listed in the ROD to ensure that cleanup standards had been achieved. Excavation and disposal were intended to permanently remove all known soil with contaminant concentrations exceeding cleanup standards. The selected alternative would permanently prevent the migration of any known soil COCs to groundwater. Groundwater sampling at monitoring wells LM017AA and LM092CC under the DDJC-Tracy Well Monitoring Program was also required by the ROD to evaluate the effectiveness of the selected remedy (see Figure 1-3 for well locations).

3.1.1.3 The ROD-specified cleanup standards, which are listed below, were developed to protect background groundwater quality.

Analytes	SWMU 6 Soil Cleanup Standards (µg/kg)
Dicamba	10
Dieldrin	3
Endrin	3
Heptachlor	1.5
Lindane	1.7
2,4,5-T	5

SWMU = solid waste management unit
2,4,5-T = trichlorophenoxyacetic acid
µg/kg = micrograms per kilogram

3.1.2 Actions Taken in Response to ROD Requirements

3.1.2.1 Excavation activities at SWMU 6 began on 22 June 1999 within the proposed excavation footprint (10 feet by 15 feet) described in the ROD (Figure 3-1). The base of the initial excavation was 18 feet, as required by the ROD. Following the completion of the initial excavation, six initial soil samples were collected, including one from each of the four excavation sidewalls and two from the excavation bottom (IT Corporation, 2002a).

3.1.2.2 Analytical results for three of the initial confirmation samples showed concentrations of COCs exceeding ROD-specified cleanup

standards (IT Corporation, 2002a). Lindane was detected at a concentration of 2 micrograms per kilogram (µg/kg) in soil sample DP0034, which was collected from the southern sidewall. 2,4,5-T was detected at a concentration of 16 µg/kg in soil sample DP0037, which was collected from the northern bottom of the excavation. Sample DP0038, collected from the western sidewall, contained concentrations of 2,4,5-T at 12 µg/kg and Dieldrin at 160 µg/kg.

3.1.2.3 Based on these initial sampling results, additional contaminated soil was removed from the northern bottom and southern sidewall of the excavation. Additional excavation was not conducted for the western sidewall at location DP0038 because an in-service, 48-inch storm drain line is adjacent to the excavation (IT Corporation, 2002a). All excavation and confirmation soil sampling activities were completed on 15 July 1999. The final excavation depth was approximately 19 feet bgs. Figure 3-1 shows the final excavation footprint. Backfilling of the excavation and waste off-hauling were completed on 9 September 1999, and the surface was restored to its pre-construction condition, including asphalt paving. Approximately 245 cubic yards of soil (more than double the volume anticipated in the ROD) were excavated, transported, and disposed of off site at a Class II disposal facility.

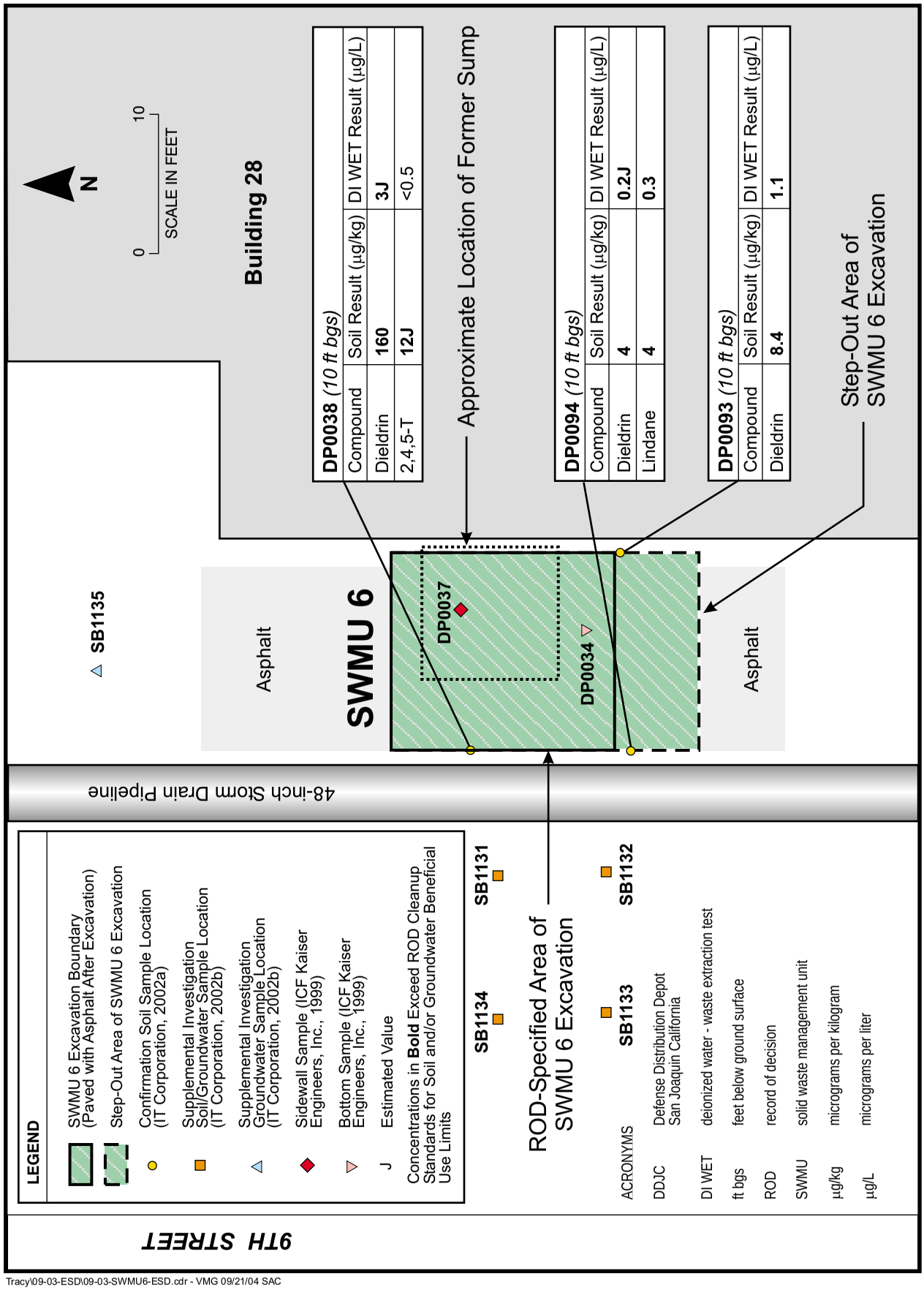
3.1.2.4 Analytical results for the final round of confirmation sampling (step-out sampling) showed that residual contamination remains in the eastern and western sidewalls of the southern over-excavation at sample locations DP0093 and DP0094 (Figure 3-1). No additional excavation could be conducted at DP0093 or DP0094 and initial sample location DP0038 because of the proximity to Building 28 to the east and the 48-inch storm drain line to the west, respectively (IT Corporation, 2002a). Table 3-1 lists the soil sample locations at which Dieldrin, Lindane, and 2,4,5-T remain in soil at concentrations exceeding ROD cleanup standards. Table 3-2 provides the corresponding analytical results of the waste extraction test using deionized water (DI WET).

3.2 Basis for Change

Potential impacts associated with contamination left in place were evaluated to assess the need for further actions or institutional controls. Section 3.2.1 describes supplemental sampling efforts performed to better define the extent of residual contamination. Section 3.2.2 provides an updated water quality assessment to evaluate potential impacts to groundwater quality. Section 3.2.3 provides the conclusions from additional sampling and water quality assessment efforts. Table 3-3 summarizes the assessment of the protection of human health and the environment.

3.2.1 Supplemental Soil Sampling Efforts to Better Define the Extent of Residual Contamination

A supplemental sampling effort was performed to further evaluate potential impacts to groundwater from contaminants left in place (IT Corporation, 2002b). This sampling effort collected soil samples at three depths from four soil borings (SB1131 through SB1134) to the west of the excavation (see Figure 3-1). Samples collected from SB1133 and SB1134 were considered step-out borings and were archived by the analytical laboratory pending the initial analytical results for samples collected from SB1131 and SB1132. One grab groundwater sample from each boring also was collected. A grab groundwater sample only was collected from a soil boring (SB1135) downgradient to the north of the former SWMU 6 sump. This groundwater sample was used to assess whether COCs have leached from the soil and are migrating downgradient in groundwater. The analytical results for all soil and groundwater samples collected during the supplemental investigation (SB1131, SB1132, and SB1135) were below ROD-specified soil cleanup standards and beneficial use limits for all ROD-specified COCs in groundwater (IT Corporation, 2002b). Because contaminants were not detected in the soil samples collected from SB1131 and SB1132, DI WET analyses were not performed on those samples, and the step-out soil and groundwater samples collected from SB1133 and SB1134 were not analyzed. Because



Tracy\09-03-ESD\09-03-SWMU6-ESD.cdr - VMG 09/21/04 SAC

Figure 3-1. Residual Soil Contamination Above ROD Cleanup Standards and DI WET Results, SWMU 6, DDJC-Tracy

This page intentionally left blank

Table 3-1. Final Dieldrin, Lindane, and 2,4,5-T Concentrations Exceeding ROD Soil Cleanup Standards, SWMU 6, DDJC-Tracy

Sample ID	Location	Dieldrin (µg/kg)	Lindane (µg/kg)	2,4,5-T (µg/kg)
DP0038	Western Sidewall; 10 feet bgs	**160**	<23	**12J**
DP0093	Eastern Sidewall; 10 feet bgs	**8.4**	<2	<5.8
DP0094	Western Sidewall; 10 feet bgs	**4**	**4**	<5.9
	Soil Cleanup Standards	3	1.7	5

bgs = below ground surface
DDJC = Defense Distribution Depot San Joaquin California
ID = identification
J = estimated value
ROD = record of decision
SWMU = solid waste management unit
µg/kg = micrograms per kilogram
2,4-5-T = trichlorophenoxyacetic acid

Concentrations in **bold** exceed soil cleanup standards.

Table 3-2. DI WET Analytical Results for Confirmation Samples, SWMU 6, DDJC-Tracy

Sample ID	Location	Dieldrin (µg/L)	Lindane (µg/L)	2,4,5-T (µg/L)
DP0038	Western Sidewall; 10 feet bgs	**3J**	<1.5	<0.5
DP0093	Eastern Sidewall; 10 feet bgs	**1.1**	<0.3	Not Analyzed
DP0094	Western Sidewall; 10 feet bgs	**0.2J**	**0.3**	Not Analyzed
	Groundwater Beneficial Use Limits	0.002	0.03	None Established

bgs = below ground surface
DDJC = Defense Distribution Depot San Joaquin California
DI WET = deionized water waste extraction test
ID = identification
J = estimated value
SWMU = solid waste management unit
µg/L = micrograms per liter
2,4-5-T = trichlorophenoxyacetic acid

Concentrations in **bold** exceed groundwater beneficial use limits.

Table 3-3. Summary of Basis for Change in Cleanup Standards for SWMU 6, DDJC-Tracy

Topic	Dieldrin	Lindane	2,4,5-T
Risk to Human Health from Exposure to Soil	The maximum residual soil concentration is 160 µg/kg. This exceeds the U.S. EPA Region 9 PRG for industrial use (110 µg/kg).	The maximum residual soil concentration is 4 µg/kg. The baseline risk assessment did not identify Lindane as posing a risk to human health (Montgomery Watson, 1997b). No U.S. EPA Region 9 PRG has been established for Lindane.	The maximum residual soil concentration is 12 µg/kg. The baseline risk assessment did not identify 2,4,5-T as posing a risk to human health (Montgomery Watson, 1997b). No U.S. EPA Region 9 PRG has been established for 2,4,5-T.
Groundwater Quality Issues			
Frequency of Detection Above the Cleanup Standard in Confirmation Samples	Reported above the cleanup standard in three of six confirmation samples from the final sidewalls.	Reported above the cleanup standard in two of six confirmation samples from the final sidewalls.	Reported above the cleanup standard in one of six confirmation samples from the final sidewalls.
Residual Mass Estimate	5.98 grams	0.595 grams	0.720 grams
DI WET Analysis	DI WET analysis was performed on all three soil samples in which Dieldrin was reported. DI WET results ranged from 0.2 µg/L (for 4 µg/kg in soil) to 3 µg/L (for 160 µg/kg in soil).	DI WET analysis was performed on three soil samples; however, only one of the three had reportable concentrations of Lindane. The DI WET result was 0.3 µg/L (for the 4 µg/kg in soil).	DI WET analysis was performed on the single sample where 2,4,5-T was reported. The DI WET result was <0.5 µg/L (see Table 3-2).
SESOIL/VLEACH Modeling Results	Modeling results indicate the maximum concentration of Dieldrin in groundwater is less than the beneficial use limit (0.002 µg/L) and less than the method detection limit (0.006 µg/L).	Modeling results indicate the maximum concentration of Lindane is less than the beneficial use limit (0.03 µg/L) and less than the method detection limit (0.006 µg/L).	Modeling results indicate the maximum 2,4,5-T concentration in the groundwater will be less than the method detection limit (0.048 µg/L). No beneficial used limit has been established for 2,4,5-T.
Groundwater Monitoring Results	Well LM017AA has been sampled 12 times with no detections of Dieldrin.	Well LM017AA has been sampled 12 times with one detection of Lindane (0.34 µg/L in February 1999).	Well LM017AA has been sampled 12 times with no detections of 2,4,5-T.
Cleanup Standard Revision	ROD standard: 3 µg/kg Revised standard: Unchanged	ROD standard: 1.7 µg/kg Revised standard: 5 µg/kg	ROD standard: 5 µg/kg Revised standard: 13 µg/kg

Table 3-3. (Continued)

Topic	Dieldrin	Lindane	2,4,5-T
	Summary		
Conclusions	Adding land use controls to protect construction workers who could be exposed to subsurface soil modifies the ROD remedy to provide appropriate protection of human health. The land use controls also establish a process to ensure contamination is properly addressed in the event of a change in land use. Potential impacts to groundwater quality (considered unlikely) will be monitored through the DDJC-Tracy Well Monitoring Program.	The residual concentration of Lindane does not pose a risk to human health under any land use scenario. Potential impacts to groundwater quality (considered unlikely) will be monitored through the DDJC-Tracy Well Monitoring Program.	The residual concentration of 2,4,5-T does not pose a risk to human health under any land use scenario. Potential impacts to groundwater quality (considered unlikely) will be monitored through the DDJC-Tracy Well Monitoring Program.

DDJC = Defense Distribution Depot San Joaquin California
DI WET = deionized water waste extraction test
PRG = preliminary remediation goal
ROD = record of decision
U.S. EPA = U.S. Environmental Protection Agency
2,4,5-T = trichlorophenoxyacetic acid
µg/kg = micrograms per kilogram
µg/L = micrograms per liter

contaminants were not detected in soil samples from SB1131 and SB1132, it is likely that the soil with residual COCs at concentrations exceeding cleanup standards is confined to a discrete area west of and beneath Building 28 and the area east of the storm drain line (IT Corporation, 2002b).

3.2.2 Supplemental Site-Specific Water Quality Assessment

3.2.2.1 A site-specific water quality assessment was performed for SWMU 6 (and for other sites where appropriate; see subsequent sections). Where possible, conclusions are drawn on the basis of DI WET analytical results. These results are indicative of the likelihood of contaminants leaching from the soil and being transported to groundwater. Where inadequate DI WET data are available, or where contaminants were detected in the DI WET extract, vadose zone modeling was performed to estimate the impact to the underlying groundwater. The vadose zone modeling was performed using input parameters and methods similar to those used in the RI/FS and relied upon in the ROD. Two different software programs were used. SESOIL, which was used in the RI/FS (Montgomery Watson, 1996), and VLEACH are both one-dimensional models suitable for modeling vertical contaminant migration. VLEACH more realistically models infiltration through an asphalt-paved site than SESOIL. Finally, data from the DDJC-Tracy Well Monitoring Program were reviewed in each water quality assessment to ensure the DI WET results and modeling results were consistent with the findings of the monitoring program.

3.2.2.2 Dieldrin, Lindane, and 2,4,5-T concentrations exceeding the ROD cleanup standards remain at the locations shown on Figure 3-1. Because 2,4,5-T was not detected in the DI WET extract, the contaminant is not likely to adversely impact groundwater. For Dieldrin and Lindane, it was appropriate to determine if the concentrations observed in soil samples are likely to migrate to groundwater at concentrations in excess of the groundwater goals specified in the ROD. To this end, a vadose zone transport modeling simulation was performed to assess the potential for contaminant migration to the water table. Modeling results are considered conservative because the former sump was modeled as a point source (Radian International, 1998a), and actual subsurface processes probably would also result in lateral migration of the residual contaminants, with less migration downward to groundwater.

3.2.2.3 A discussion of the numerous variables necessary as input for each model and the results of the modeling are presented in the *Summary of Modeling for Potential for Impact to Groundwater Residual Herbicides in Soil, SWMU 6, DDJC-Tracy* (see Appendix A). The pesticide concentration input was set equal to the highest remaining concentration detected in the confirmation soil samples. The Dieldrin concentration used was 160 µg/kg, and the Lindane concentration used was 4 µg/kg (Table 3-1). Model input parameters and output results are provided on the CD that is included in Appendix B. A general overview of the model input parameters and output results are presented in Appendix B.

3.2.2.4 The modeling results from the 30-year SESOIL and VLEACH simulations indicated that the maximum concentration of Dieldrin in groundwater would be less than the ROD-specified beneficial use limit (water quality goal) of 0.002 micrograms per liter (µg/L) or other ROD criteria, including the background threshold value (see Table 7-1 in the ROD) of 0.005 µg/L (Radian International, 1998a) and the method detection limit of 0.006 µg/L (IT Corporation, 2002b). Furthermore, the modeling results from the 30-year SESOIL and VLEACH simulations indicated that the maximum concentration of Lindane in groundwater would be less than the ROD-specified beneficial use limit (water quality goal) of 0.03 µg/L or other ROD criteria. The increased value for the cleanup standard for Lindane is based on the modeling results (both SESOIL and VLEACH results are provided in Appendix A) that indicate the maximum concentration of Lindane in the underlying groundwater:

- Will be less than the beneficial use limit (water quality goal) of 0.03 µg/L;
- Will be less than the background threshold value (0.005 µg/L) cited in the ROD (Radian International, 1998a); and
- Will be less than the method detection limit of 0.006 µg/L for Lindane (IT Corporation, 2002b).

The cleanup standard can therefore be increased to 5 µg/L without a significant or measurable increase in Lindane concentrations.

3.2.2.6 Uncertainties in Methods. There are inherent uncertainties in the methods used to establish cleanup levels for contaminants to be left in soil. *Sampling uncertainty* must be considered whenever the analytical results for a soil sample are used to predict future contaminant migration. There is potential for concentration of contaminants to vary within a soil sample, and every sample cannot be split for a duplicate analysis. Field samplers and laboratory technicians who must "handle" the sample prior to analysis are taught to avoid biasing a sample prior to analyses; however, it is difficult to assure a homogeneous distribution of 2 to 160 micrograms of a colorless compound in a kilogram of soil. A lesser level of sampling uncertainty is expected to be introduced in the DI WET extraction procedure because a split of the original field sample must be subjected to extraction with deionized water. A conservative estimate of the errors introduced in sampling is ±200% of the analytical value. *Analytical uncertainty* is introduced during the process of preparing the sample "split", subjecting the sample to excitation by light or heat, detecting the excitation, and quantifying the detected result. For the analytical methods used for Dieldrin, Lindane, and 2,4,5-T, a conservative estimate of the difference in two separate analyses of the same sample may be ±50 percent.

3.2.2.7 In addition to the potential uncertainties produced by sampling and analyses, uncertainties are introduced in *modeling assumptions* when predictive models like SESOIL or VLEACH are applied. The modeling assumptions that may result in errors in prediction include the distribution of contamination with depth in the hypothetical soil column (especially if only one sample is collected to represent the soil column in the model); the accuracy of soil parameters (e.g., total organic carbon fraction and permeability); the variation of soil parameters vertically through the soil column; and environmental conditions (e.g., the rate of infiltration and total annual rainfall are also difficult to predict for the next 30 years). For consistency, the conservative soil parameters used to develop the initial ROD cleanup standards were used (Montgomery Watson, 1996). Estimated total annual rainfall was over-estimated at 20 inches, to be conservative. The estimated error that could be introduced by modeling assumptions is ±200 percent. The estimated total uncertainty multiplier is ±600% or a factor of ±6, less than a factor of 10.

3.2.2.8 The modeling was performed using conservative factors and was consistent, to the extent possible, with the modeling presented in the RI/FS report. The results of the SESOIL and VLEACH models suggest that concentrations of Dieldrin and Lindane may reach groundwater in five years. Considering potential uncertainties in obtaining the predictions, the results could be multiplied by a factor of 6 to estimate the maximum concentration with compounded uncertainties. Even with the conservative uncertainty multiplier, both models indicated that the maximum concentrations of Dieldrin or Lindane in groundwater would be below the ROD-specified beneficial use limits. It should also be noted that the SESOIL results suggest that beneficial uses of the underlying groundwater would not be impacted if the asphalt paving were removed.

3.2.3 Summary and Conclusions Regarding Potential Groundwater Impacts

3.2.3.1 The mass of pesticide and herbicide contaminants removed at SWMU 6 is estimated to be 0.11 pounds with approximately 0.002

pounds remaining. Dieldrin, Lindane, and 2,4,5-T were not detected in soil or groundwater samples collected less than 10 feet to the west of the western excavation limit or in a groundwater sample collected 20 feet downgradient from the northern excavation limit of SWMU 6. The contaminant mass estimates at SWMU 6 and the assumptions used are presented in Appendix C.

3.2.3.2 Groundwater monitoring is still required by the ROD. The groundwater sampling requirements for LM017AA and LM092CC should continue as recommended in the *DDJC-Tracy Well Monitoring Program 2002 Annual Monitoring Report* (URS, 2003b) to evaluate the performance of the remedy at SWMU 6. The Well Monitoring Program is reviewed annually to ensure that the well locations, monitoring frequency, water level measurements, and compounds analyzed are optimized for the long term. The annual well monitoring reports evaluate the concentrations of the COCs reported in groundwater samples to ensure the effectiveness of the remedy. According to the ROD, the monitoring wells at SWMU 6 must be monitored for the analytes identified in the ROD for no less than three years after soil and groundwater cleanup standards have been attained (Radian International, 1998a). If any of the water quality objectives are exceeded, the appropriateness of the selected remedy will be evaluated in the annual well monitoring report (Radian International, 1998a). See Figure 7.5-1 in the *DDJC-Tracy Well Monitoring Program, 2002 Annual Monitoring Report* (URS, 2003b) for the decision process used to determine well monitoring frequency.

3.3 Description of Significant Differences

3.3.1 The soil sample collected adjacent to the existing storm drain (DP0038) during excavation activities had significantly higher concentrations of Dieldrin than the samples collected during the RI. ROD cleanup standards were intended to protect groundwater quality, but no risk to human health was foreseen at the time the ROD was prepared. The results from DP0038 (with a sample depth of 10 feet bgs) exceed the U.S. EPA Region 9 Preliminary Remediation Goal (PRG) for industrial use of 110 µg/kg.

3.3.2 This ESD adds land use controls for SWMU 6 to prevent potential future construction workers from inappropriate exposure to risk associated with Dieldrin and to control future land use. Land use controls are described more fully in Section 2.0 of this ESD.

3.3.3 Although residual concentrations in subsurface soil pose a potential threat to the health of construction workers, additional water quality assessment performed with soil confirmation samples does not suggest that maintaining an impermeable cover at SWMU 6 would benefit groundwater quality. Soil with residual contamination at concentrations exceeding ROD-specified cleanup standards remains at 10 feet bgs to the east of the storm drain line and to the west of Building 28. Based on the DI WET result, the cleanup standard for 2,4,5-T is revised from 5 µg/kg to 13 µg/kg. The results from SESOIL and VLEACH modeling that indicate concentrations reaching groundwater would not exceed beneficial use limits support revision of the cleanup standard for Lindane from 1.7 µg/kg to 5 µg/kg. The predicted future Lindane concentrations in the aquifer are well below the beneficial use limit and, therefore, do not pose a threat to human health or the environment. The cleanup standard for Dieldrin is not being modified due to the risk posed to human health, but it should be noted that the SESOIL and VLEACH modeling results suggest there will not be an impact to groundwater quality from residual Dieldrin.

3.3.4 The excavation performed to date at SWMU 6 combined with the institutional controls added in this ESD is protective of human health and the environment.

3.4 Support Agency Comments

DDJC determined that the changes represented in this ESD did not fundamentally alter the remedial actions and proposed documenting these changes in an ESD in the 6 August 2003 RPM meeting. This ESD was added to the FFA schedule in October 2003. Responses to

comments received for the draft, draft final, and final versions of this ESD are provided following the appendices to this document.

3.5 Statutory Determinations

The modified remedy satisfies the requirements of CERCLA §121.

3.6 Public Notification Compliance

Consistent with the requirements of 40 CFR§300.435, this ESD and supporting information are being made available to the public in the administrative record and information repository. A notice summarizing the ESD, including reasons for the differences, will be published in the *Tracy Press* and the *Stockton Record* in October 2004 and included in the administrative record.

4.0 SWMU 8

This section reviews contamination left in place following remedial activities at SWMU 8 and evaluates the need for institutional controls.

4.1 Site History, Contamination, and Selected Remedy

SWMU 8 is the former location of a single large burn pit near the eastern extent of DDJC-Tracy. SWMU 8 is referred to as Burn Pit No. 2. The burn pit was reported to be 250 feet by 30 feet and 16 feet deep. Burn Pit No. 2 reportedly operated between 1942 and 1971. Various containers, crates, wooden pallets, trash, and unknown solids, liquids, and narcotics were burned in the pit (Montgomery Watson, 1996). The area surrounding SWMU 8 is unpaved and is slightly depressed topographically.

4.1.1 Selected Remedy in the ROD

4.1.1.1 The results of vadose zone modeling for SWMU 8 indicated that semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), pesticides and herbicides, and petroleum hydrocarbons detected in deep soils could migrate to groundwater and potentially threaten background groundwater quality (Montgomery Watson, 1996). The baseline risk assessment results indicated that organochlorine (OC) pesticides, including Chlordane, Dieldrin, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethene (DDE), and dichlorodiphenyltrichloroethane (DDT) detected in soil at SWMU 8 could pose carcinogenic risks to future construction workers (Montgomery Watson, 1996). The RAOs in the ROD for SWMU 8 were to:

- Prevent future construction workers from being exposed to pesticides (total DDX and Dieldrin) in the soil that would cause an excess cancer risk greater than 1×10^{-6} or a hazard index (HI) greater than 1.0; and

- Prevent groundwater contamination caused by the migration of SVOCs (diethylphthalate, bis[2-ethylhexyl]phthalate, 2,4-dinitrotoluene, and naphthalene), pesticides and herbicides (Chlordane, 2,4-dichlorophenoyacetic acid [2,4-D], DDT, DDD, Dieldrin, Lindane, Linuron, 2-methyl-4-chlorophenoxyacetic acid [MCPA], and Simazine), and total petroleum hydrocarbons as diesel (TPHD), gasoline (TPHG), or motor oil in the soil (Radian International, 1998a).

4.1.1.2 The remedy selected in the ROD required the excavation and off-site disposal of approximately 8,000 cubic yards of contaminated soil and debris (Radian International, 1998a). The area of the excavation specified was approximately 280 feet by 70 feet, and the soil and debris were to be excavated to approximately 14 feet bgs, or the depth of the water table. Clean soil imported from off site was to be used to backfill the excavation.

4.1.1.3 The ROD required that confirmation samples be collected and analyzed for the COCs listed in the ROD to ensure that cleanup standards had been achieved. Excavation and disposal were to permanently remove all known soil with contaminant concentrations exceeding cleanup standards. The selected remedy was considered protective of human health under current and future land use conditions.

4.1.1.4 The ROD also required the collection of confirmation soil gas samples for VOC analysis to determine whether further actions at SWMU 8 were warranted. Groundwater sampling under the Well Monitoring Program was required by the ROD to evaluate the effectiveness of the selected remedy. According to the ROD, the installation of one new monitoring well also was required. Sampling requirements were specified in the ROD for the new monitoring well (LM168A) and for existing monitoring wells LM019A, LM097AU, and LM119A.

4.1.1.5 Cleanup standards for SWMU 8 were developed using risk-based concentrations (RBCs) and vadose zone modeling (Montgomery Watson, 1996), which identified potential threats to background groundwater quality at this site. The ROD cleanup standards are listed below.

Analytes	SWMU 8 Soil Cleanup Standards (µg/kg)
Total Chlordane	10
2,4-D	25
DDD	81
DDE	NE
DDT	7
Total DDX	30,000
Dieldrin	2
Lindane	1.7
Linuron	200
MCPA	5,000
Simazine	10
bis(2-ethylhexyl)phthalate	330
Diethylphthalate	330
2,4-Dinitrotoluene	330
Naphthalene	330
TPH as gasoline	1,000
TPH as diesel	10,000
TPH as motor oil	10,000

2,4-D = 2,4-dichlorphenoxyacetic acid
DDD = 4,4′-dichlorodiphenyldichloroethane
DDE = 4,4′-dichlorodiphenyldichloroethene
DDT = 4,4′-dichlorodiphenyltrichloroethane
DDX = sum of the concentrations of DDD, DDE, and DDT
MCPA = 2-methyl-4-chlorophenoxyacetic acid
NE = No cleanup standard was established
SWMU = solid waste management unit
TPH = total petroleum hydrocarbons
µg/kg = micrograms per kilogram

4.1.2 Actions Taken in Response to ROD Requirements

4.1.2.1 Mobilization for remedial activities at SWMU 8 occurred on 23 September 2002 with excavation commencing on 8 October 2002. Based on the results of a design data collection effort performed at SWMU 8, the area of the excavation was increased from that approximated in the ROD (IT Corporation, 2001a). The excavation footprint was extended approximately 20 feet to the southeast because Chlordane and Dieldrin were detected in a soil sample collected outside of the ROD-specified excavation boundary. The base excavation and initial overexcavation were completed between 8 October 2002 and 14 November 2002. The depth along the center of the excavation was approximately 20 feet bgs, which was below the seasonal high level for the groundwater table.

4.1.2.2 Initial confirmation sample results from the sidewalls and bases (benches and bottom) of the excavation indicated that additional excavation was needed to remove additional soil with contaminants exceeding the cleanup standards. Fourteen step-out excavations were performed, and confirmation soil samples were collected following the completion of each step-out. Residual contamination following the first step-out necessitated a second round of step-out excavations. Confirmation soil samples collected showed that concentrations of the pesticides DDT and Dieldrin exceeding cleanup standards remain at SWMU 8 (Table 4-1). Table 4-2 provides the corresponding DI WET results.

4.1.2.3 Additional excavation was not performed at sample locations with contamination exceeding cleanup standards at depths below the groundwater table because the ROD does not require excavation below the groundwater table (Radian International, 1998a).

4.1.2.4 All excavation and confirmation soil sampling activities were completed on 21 November 2002. Backfilling of the excavation and the hauling of waste off site were completed on 18 December 2002. Over 17,000 cubic yards (more than double the quantity estimated in the ROD) of material were excavated, transported, and disposed of off site. Installation of the ROD-specified new monitoring well (LM178AU) was completed downgradient of the excavation on 24 February 2003 (Figure 1-3). LM097AU, which was abandoned because of its location within the excavation area, was replaced with LM097AUA on 24 February 2003 (Figure 1-3). Figure 4-1 shows the final excavation footprint and the locations where contamination remains at concentrations exceeding the cleanup standards. Table 4-1 summarizes the soil sample locations at which DDT and Dieldrin remain at concentrations that exceed cleanup standards.

4.1.2.5 In response to confirmation sampling results, the excavation at SWMU 8 was expanded to more than double the design volume. Although soil concentrations exceeded the ROD cleanup standards, it was determined that all contaminant concentrations had been reduced to levels below risk-based cleanup levels identified in the ROD and were unlikely

Table 4-1. Final DDT and Dieldrin Concentrations Exceeding ROD Soil Cleanup Standards, SWMU 8, DDJC-Tracy

Sample ID	Location	DDT (µg/kg)	Dieldrin (µg/kg)
SS0105-SO-272	Station 100; 9 feet bgs	**7.3**	0.9J
SS0146-SO-323	Station 200; 7 feet bgs	**47**	**4**
SS0149-SO-326	Station 250; 9 feet bgs	**15**	0.5J
SS0151-SO-330	Station 0; 9 feet bgs	**18**	**2J**
SS0152-SO-331	Station 50; 10 feet bgs	**9.1**	1J
SS0158-SO-338	Station 200; 9 feet bgs	**22**	**3J**
SS0164-SO-345	Station 15; 5 feet bgs	**9.5**	0.8J
SS0176-SO-358	Station 15; 7 feet bgs	**9.2**	<3.4
	Soil Cleanup Standards	7	2

bgs = below ground surface
DDJC = Defense Distribution Depot San Joaquin California
DDT = dichlorodiphenyltrichloroethane
ID = identification
J = estimated value
ROD = record of decision
SWMU = solid waste management unit
µg/kg = micrograms per kilogram

Concentrations in **bold** exceed soil cleanup standards.

Table 4-2. Soil and DI WET Analytical Results for Initial Excavation Samples, SWMU 8, DDJC-Tracy

		DDT		Dieldrin	
Sample ID	Location	Soil (µg/kg)	DI WET (µg/L)	Soil (µg/kg)	DI WET (µg/L)
SS0098-SO-264	Station 50; 10 feet bgs	**91**	0.01J	<3.6	<0.05
SS0117-SO-286	Station 150; 4 feet bgs	**102**	**0.1**	**12**	**0.191**
SS0124-SO-298	Station 200; 4 feet bgs	**975**	**1.7**	<3.2	**1.37**
SS0099-SO-265	Station 50; 14 feet bgs	**16,000**	**10.4**	<3.2	<0.05
	Soil Cleanup Standards	7		2	
	Groundwater Beneficial Use Limits		0.1		0.002

bgs = below ground surface
DDJC = Defense Distribution Depot San Joaquin California
DDT = dichlorodiphenyltrichloroethane
DI WET = deionized water waste extraction test
ID = identification
J = estimated value
SWMU = solid waste management unit
µg/kg = micrograms per kilogram
µg/L = micrograms per liter

Concentrations in **bold** exceed soil cleanup standards and/or groundwater beneficial use limits.

to pose a risk to the environment (based on DI-WET results). This led to a decision to backfill the excavation prior to the onset of winter rains (rain pooling in the excavation might have increased the rate of residual contaminant migration).

4.2 Basis for Change

4.2.1 Supplemental Site-Specific Water Quality Assessment

DI WET analyses were performed on confirmation soil samples collected from the vadose zone that had concentrations exceeding cleanup standards to assess the potential for COC migration to groundwater. The DDT and Dieldrin DI WET results are presented in Table 4-2. In final confirmation soil samples, DDT and Dieldrin were the only contaminants detected at concentrations exceeding cleanup standards. It should be noted that all sample locations identified in Table 4-2 were over-excavated following sample collection. Table 4-3 summarizes the assessment of the protection of human health and the environment.

4.2.2 Cleanup Standards for Protection of Groundwater

4.2.2.1 The cleanup standards developed in the ROD were based on limited soil sampling results and DI WET analysis. A wealth of characterization information was generated during the remedial activities and provides a basis for a much more thorough evaluation of potential groundwater quality impacts.

4.2.2.2 Soil with DDT and Dieldrin concentrations exceeding ROD cleanup standards remains at the locations shown on Figure 4-1. Following remedial activities, the estimated mass of residual contamination has been reduced to approximately 0.83 pounds of contaminants at SWMU 8 (Appendix C). To assess the potential threat to groundwater from the residual pesticides detected in final confirmation samples, the results of the DI WET analyses were evaluated. The confirmation soil sample results were compared to the DI WET results to determine whether there was an appropriate technical basis for revising the cleanup standards. This approach, using site-specific analytical results, was similar to the method used in the ROD to revise the RI/FS-proposed cleanup standards for SWMUs 2 and 3 (Radian International, 1998a).

4.2.2.3 A correlation was evident between concentrations in the initial confirmation soil samples and the DI WET analytical results for DDT. Variability in this relationship probably was related to the local-scale heterogeneity of pesticide concentration, soil composition, and soil organic matter content. At concentrations greater than 102 µg/kg in soil, the beneficial use limit for DDT in groundwater was exceeded (Table 4-2). However, at a concentration of 91 µg/kg in soil, DDT was not detected in the extract (Table 4-2). The DI WET results suggested that the beneficial use limit for DDT in groundwater was not likely to be exceeded at concentrations of 102 µg/kg (Table 4-2). Based on these results, the cleanup standard needs to be less than 102 µg/kg to protect beneficial uses. Any DDT that may leach from soil at lower concentrations should be attenuated in the vadose zone prior to reaching groundwater. This conclusion was supported by SESOIL and VLEACH simulations that suggest DDT will not reach groundwater in 100 years and 50 years, respectively. LM19A has been sampled 4 times, LM097AU has been sampled 6 times, LM097AUA has been sampled 6 times, LM119A has been sampled 15 times, and LM168AU has been sampled 17 times for OC pesticides. There has only been one detection of DDT (LM119A had 0.15 µg/L in the third quarter 2000 sampling event).

4.2.2.4 A correlation was not evident for the Dieldrin results, and a different approach to evaluating the soil cleanup standard for Dieldrin was necessary. A vadose zone transport modeling simulation was performed to evaluate the potential for the residual Dieldrin contamination to migrate to groundwater at concentrations in excess of the groundwater goals specified in the ROD. The modeling was performed using input parameters and methods similar to those used in the RI/FS and relied upon in the ROD.

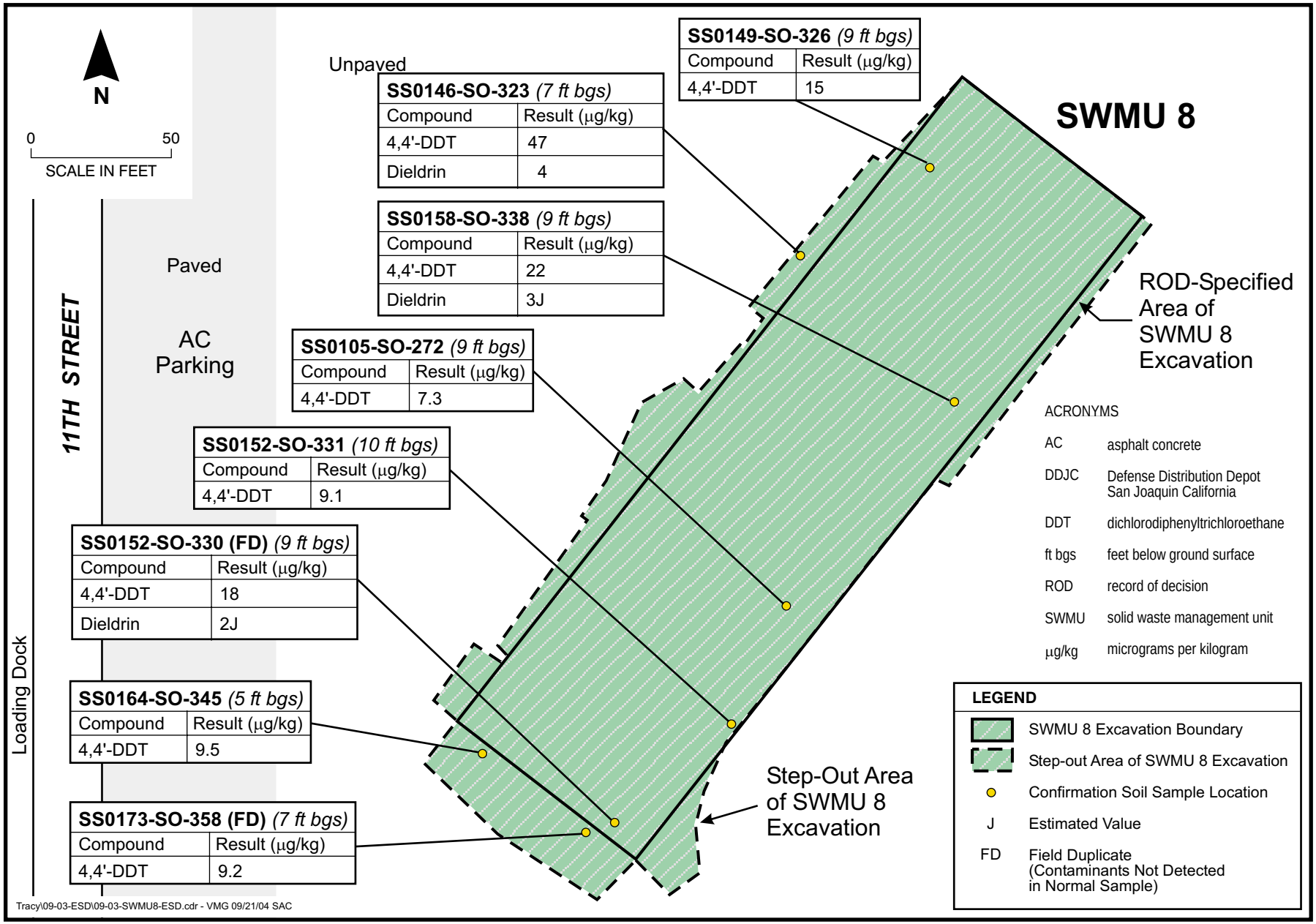


Figure 4-1. Residual Soil Contamination Above ROD Cleanup Standards, SWMU 8, DDJC-Tracy

This page intentionally left blank

Table 4-3. Summary of Basis for Change in Cleanup Standards for SWMU 8, DDJC-Tracy

Topic	Dieldrin	DDT
Risk to Human Health from Exposure to Soil	The maximum residual soil concentration is 4 µg/kg. The ROD identifies a risk-based cleanup standard of 600 µg/kg to protect potential construction workers. Under the residential scenario (future child), the residual concentration represents a cancer risk of approximately 2.3×10^{-7} and a hazard quotient of 1.6×10^{-3}. The residual concentration is also below the U.S. EPA Region 9 PRG of 30 µg/kg for residential use. Therefore, exposure to Dieldrin is not anticipated to pose unacceptable health risks under any future land use scenario.	The maximum residual soil concentration is 47 µg/kg. Specifically for DDT, the corresponding estimated cancer risk is 1.6×10^{-9} and the HQ is 6.5×10^{-4}. It should be noted that the ROD identified a risk-based cleanup standard of 30,000 µg/kg total DDX instead of a risk-based standard specific to DDT to protect potential construction workers. The highest residual concentration is 89 µg/kg. Under the residential scenario (future child), the residual concentration represents a cancer risk of approximately 5.8×10^{-8} and a hazard quotient of 1.7×10^{-4}. The residual concentration is also below the U.S. EPA Region 9 PRG of 1,700 µg/kg for residential use. Therefore, exposure to DDT is not anticipated to pose unacceptable health risks under any future land use scenario.
Groundwater Quality Issues		
Frequency of Detection above the Cleanup Standard in Confirmation Samples	Reported above the cleanup standard in 2 of 56 confirmation samples from the final sidewalls and base of the excavation (excluding 4 samples collected below the water table considered part of OU 1).	Reported above the cleanup standard in 8 of 56 confirmation samples from the final sidewalls and base of the excavation (excluding 4 samples collected below the water table considered part of OU 1).
Residual Mass Estimate	47.1 grams	162 grams
DI WET Analysis	DI WET analysis was performed on four soil samples. DI WET results ranged from 0.2 µg/L (for 12 µg/kg in soil) to 1.37 µg/L (for <3.2 µg/kg in soil). The aquifer cleanup standard for OU 1 is 0.5 µg/L.	DI WET analysis was performed on four soil samples that exceeded the cleanup standard. DI WET results ranged from 0.01 µg/L (for 91 µg/kg in soil) to 10.4 µg/L (for 16,000 µg/kg in soil). At 102 µg/kg, the extract concentration was equal to the beneficial use limit (0.1 µg/L). DI WET results indicate that beneficial uses will be protected as long as the cleanup standard is below 102 µg/kg.
SESOIL/VLEACH Modeling Results	Modeling results indicate the maximum concentration of Dieldrin in groundwater will not exceed the beneficial use limit (0.002 µg/L) which is less than the aquifer cleanup standard of 0.5 µg/L.	SESOIL and VLEACH simulations suggest that DDT will not reach groundwater in 100 years and 50 years, respectively (the resulting groundwater concentration is 5.9×10^{-21} µg/L). There is no aquifer cleanup standard in the ROD for DDT.

Table 4-3. (Continued)

Topic	Dieldrin	DDT
Groundwater Monitoring Results	LM19A has been sampled 4 times, LM097AU has been sampled 6 times, LM097AUA has been sampled 6 times, LM119A has been sampled 15 times, and LM168AU has been sampled 17 times for OC pesticides. There have been no detections of Dieldrin.	LM19A has been sampled 4 times, LM097AU has been sampled 6 times, LM097AUA has been sampled 6 times, LM119A has been sampled 15 times, and LM168AU has been sampled 17 times for OC pesticides. There has only been one detection of DDT (LM119A had 0.15 µg/L in the third quarter 2000 sampling event).
Cleanup Standard Revision	ROD Standard: 2 µg/kg Revised Standard: 4 µg/kg	ROD Standard: 7 µg/kg Revised Standard: 47 µg/kg
Summary		
Conclusions	Residual concentrations are well below the risk-based concentrations identified in the ROD. The modified cleanup standard also does not pose a significant threat to human health under the residential scenario. Potential impacts to groundwater quality (considered unlikely) will be monitored through the DDJC-Tracy Well Monitoring Program.	Residual concentrations are well below the risk-based concentrations identified in the ROD. The modified cleanup standard also does not pose a significant threat to human health under the residential scenario. Potential impacts to groundwater quality (considered unlikely) will be monitored through the DDJC-Tracy Well Monitoring Program.

DDJC = Defense Distribution Depot San Joaquin California
DDT = 4,4′-dichlorodiphenyltrichloroethane
DDX = sum of the concentrations of DDD, DDE, and DDT
DI WET = deionized water waste extraction test
OC = organochlorine
OU = operable unit
PRG = preliminary remediation goal
ROD = record of decision
SWMU = solid waste management unit
U.S. EPA = U.S. Environmental Protection Agency
µg/kg = micrograms per kilogram
µg/L = micrograms per liter

The SESOIL program, which was used in the RI/FS and for SWMU 6 modeling, as described, also was used at SWMU 8.

4.2.2.5 A discussion of the variables selected as input for the model and the results of the modeling are presented in the *Summary of Modeling for Potential for Impact to Groundwater from Residual Dieldrin in Soil, SWMU 8, DDJC-Tracy* (Appendix D). The pesticide concentration input was set equal to the highest remaining concentration detected in the confirmation soil samples. The Dieldrin concentration used was 4 µg/kg.

4.2.2.6 Uncertainties in Methods. There are inherent uncertainties in the methods used to establish cleanup levels for contaminants to be left in soil. *Sampling uncertainty* must be considered whenever the analytical results for a soil sample are used to predict future contaminant migration. There is potential for concentration of contaminants to vary within a soil sample, and every sample cannot be split for a duplicate analysis. Field samplers and laboratory technicians who must "handle" the sample prior to analysis are taught to avoid biasing a sample prior to analyses; however, it is difficult to assure a homogeneous distribution of 12 to 16,000 micrograms of a colorless compound in a kilogram of soil. A lesser level of sampling uncertainty is expected to be introduced in the DI WET extraction procedure because a split of the original field sample must be subjected to extraction with deionized water. A conservative estimate of the errors introduced in sampling is ±200%of the analytical value. *Analytical uncertainty* is introduced during the process of preparing the sample "split", subjecting the sample to excitation by light or heat, detecting the excitation, and quantifying the detected result. For the analytical methods used for Dieldrin, a conservative estimate of the difference in two separate analyses of the same sample may be ±50 percent.

4.2.2.7 In addition to the potential uncertainties produced by sampling and analyses, uncertainties are introduced in *modeling assumptions* when predictive models like SESOIL or VLEACH are applied. The modeling assumptions that may result in errors in prediction include the distribution of contamination with depth in the hypothetical soil column (especially if only one sample is collected to represent the soil column in the model); the accuracy of soil parameters (e.g., total organic carbon fraction and permeability); the variation of soil parameters vertically through the soil column; and environmental conditions (e.g., the rate of infiltration and total annual rainfall are also difficult to predict for the next 30 years). For consistency, the conservative soil parameters used to develop the initial ROD cleanup standards were used (Montgomery Watson, 1996). Estimated total annual rainfall was over-estimated at 20 inches, to be conservative. The estimated error that could be introduced by modeling assumptions is ±200 percent. The estimated total uncertainty multiplier is ±600% or a factor of ±6, less than a factor of 10.

4.2.2.8 The modeling was performed using conservative factors and was consistent, to the extent possible, with the modeling presented in the RI/FS report. The results of the SESOIL and VLEACH models suggest that concentrations of Dieldrin may reach groundwater in several years. Considering potential uncertainties in obtaining the predictions, the results could be multiplied by a factor of 6 to estimate the maximum concentration with compounded uncertainties. Even with the conservative uncertainty multiplier, both models indicated that the maximum concentrations of Dieldrin in groundwater would be below the ROD-specified beneficial use limit (0.002 µg/L). Based on the modeling results, a revised soil cleanup standard of 5 µg/kg for Dieldrin is proposed (revised from 2 µg/kg). The summary of modeling for SWMU 8 is included as Appendix D to this ESD.

4.2.2.9 The DI WET test did not consider attenuating factors, including dilution and the tendency of DDX compounds, including DDT, and Dieldrin to strongly partition into soil organic matter as they travel through the vadose zone to the water table. Both of these factors act to significantly reduce the mass reaching

groundwater and indicate the conservative nature of the water quality assessment.

4.2.3 Soil Gas Sampling

4.2.3.1 Although there was no evidence of VOC contamination in soil at SWMU 8 in the RI (Montgomery Watson, 1996), the extent of the former burn pit was responsible for some uncertainty regarding the possible presence of VOCs. Soil gas sampling was required by the ROD to determine if VOC contamination might be present at the site, but has not been performed to date.

4.2.3.2 The excavation performed at SWMU 8 removed 21,000 cubic yards of soil, more than double the 8,000 cubic yards estimated in the ROD. The excavation also went down to 20 feet bgs while the ROD anticipated that any excavation deeper than 16 feet bgs would not be possible without extensive dewatering. The over-excavation of SWMU 8 removed the former burn pit in its entirety and replaced it with clean fill. Furthermore, during the last five years of groundwater monitoring at LM097AU, LM119A, and LM168AU (nearby and down-gradient from the former burn pit at SWMU 8) concentrations of VOCs have not exceeded the ROD-specified aquifer cleanup standards.

4.2.4 Conclusions

4.2.4.1 The mass of contaminants removed at SWMU 8 is estimated to be 5,293 pounds, and less than 1 pound is estimated to remain at SWMU 8. Because over-excavation was not performed in the vicinity of the sidewall locations where Dieldrin and DDT were identified at SS0146-SO-323 (at 4 µg/kg and 47 µg/kg, respectively), there is some uncertainty associated with the mass removal estimate. However, it should be noted that these concentrations are below the U.S. EPA Region 9 PRGs for residential use. These findings suggest that residual concentrations do not pose a threat to the beneficial uses of groundwater, human health, or the environment and that additional excavation would not provide a proportional benefit compared to cost. Therefore, revised cleanup standards of 4 µg/kg and 47 µg/kg are established for Dieldrin and DDT, respectively.

4.2.4.2 Groundwater monitoring continues at SWMU 8 to ensure the effectiveness of the remedy. The ROD requires monitoring at wells LM019A, LM097AU, LM119A, and LM168AU (Figure 4-1). Monitoring well LM178AU was installed as a new monitoring well after the remedial action was completed (Figure 4-1). LM178AU is farther downgradient from SWMU 8 than LM168AU. LM097AU, which was abandoned during the remedial action because of its location within the excavation area, has been replaced by LM097AUA. LM019A is damaged and would need to be repaired before ground-water sampling could be conducted. However, during the Remedial Project Managers (RPMs) meeting in May 2003, the RPMs agreed to abandon LM019A (RPMs, 2003). The screen in LM019A is too deep to provide groundwater samples to evaluate the effectiveness of the remedy, and the four remaining wells are adequate to monitor groundwater in the area of and downgradient from SWMU 8 (Figure 4-1). The sampling rationale in the ROD as amended by the Well Monitoring Program (URS, 2003b) for the monitoring wells are listed below.

Monitoring Well	Sampling Rationale
LM019A (To be abandoned)	Refer to adjacent/replacement monitoring well LM168AU.
LM097AU (replaced by LM097AUA)	Downgradient monitoring well for SWMU 8. Sample annually for TPHD and VOCs. Sample twice a year for OC pesticides. No detections of C/U pesticides or Simazine (sampling eliminated).
LM119A	Downgradient monitoring well for SWMU 30. Sample annually for VOCs, SVOCs, TPHD, and OC pesticides.
LM168AU	Nearest monitoring well downgradient from potential source in SWMU 8. Sample annually for VOCs, SVOCs, and dioxins/furans. Sample twice per year for OC pesticides.

Monitoring Well	Sampling Rationale
LM178AU	Downgradient well to monitor potential source from SWMU 8. Sample OC pesticides quarterly. Sample for dioxin/furans twice per year. Sample annually for VOCs, SVOCs, chlorinated herbicides, TPHD, and TPHG.

C/U = carbamate/urea
OC = organochlorine
SVOC = semivolatile organic compound
TPHD = total petroleum hydrocarbons as diesel
TPHG = total petroleum hydrocarbons as gasoline
VOC = volatile organic compound

4.3 Description of Significant Differences

4.3.1 Based on a more thorough water quality assessment for the site, the cleanup standards for DDT and Dieldrin are revised to 103 µg/kg and 5 µg/kg, respectively.

4.3.2 Protection of Human Health. Based on the summary of the baseline risk assessment for SWMU 8 presented in Subsection 6.3.7.5 of the *Comprehensive Remedial Investigation/ Feasibility Study Report*, Dieldrin, DDD, and DDE were present at SWMU 8 prior to the remedial action at concentrations that " . . . could pose a cancer risk between 1 x 10^{-6} and 1 x 10^{-4} for a construction worker" (Montgomery Watson, 1996). Chlordane, benzo(a)pyrene and beryllium, the major contributors to the cancer risk at exposure unit (EU) 10, are present in lower concentrations at SWMU 8 " . . . and are not expected to pose a cancer risk in excess of 1 x 10^{-6} at SWMU 8" (Montgomery Watson, 1996). Manganese, with a hazard quotient (HQ) of 7.7, is the principal contributor (89%) to the HI of 9 at EU 10. However, the manganese concentrations detected in EU 10 and SWMU 8 soil samples " . . . are similar to manganese concentrations in soil throughout the western United States (Shacklette and Boerngen, 1984)" (Montgomery Watson, 1996). Manganese, therefore, was not considered to pose a public health threat at SWMU 8.

4.3.3 Consequently, Dieldrin and total 4,4′-DDT or DDX (including 4,4′-DDE and 4,4′-DDD, contaminants or breakdown products of commercial 4,4′-DDT preparations) were the only contaminants of potential concern (COPCs) identified for SWMU 8 for which risk-based cleanup standards were calculated and included in Table 10-11 of the ROD.

4.3.4 According to Table C-38 in the baseline risk assessment, with an exposure point concentration of 34 µg/kg for Dieldrin, the increased cancer risk is 5.4 x 10^{-8} and the HQ is 4.7 x 10^{-3} for EU 10 (includes SWMU 8) using the construction worker scenario. According to Paragraph 5.2.9.4 of the baseline risk assessment, for the construction worker scenario, " . . . potential risks from Dieldrin at SWMU 8 were obscured by averaging over the entire Exposure Unit" (Montgomery Watson, 1997b). Therefore, the ROD identified an RBC of 600 µg/kg Dieldrin in Table 10-11 for SWMU 8 to ensure the increased cancer risk will not exceed 1 x 10^{-6} for the construction worker scenario.

4.3.5 The remedial action at SWMU 8 reduced the maximum concentration of Dieldrin at SWMU 8 from 2,640 µg/kg to 4 µg/kg. This concentration is over two orders of magnitude below the RBC in Table 10-11 and well below the exposure point concentration used to characterize the risk throughout EU 10 in the baseline risk assessment that suggested Dieldrin was not a significant threat to human health in this exposure unit. Therefore, raising the cleanup standard for Dieldrin to 4 µg/kg (representing an estimated cancer risk of 6.1 x 10^{-9} and an HQ of 5.5 x 10^{-4}) is protective of human health.

4.3.6 Table C-38 in the risk assessment also shows that for 4,4′-DDT, an exposure point concentration of 800 µg/kg (considerably higher than the maximum residual concentration of 47 µg/kg) corresponds to an increased cancer risk of 2.7 x 10^{-8} and an HQ of 1.1 x 10^{-2} for the construction worker scenario. Table 10-11 of the ROD identifies an RBC of 30,000 µg/kg of total DDX to reduce the increased cancer risk to 1 x 10^{-6}. The highest residual concentration of total DDX is 89.4 µg/kg at SSO146 (which represents

an estimated cancer risk of 3.0×10^{-9}). Furthermore, the highest concentration of 4,4′-DDT is 47 µg/kg, well below the exposure point concentration used in Table C-38 of the risk assessment that showed no significant risk throughout the EU under the construction worker scenario. Therefore, raising the cleanup standard for 4,4′-DDT to 47 µg/kg (which represents an estimated cancer risk of 1.6×10^{-9} and an HQ of 6.5×10^{-4}) is protective of human health.

4.3.7 Table 10-11 of the ROD provided U.S. EPA Region 9 PRGs as a consideration for the development of cleanup standards. It should be noted that the highest residual concentrations of 4,4′-DDT and Dieldrin (47 µg/kg and 4 µg/kg, respectively) are well below both the industrial PRGs and the more stringent residential PRGs (1,700 µg/kg and 30 µg/kg, respectively).

4.3.8 Protection of the Environment. DI WET results indicate that the maximum residual concentrations reported for DDT and Dieldrin (47 µg/kg and 4 µg/kg, respectively) will not impact groundwater). Paragraph 6.1.1.1 in the baseline risk assessment concluded that most of the depot, including SWMU 8, does not provide any significant habitat for wildlife (Montgomery Watson, 1997b).

4.3.9 Conclusions. In summary, both the risk assessment and the ROD support the conclusion that the proposed modifications to the cleanup standards for Dieldrin (4 µg/kg) and 4,4′-DDT (47 µg/kg) will not threaten human health. The additional water quality assessment indicates that the environment can also be protected with the change to the cleanup standards for Dieldrin and 4,4′-DDT. Therefore, the remedy at SWMU 8 is protective of human health and the environment, and institutional controls restricting digging are not warranted.

4.3.10 The ROD also required soil gas sampling for VOCs be conducted in native soils outside of the perimeter of the excavation after the excavation was backfilled. However, significant expansion of the excavation has removed the burn pit in its entirety and five years of groundwater monitoring has shown no evidence of VOC contamination. Therefore, soil gas sampling has been deleted from the remedy.

4.4 Support Agency Comments

DDJC determined that the changes represented in this ESD did not fundamentally alter the remedial actions and proposed documenting these changes in an ESD in the 6 August 2003 RPM meeting. This ESD was added to the FFA schedule in October 2003. Responses to comments received for the draft, draft final, and final versions of this ESD are provided following the appendices to this document.

4.5 Statutory Determinations

The modified remedy satisfies the requirements of CERCLA §121.

4.6 Public Notification Compliance

Consistent with the requirements of 40 CFR§300.435, this ESD and supporting information are being made available to the public in the administrative record and information repository. A notice summarizing the ESD, including reasons for the differences, will be published in the *Tracy Press* and the *Stockton Record* in October 2004 and included in the administrative record.

5.0 SWMU 20

This section reviews contamination left in place at SWMU 20 and evaluates the need for institutional controls. It also evaluates the soil vapor extraction (SVE) portion of the ROD remedy under current conditions.

5.1 Site History, Contamination, and Selected Remedy

SWMU 20 is the site of a former aboveground solvent tank that was located in Building 10 (Figure 1-3). The site also included two sumps associated with discharge from Building 10 to the former industrial waste pipeline (SWMU 33). A variety of VOCs and SVOCs were detected in sludges collected from the sumps, floor drains, and soil samples at SWMU 20.

5.1.1 Selected Remedy in the ROD

5.1.1.1 Although the ROD does not require remediation to protect current depot workers exposed to soil at SWMU 20, the risk to potential future on-depot residents was 2×10^{-4}. The RAO for SWMU 20 is to prevent the migration of COCs in soil that could cause groundwater contamination.

5.1.1.2 The ROD requires excavation and disposal of the two sumps in the vicinity of Building 10 and the floor drain at Building 26. The ROD estimated that 10 cubic yards of soil would be excavated. Confirmation samples were required to ensure that cleanup standards were achieved. The soil beneath the sumps and floor drain was also to be excavated and disposed of at a Class I disposal facility. Cleanup standards for SWMU 20 were developed using vadose zone modeling (Montgomery Watson, 1996) and were intended to protect groundwater quality. The ROD cleanup standards are provided in the following table.

Analytes	SWMU 20 Soil Cleanup Standards (µg/kg)
Trichloroethene	5
Ethylbenzene	5
Xylenes	5
Diethylphthalate	330
2,4-Dinitrophenol	830
Pentachlorophenol	830
2,4,6-Trichlorophenol	330
Dieldrin	2
Methiocarb	500
Linuron	200
MCPA	5,000
TPH as diesel	10,000

MCPA = 2-Methyl-4-chlorophenoxyacetic acid
SWMU = solid waste management unit
TPH = total petroleum hydrocarbons
µg/kg = micrograms per kilogram

5.1.1.3 The ROD further required SVE to remediate trichloroethene (TCE) contamination in soils at Area 1, Building 10, and near soil boring SB431. The cleanup standard for TCE in soil gas is 1.9 µg/L (350 parts per billion by volume [ppbv]).

5.1.2 Actions Taken in Response to ROD Requirements

5.1.2.1 Unexpected field conditions resulted in two phases of excavation at SWMU 20. The first phase occurred between September 1997 and July 1998 (Environmental Chemical Corporation [ECC], 1999). Sumps in the vicinity of manhole W-3 and a sump adjacent to SB204 near Building 10 were first pressure-washed to remove residual sludge and then demolished. A concrete slab discovered during the preconstruction sampling effort for SB204 at 9 feet bgs turned out to be the foundation for a former underground storage tank. This tank was not identified during the RI/FS, but it significantly altered the approach to the remedy. Soil samples collected in the vicinity of SB204 below the concrete foundation had TPH concentrations between 15,000 and 100,000 µg/kg, which exceed the cleanup standard. The remediation contractor installed sheet-pile shoring and proceeded to perform excavations at both SB204 and manhole W-3. Approximately 27 cubic yards of soil were removed during this phase of the excavation. Soil samples collected from the base of the SB204 excavation and sidewalls

exceeded ROD cleanup standards for Dieldrin, TCE, ethylbenzene, and TPH. The first phase of excavation was halted when further excavation could not be safely performed without a new shoring design. The excavation was filled with control density fill and the contractor demobilized.

5.1.2.2 In June 1999, a second phase of excavation was performed at SWMU 20 (IT Corporation, 2002a). An additional 305 cubic yards of soil were excavated at this time (resulting in a total excavation of approximately 332 cubic yards, over 30 times the 10-cubic-yard excavation anticipated in the ROD). Based on the results of confirmation sampling, soil containing COCs at concentrations greater than cleanup standards still remains at SWMU 20. Analytical results showed residual TPH contamination immediately adjacent to Building 10 at 48,000 µg/kg (Figure 5-1). DI WET analysis was performed on the confirmation soil sample and the extract concentration (<0.2 µg/L) was below the ROD-specified concentration requiring further evaluation (100 µg/kg) for TPH. Other constituents have been removed to ROD cleanup standards.

5.2 Basis for Change

5.2.1 The ROD anticipated a combination of excavation and SVE to address contamination at SWMU 20. According to Paragraph 9.7.5.7 of the ROD, the SVE system was intended to address TCE contamination that would be left in place following the excavation. The excavation performed was much more extensive than was originally anticipated. Although the excavation did not proceed as far to the east as the proposed location for SVE, the expanded excavation could potentially interfere with the performance of an SVE system.

5.2.2 The remedial action as completed reduced the mass of TCE in the soil. Completed remedial actions for soil, sumps, the industrial waste pipeline, and OU 1 groundwater in the vicinity of Building 10 all reduce the potential environmental impacts from the site. Furthermore, the groundwater concentrations at SWMU 20 have decreased by a factor of 10 from the levels observed in 1994. There are multiple nearby groundwater monitoring wells (including LM115AU and LM175AU) and an extraction well within 100 feet of the site (EW011AU). It should be noted that LM175AU replaced LM093AU, which had to be abandoned during the excavation at SWMU 20.

5.2.3 Residual contamination includes TPH under Building 10 and TCE below Building 10 and in the vicinity of 5th Street between Buildings 10 and 26. SVE could address TCE, but would not effectively treat the residual TPH contamination. Alternatively, bioventing could address the TPH, but would not be effective in treating the TCE. Even if both technologies were used in combination it is unrealistic to expect that the soil remaining underneath Buildings 10 and 26 would be sufficiently remediated to allow clean closure. Adding land use controls at SWMU 20 would satisfy the RAOs for both TCE and TPH. Additional actions or continued land use controls would be evaluated at some point in the future when Buildings 10 and 26 are demolished. Groundwater monitoring results (URS, 2003b) indicate that deleting SVE from the remedy will not result in significant impacts to human health and the environment from the residual contamination at this site.

5.3 Description of Significant Differences

5.3.1 This ESD adds institutional controls to the remedy for SWMU 20, consistent with the requirements in Section 2.0 of this ESD. Institutional controls are needed due to residual contamination underneath Building 10, as well as potential contamination to the east of Building 10. Because of the unanticipated extent of residual TPH contamination discovered during excavation, SVE is not expected to be effective and is deleted from the remedy. The effectiveness of the remedy for SWMU 20 will instead rely on institutional controls, excavations, and grouting activities performed at SWMU 20, SWMU 33, and OU 1. The adequacy of the remedy without SVE was assessed through additional soil gas sampling between Buildings 10 and 26. The results of this sampling effort are provided in Figure 5-1.

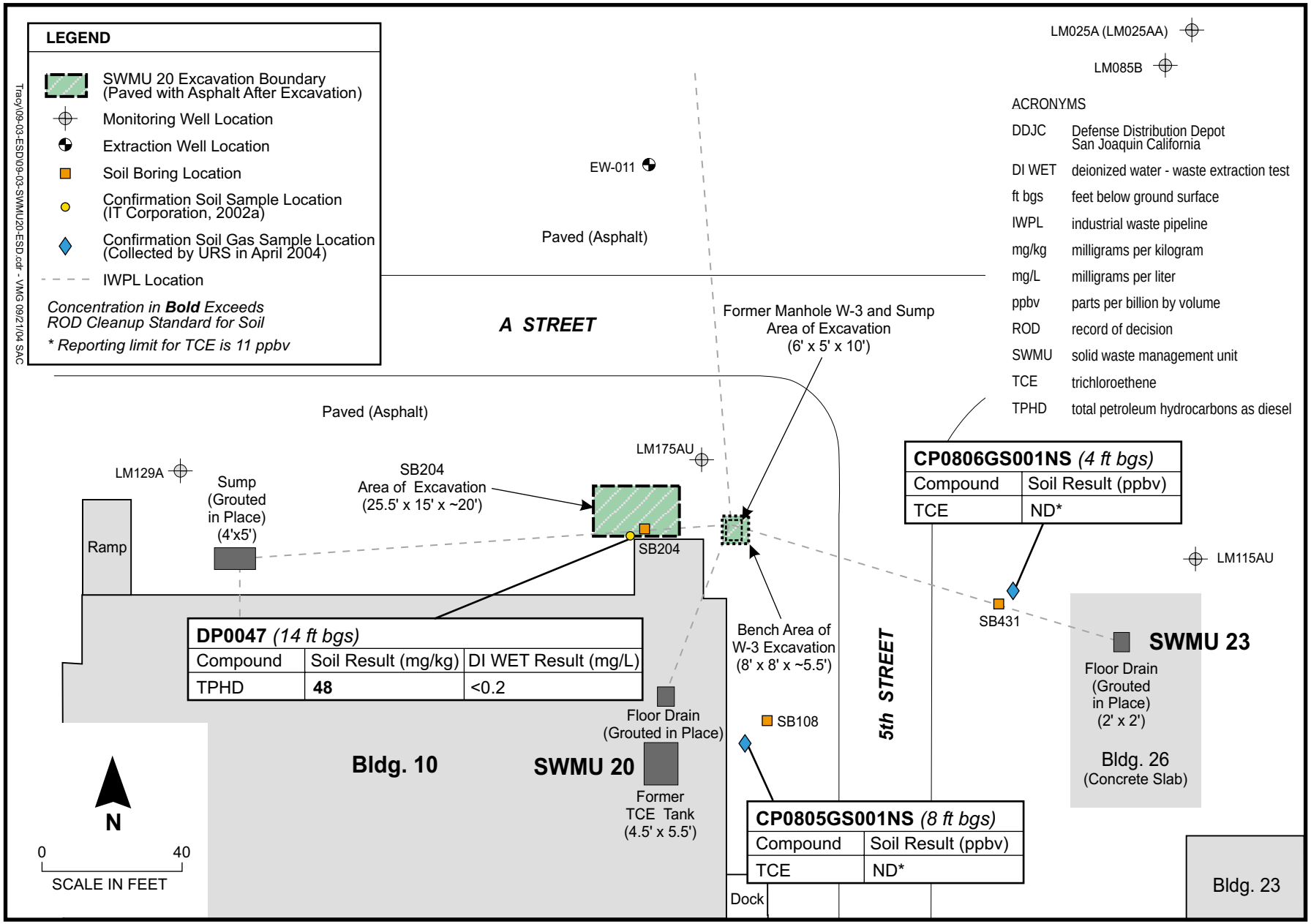


Figure 5-1. Residual Soil Contamination Above ROD Cleanup Standards and DI-WET Results, SWMU 20, DDJC-Tracy

This page intentionally left blank

Samples were collected adjacent to SB431 and SB108 where TCE was reported during the RI. TCE was not detected in either soil gas sample (see Appendix G).

5.3.2 The revised remedy supplements the excavation performed to date with land use controls. Land use controls improve the long-term effectiveness of the remedy at SWMU 20 and provide greater protection of human health and the environment.

5.4 Support Agency Comments

DDJC determined that the changes represented in this ESD did not fundamentally alter the remedial actions and proposed documenting these changes in an ESD in the 6 August 2003 RPM meeting. This ESD was added to the FFA schedule in October 2003. Responses to comments received for the draft, draft final, and final versions of this ESD are provided following the appendices to this document.

5.5 Statutory Determinations

The modified remedy satisfies the requirements of CERCLA §121.

5.6 Public Notification Compliance

Consistent with the requirements of 40 CFR§300.435, this ESD and supporting information are being made available to the public in the administrative record and information repository. A notice summarizing the ESD, including reasons for the differences, will be published in the *Tracy Press* and the *Stockton Record* in October 2004 and included in the administrative record.

6.0 DSERTS 67

This section reviews the nature of the existing cover at DSERTS 67, its adequacy for protecting human health, and the adequacy of institutional controls at the site.

6.1 Site History, Contamination, and Selected Remedy

DSERTS 67, also known as the Northern Depot Soils Area, is north of the storm drain and sewage lagoons (Figure 1-3). The site was reportedly used as a storage area for the National Stockpile of Strategic Metals. From shortly after World War II (WWII) until the 1980s, ferrous chromium ore was stored at this site. From shortly after WWII until the 1970s, manganese ore was also stored in this area. From 1980 to 1986, lead ballast was stored in this area.

6.1.1 Selected Remedy in the ROD

6.1.1.1 The analytical results of surface and near-surface soil samples collected in October 1994 during Phase II of the RI at DSERTS 67 indicated that arsenic and manganese may be introduced into airborne particulate matter at levels that posed potential non-carcinogenic risks to grader operators and construction workers (Figure 6-1). The RAO for DSERTS 67 was to prevent future grader operators or construction workers from being exposed to arsenic and manganese in the surface and near-surface soils that would result in an HI greater than 1.0 (Radian International, 1998a). The remedy selected in the ROD consisted of installing an asphalt cover over the soils that have elevated levels of arsenic and manganese. The total area requiring the cover was estimated in the ROD to be 138,000 square feet. The cover was intended to provide a barrier to prevent grader operators or construction workers from coming into contact with the surface soils containing elevated levels of arsenic and manganese. The ROD required the cover to be inspected annually to ensure that the asphalt remained intact. The chosen remedy did not reduce the toxicity or volume of the arsenic or manganese, but it reduced their mobility in surface and near-surface soils. The remedy is protective of human health and the environment by eliminating the direct contact pathway.

6.1.1.2 The ROD identified no chemical-specific applicable or relevant and appropriate requirements (ARARs) because arsenic and manganese concentrations in soil did not pose a threat to groundwater (Montgomery Watson, 1996). The potential concern was the inhalation, dermal contact, or ingestion of COPCs in surface and near-surface soil by grader operators or construction workers. Cleanup standards correspond to RBCs that reduced the HI to 1.0. The soil cleanup standards presented in the ROD as amended by the *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area* were 48 mg/kg for arsenic and 812 mg/kg for manganese. The *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area* also modified the remedy to an aggregate cover rather than specifying asphalt as was in the ROD (URS, 2001).

6.1.2 Actions Taken in Response to ROD Requirements

6.1.2.1 Between 8 April 2002 and 31 July 2002, construction activities were conducted to install the aggregate base (AB) cover in the southeastern portion of DSERTS 67 (IT Corporation, 2003), as shown on Figure 6-1. The area of the AB cover measures 65,700 square feet, which is greater than the 63,500 square feet estimated in the *Project Closeout Plan (Remedial Action Report), Northern Depot Area (DSERTS 67) Cover Installation, DDJC-Tracy* (IT Corporation, 2003).

6.1.2.2 Gravel previously installed over 16,400 square feet to the north of the AB cover is consistent with the ESD, but is not the equivalent of the AB cover (see Section 6.3 for details on maintenance requirements for all gravel surfaces). Preexisting asphalt covers an additional 5,200 square feet to the north of the AB cover (Figure 6-1). In addition, the Ground-

water Treatment Plant 1 (GWTP1) facility covers an area of 2,000 square feet of DSERTS 67 (Figure 6-1), preventing exposure to contaminated shallow surface and near-surface soils. The remaining 11,900 square feet is covered by soil supporting a dense growth of grass. Three design data collection effort (DDCE) samples collected within the grassy area and one sample collected immediately north of the grassy area found arsenic and manganese concentrations to be below the cleanup standards of 48 mg/kg and 812 mg/kg for arsenic and manganese, respectively (URS, 2001). These findings were documented in the approved Remedial Action Plan (IT Corporation, 2001c) and, as a result, the grassy area was not disturbed during the remedial action.

6.1.2.3 Institutional controls that are currently in place at DSERTS 67 are documented in the *DDJC-Tracy Remedial Action Reports for Institutional Controls at SWMUs 7 and 33, and Building 30 Drum Storage Area, and the Northern Depot Soils Area* (Radian International, 2000) and are summarized here. These institutional controls include:

- Signs to warn grader operators or construction workers that all excavation and construction projects require the approval of the DDJC-Tracy Facilities Engineer and Environmental Management;
- Notifications to the regulatory agencies prior to the removal and/or modification of the cover, which constitutes disruption of the selected remedy, and follow-up activities to ensure that the controls are fully restored;
- Inspections and maintenance of the cover to prevent the potential exposure of grader operators or construction workers to elevated concentrations of arsenic and manganese in surface and near-surface soils; and
- Land use restrictions to prevent schools, playgrounds, hospitals, or housing from being built until the COCs are below concentrations of concern (Radian International, 2000).

6.1.2.4 Signs were installed in three locations, including one near the grass area (Figure 6-1), to warn grader operators or construction workers that all excavation and construction projects require the approval of the DDJC-Tracy Facilities Engineer and Environmental Management.

6.2 Basis for Change

6.2.1 The approximate size for the cover at DSERTS 67 (138,000 square feet) stated in the ROD was a rough approximation made without survey data. A survey of the DSERTS 67 area was conducted on 14 May 2003. The total area of the DSERTS 67 area, as delineated in Figure 9-12 of the ROD, actually measured 101,200 square feet.

6.2.2 In accordance with the *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 4, 7, and 33, Building 30 Drum Storage Area*, and the Northern Depot Soils Area, most of the DSERTS 72 area is now covered with a mixture of gravel and asphalt aggregate. That ESD provided for a more generic aggregate cover based on the assumption that DSERTS 67 was no longer used for the training of grader operators, and its use was not expected to change in the foreseeable future. An aggregate cover was considered as effective in protecting human health and the environment as the remedy selected in the ROD (URS, 2001; IT Corporation, 2001a and 2001b). The cover, in conjunction with institutional controls, prevents the generation of dust containing arsenic and manganese that could be inhaled by grader operators or construction workers.

6.2.3 The AB, gravel, asphalt, and GWTP1 facility cover 88% of the DSERTS 67 area. The covers and structures are effective in protecting human health and satisfy the RAO in the ROD. The grass area in the northwestern portion of DSERTS 67, if disturbed, may provide an exposure pathway to surface and near-surface soil with concentrations of manganese and arsenic that exceed the cleanup standards.

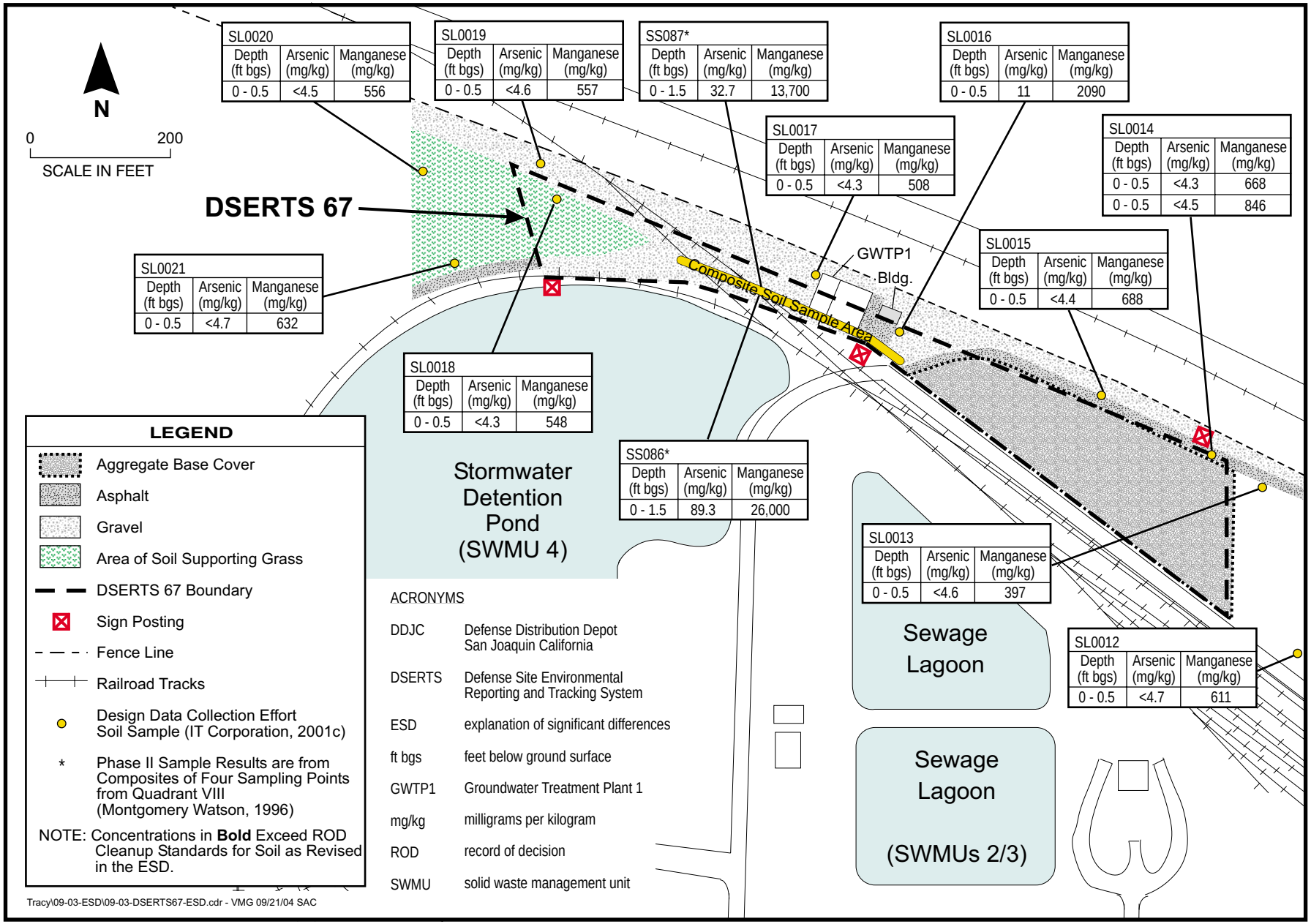


Figure 6-1. Aggregate Cover and Soil Sampling Results, DSERTS 67, DDJC-Tracy

This page intentionally left blank

6.2.4 The grass area in the northwestern portion of DSERTS 67 is approximately 12% of the total area of DSERTS 67 and does not have an aggregate cover in accordance with ROD requirements. Soil in this area may have concentrations of arsenic and manganese exceeding the cleanup standard, although one sample (SL0018) collected within the grass area of DSERTS 67 had concentrations of arsenic and manganese below cleanup standards (Figure 6-1). The grass area is inaccessible to grading equipment, and a warning sign will be installed to discourage dust-generating activities. No threat to groundwater was identified in the ROD for DSERTS 67, and the area was not considered habitat for ecological receptors in the Baseline Risk Assessment (Montgomery Watson, 1997b). Residual contamination does not pose a threat to the environment.

6.3 Description of Significant Differences

6.3.1 As reported in the *Remedial Action Documents for SWMU 8 Large Excavation Site and Northern Depot Area (DSERTS 67) Asphalt Cover Installation, DDJC-Tracy*, the area requiring the AB was reduced after the site was surveyed (IT Corporation, 2001c). The reduction in the area of the aggregate cover concerned the U.S. EPA because two composite soil samples (SS086 and SS087) collected during the RI/FS and one soil sample (SL0016) collected during the DDCE outside of the area of the AB cover had concentrations of arsenic and/or manganese exceeding the cleanup standards (Figure 6-1). All other soil samples collected during the RI/FS and DDCE in and near the area outside of the AB cover had concentrations of arsenic and manganese below the cleanup standards.

6.3.2 Supplemental institutional controls to the ones already in place are warranted to ensure the long-term protection of human health. Annual inspections will be performed as follows on all surfaces to control the exposure of surface soil and reduce the likelihood of dust generation:

- **Existing Structures:** Existing structures (i.e., GWTP 1) should be maintained. If structures are removed from within DSERTS 67, an asphalt or gravel cover should be installed.

- **Loose Gravel Surfaces:** Annual inspections of the integrity of all loose gravel surfaces in the DSERTS 67 area shall be performed to ensure that surface soils are not exposed. These inspections will ensure that at least 3 inches of gravel cover is maintained in these areas at all times. Furthermore, the inspection will also confirm that there is no more than 2 inches of subsidence of the gravel within any 6-foot span at DSERTS 67. All inspections will be documented in accordance with the requirements of Section 2.3 of this ESD.

- **Sealed Gravel Surfaces:** Portions of the site are covered with Soil Sement®. These surfaces will be inspected for cracks annually. Individual cracks ¼ inch (6 millimeters) or wider will be repaired before the rainy season (October). Any areas with extensive finer cracking will also be repaired.

- **Asphalt Surfaces:** The asphalt cover also must be inspected to ensure its integrity as required by the ROD. Individual cracks ¼ inch (6 millimeters) or wider will be repaired before the rainy season (October). Any areas with extensive finer cracking will also be repaired.

- **Vegetated Surfaces:** Vegetation existing on the western portion of the site should be maintained to prevent erosion and dust generation. As long as the vegetation is maintained, exposure to airborne dust is minimized.

6.3.3 Supplemental institutional controls (see Section 2.0) specify protocols for any ground-disturbing activities. These protocols must be followed and monitored, and personal protective equipment will need to be evaluated for potential future constructions workers performing any ground-disturbing activity at any portion of the site. Any change in the composition of the cover (e.g., converting asphalt to gravel) triggers the

pre-notification requirements that are described in Section 2.0 and Appendix F of this ESD.

6.3.4 Maintenance of the various covers is necessary to ensure the continued integrity and performance of the remedy. Additional signs are necessary to reduce or eliminate traffic on the covered areas, and additional signs are needed in the grass area to ensure that access is restricted and that the soil is not disturbed.

6.4 Support Agency Comments

DDJC determined that the changes represented in this ESD did not fundamentally alter the remedial actions and proposed documenting these changes in an ESD in the 6 August 2003 RPM meeting. This ESD was added to the FFA schedule in October 2003. Responses to comments received for the draft, draft final, and final versions of this ESD are provided following the appendices to this document.

6.5 Statutory Determinations

The modified remedy satisfies the requirements of CERCLA §121.

6.6 Public Notification Compliance

Consistent with the requirements of 40 CFR§300.435, this ESD and supporting information are being made available to the public in the administrative record and information repository. A notice summarizing the ESD, including reasons for the differences, will be published in the *Tracy Press* and the *Stockton Record* in October 2004 and included in the administrative record.

7.0 REFERENCES

Environmental Chemical Corporation (ECC), 1999. *Closure Report: Site Remediation for the Sewage and Industrial Waste Lagoons and the Industrial Waste Pipeline, DDJC-Tracy*. Final.

ICF Kaiser Engineers, Inc., 1999. *Remedial Action Documents for SWMU 6, 20, 27 Small Excavations and SWMU 4 Wet Season Controls*. Final. May.

IT Corporation, 2001a. *Technical Memorandum: Apatite Mineralization Bench-Scale Pilot Test, Northern Depot Area (DSERTS 67), Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy California*. May.

IT Corporation, 2001b. *Technical Memorandum: Evaluation of Remedial Alternatives, Northern Depot Area (DSERTS 67), Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California*. January.

IT Corporation, 2001c. *Remedial Action Documents for SWMU 8 Large Excavation Site and Northern Depot Area (DSERTS 67) Asphalt Cover Installation, Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California*. Revision 1. June.

IT Corporation, 2002a. *Project Closeout Plan (Remedial Action Report), SWMU 6, 20, 27 Small Excavation Sites and SWMU 4 Wet Season Controls, Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California*. Revised Draft Final. September.

IT Corporation, 2002b. *Technical Memorandum: SWMU 6 Supplemental Investigation, Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California*. July.

IT Corporation, 2003. *Project Closeout Plan (Remedial Action Report), Northern Depot Area (DSERTS 67) Cover Installation, Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California*. Draft Final. January.

Montgomery Watson, 1996. *Comprehensive Remedial Investigation/Feasibility Study Report*. Final. November.

Montgomery Watson, 1997a. *Comprehensive Site-Wide Proposed Plan*. Final.

Montgomery Watson, 1997b. *Comprehensive Sitewide Baseline Risk Assessment*.

Radian International, 1998a. *DDJC-Tracy Site-wide Comprehensive Record of Decision*. Final. April.

Radian International, 1998b. *Addendum to Future Development Report*.

Radian International, 2000. *DDJC-Tracy Remedial Action Reports for Institutional Controls at SWMUs 7 and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Final. July.

Remedial Project Managers, 2003. DDJC-Tracy Remedial Project Managers' Meeting Minutes for May 2002.

Shacklette, H.T., and J.G. Boerngen, 1984. *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*. U.S. Geological Survey Professional Paper 1270.

U.S. Environmental Protection Agency, 1999. *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*. July.

URS Group, Inc. (URS), 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July.

URS, 2003a. *Amendment to the Sitewide Comprehensive Record of Decision*. Final. December.

URS, 2003b. *DDJC-Tracy Well Monitoring Program, 2002 Annual Monitoring Report*. Final. May.

U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), 1980. *U.S. Army Toxic and Hazardous Materials Army Facilitation Assessment, Defense Depot Tracy, California*. Report No. 181. October.

Woodward-Clyde Consultants, 1993. *Operable Unit No. 1 Record of Decision, DDRW-Tracy, California*. Final. August.

APPENDIX A

SWMU 6 Modeling Results
(Source: IT Corporation, 2003)

**SUMMARY OF MODELING FOR POTENTIAL FOR IMPACT TO GROUNDWATER
RESIDUAL HERBICIDES IN SOIL, SWMU 6
DEFENSE DISTRIBUTION DEPOT SAN JOAQUIN CALIFORNIA, TRACY SITE**

The SWMU 6 remedial action effected the removal of soil impacted with Dieldrin, Lindane, trichlorophenoxyacetic acid (2,4,5-T), and other COCs from around and beneath the former washwater sump. Soil samples collected from the final excavation sidewalls indicated three scattered locations (DPOO38, DPO093, and DPOO94) where soil at depths of 10 feet below grade that contained Dieldrin, Lindane, and 2,4,5-T in excess of the cleanup levels specified in the ROD remained in place. Modeling of the potential for the Dieldrin, Lindane, and 2,4,5-T to impact groundwater quality indicates that any impact will be below the Water Quality Goals (WQGs) specified in the ROD.

The Figure 3-1 in the ESD shows the outline of the sump, the excavation, the collection points, and Dieldrin, Lindane, and 2,4,5-T results from the sampling. The Table 3-1 in the ESD lists Dieldrin, Lindane, and 2,4,5-T concentrations of all samples that were collected from final excavation surfaces or nearby soils following the remedial activities.

Excavation Effort

The conceptual model for the removed sump is a point source for the introduction of contaminated water into the subsurface (Radian International, 1998). The sump structure is reported to have been nine feet deep and approximately 8 feet x 8 feet in area (Montgomery Watson, 1996). The remedial excavation performed in 1999 included the removal of backfil1 in the former location of the sump, and soils on three sides of and beneath the former sump, to a total depth of 18 to 20 feet below grade.

The removal of soils from adjacent to the former sump was laterally limited by the presence of Building 28 (eastward) and an in-service, large-diameter sewer line (westward). Vertical shoring was used to stabilize the east and west walls of the excavation. The use of shoring ensured that all soil directly beneath the footprint of the former sump could be removed, regardless of proximity to the building or sewer. The presence of the building and sewer line prevented excavation away from the sump in two directions.

Distribution of Elevated COCs is Isolated and Contaminant Mass is Likely Small

Sixteen soil samples were collected following the excavation from all sides of the former sump and from beneath it. Eleven samples were col1ected from depths of 10 to 14 feet below grade, where the greatest impact from contaminated water might be expected if the sump failed.

The distribution of results from the samples indicates that the exceedances of the cleanup standards for Dieldrin, Lindane, and 2,4,5-T were geographically scattered and confined to a common depth of 10 feet.

The lateral distribution of Dieldrin, Lindane, and 2,4,5-T indicated by the samples appears to be random. Five results exceeded cleanup levels for one analyte or the other. The location of another exceedance (sample DPOO34) was subsequently overexcavated and that result is omitted from further discussion.

Each of the three samples collected from final excavation surfaces were collected from the western and eastern walls of the excavation. The western and eastern extents of excavation - the excavation walls - were constrained by infrastructure, and could not be advanced far from the former sump walls (see Figure 3-1 in the ESD). The northern and southern extents of excavation - the excavation walls - were unconstrained by any nearby structures, and hence were advanced further from the former sump walls than the north and south extents of the excavation. This may explain why samples from the south and

north walls had lower herbicide concentrations than samples from the east and west walls. This pattern is consistent with the conceptual model of the sump as a point source of the contamination.

The highest result (sample DPO038: 160 J µg/kg Dieldrin) was laterally isolated from the other two exceedances of in-place soils. Sample DPO038 passes tests that identify it as a statistical outlier:

- It lies outside the 99th confidence interval; and
- It lies more than 3 times the width of a box-and-whiskers plot, above the top of such a box.

Sample DPO038 does not adjoin any of the other locations where Dieldrin exceeded the soil cleanup standard. The other two exceeding results were as high as 4 J µg/kg and 8.4 µg/kg; these were also collected from depths of 10 feet. When this information is considered in the context of the removal of a point source, it is concluded that the post-removal sampling indicates isolated, laterally insignificant remnants of residual impact. This conclusion supports the validity of the modeling approach to reevaluate whether the residues indicate a threat to groundwater.

Purpose of Modeling

The selection of a remedy for SWMU 6 was made contingent on an expectation that the SWMU 6 former sump was a point source for COCs that had a limited distribution and could be removed within an excavation made next to Building 28 and within the confines of nearby underground utilities. However, several confirmation samples from the excavation surfaces contained concentrations of COCs above the cleanup standards. Because soil sampling suggests that the residual mass of these analytes is minimal, it was deemed appropriate to evaluate whether the remedial effort might have in fact achieved the RAO of protection of groundwater.

Summary of Finding: Groundwater Will Not be Impacted in Excess of ROD Goals

An evaluation of the potential of Dieldrin, Lindane, and 2,4,5-T to impact groundwater was made and no impact was indicated at the WQGs (Beneficial Use Limits) or other criteria presented within the RI/FS and ROD. Those criteria were:

- The ROD-specified Beneficial Use Limits (BUL) (0.002 µg/L for Dieldrin, 0.3µg/L for Lindane, and no BUL for 2,4,5-T was established);
- The ROD-specified Background Threshold Values (BTV) (0.005 µ/L for Dieldrin and Lindane and the BTV for 2,4,5-T was not established); and
- The Method Detection Limits (MDL) (0.006 J µg/L for Dieldrin and Lindane and 0.048 µg/L for 2,4,5-T).

The basis for the Finding is explained in the remainder of this document.

Choice of Modeling Software

The modeling was done using input parameters and methods similar to those used in the RI/FS and relied on in the ROD. The modeling was performed twice, in two different software packages: SESOIL used in the RI/FS process (Montgomery Watson, 1996), and VLEACH, also a well-recognized software package for modeling problems of this type.

Both models are one-dimensional, meaning that the contaminants are not permitted to disperse laterally. This is a conservative approach because the former sump is conceived as a point source (Radian International, 1998), and actual subsurface processes would likely result in both vertical and lateral dispersion of the residual herbicides, resulting in less migration to groundwater.

Input Parameters

Numerous variables were necessary as input to each model. A discussion of some of the variables is made below:

Source Term. The source term was assumed to be a 10-foot thick zone of soil (extending from 5 to 15 feet below grade). The herbicide concentration was set equal to the highest herbicide concentration in the sample pool: 160 J µg/kg for Dieldrin, 4 µg/L for Lindane, and 12 µg/L for 2,4,5-T. The concentration was set to decrease exponentially to the Method Detection Limit (MDL) (0.004 J µg/kg) upward and downward 5 feet. In this way, the concentration decreased as the ground surface was approached, diminishing to the MDL at 5 feet below grade, and decreased at depths below the 10-foot depth, diminishing also to the MDL at 15 feet below grade.

Analyte Properties. Properties of the analytes (such as K_{oc} - organic carbon partition coefficient, S - solubility; Kh – Henry's Law constant, and Di,a - free air diffusion coefficient) were taken from the U.S. EPA document (U.S. EPA, 1996). The values of several of these parameters differ from those used in the RI/FS (Montgomery Watson, 1996), which relied for many parameters on a U.S. EPA document that had been published in 1986, 10 years prior (Montgomery Watson, 1996).

Soil Properties. Properties of the soil (such as density, porosity, and total organic carbon content) were taken, if available, from the input data used for similar modeling in the *RI/FS* (Montgomery Watson, 1996). Where such variables were unavailable from the RI/FS they were taken from accepted sources such as U.S. EPA documents.

Climatologic Parameters. For SESOIL, climatologic parameters were generated by the database incorporated within the software. The database used the Sacramento weather station because it was the closest weather station to Tracy in the database. The mean seasonal precipitation and infiltration from this station were used.

For VLEACH, an annual precipitation of 20 inches was assumed. This is conservative, as the RI/FS used an annual precipitation of 13.77 inches in modeling vadose zone migration at the site (Montgomery Watson, 1996).

Infiltration. For VLEACH, an infiltration rate of 15% was assumed. The infiltration rate in SESOIL was calculated based on the annual precipitation, runoff, and evapotranspiration, etc. Although the site surface is asphalt-paved, it was conservatively assumed for the SESOIL calculation to be unpaved. In comparison with the actual values, the SESOIL-calculated infiltration is overestimated, resulting in an overestimation of the potential for migration of herbicide residues.

Decay. No decay factors were used. This is a conservative assumption because it neglects the effects of any possible degradation of the analytes.

Result

The predicted maximum concentration of Dieldrin, Lindane, and 2,4,5-T that would occur in groundwater (at the point of leachate contact with groundwater) is listed below, and compared to the ROD-specified thresholds (Radian International, 1998).

Dieldrin. 0.000000056 (or 5.6 *x* 10^{-8}*) µg/L.* A 30-year SESOIL simulation suggests that the Dieldrin will impact groundwater five years from present, at a concentration of 5.6 x 10^{-8} µg/L, based on a stochastic model for precipitation and other climatic parameters. A 30-year VLEACH simulation suggests that the maximum Dieldrin concentration in groundwater will be 7.5 x 10^{-14} µg/L. Based on the modeling, the maximum Dieldrin concentration in the groundwater will be about 0.00001 of any of the WQGs (BUL of 0.002 µg/L, BTV of 0.005 µg/L, and MDL of 0.006 µg/L).

Lindane. 0.00133 µg/L. A 30-year VLEACH simulation suggests that the maximum Lindane concentration in groundwater will be 0.00133 µg/L. A 30-year SESOIL simulation suggests that the Lindane will impact groundwater to a concentration of 0.00055 µg/L, five years from present, based on average precipitation and zero runoff of rainwater. Based on the modeling, the maximum Lindane concentration in the groundwater will be less than all the WQGs (BUL of 0.2 µg/L, BTV of 0.005 µg/L and MDL of 0.006 µg/L).

Trichlorophenoxyacetic acid. 0.010 µg/L. A 30-year VLEACH simulation suggests that the maximum 2,4,5-T concentration in groundwater will be 0.010 µg/L. A 30-year SESOIL simulation suggests that 2,4,5-T will impact groundwater one year from present, at a maximum concentration of 0.0075 µg/L. Based on modeling, the maximum 2,4,5-T concentration in the groundwater will be less than the MDL (0.048 µg/l). The BUL and BTV have not been established for 2,4,5-T.

Discussion

Modeling of the herbicide residues using conservative factors, consistent with the RI/FS (Montgomery Watson, 1996) had indicated that very low concentrations of Dieldrin and Lindane could potentially reach the water table after several years and low concentrations of 2,4,5-T could potentially reach groundwater after one year. Two models were run. The results of both models indicated that the concentrations would be below the Water Quality Goals (Beneficial Use Limits, Background Threshold Values, and Method Detection Limits).

Based on this modeling and the removal of near-source impacted soil, it is concluded that the residual herbicide concentrations found in and near the remedial excavation are not a threat to groundwater.

References

Hetrick, D. M. and Scott, S. J. 1994. The New SESOIL User's Guide. Wisconsin Department of Natural Resources.

Montgomery Watson, 1996. *Comprehensive Remedial Investigation/Feasibility Study, Defense Distribution Region West, Tracy, California.* November.

Radian International, 1998. *Final Site-Wide Comprehensive Record of Decision (ROD), Defense Distribution Depot San Joaquin (DDJC). Tracy Site, Tracy, California.* April.

Ravi, V. and Johnson, J. A., 1996. VLEACH - A One-Dimensional Finite Difference Vadose Zone Leaching Model, Version 2.2a. U.S. EPA Robert S. Kerr Environmental Research Laboratory, Ada, Oklahoma.

U.S. EPA, 1996. Soil Screening Guidance: User's Guide, Publication 9355.4-23, July. Waterloo Hydrogeologic, Inc., 2001. WHI Unsat Suite User's Manual, 1-0 Unsaturated Zone Flow and Transport Modeling Using SESOIL, VLEACH, VS20T, PESTAN, and Visual HELP.

APPENDIX B

SESOIL and VLEACH Input Parameters and Output Results (Source: Shaw Environmental and Infrastructure, Inc.)

CONTENTS OF CD-ROM

- SWMU 6 Input and Output using the SESOIL modeling program.

  — Lindane
  Model 1: Concentration of 4 µg/kg at a depth of 5 to 15 feet below ground surface
  — Dieldrin
  Model 2: Concentration of 160 µg/kg at a depth of 5 to 15 feet below ground surface
  — 2,4,5-Trichlorophenoxyacetic acid
  Model 3: Concentration of 12 µg/kg at a depth of 10 to 10.5 feet below ground surface

  – Input: 1) General input parameters, including soil, chemical, and application input parameters; 2) Monthly input parameters for a 30-year simulation, including climatic and pollutant input parameters; and 3) Modified summers model parameters.

  – Output: 1) Monthly results for 30-year simulation, including hydrologic cycle components, pollutant mass input to column, pollutant mass distribution in column, and pollutant concentrations; and 2) Annual summary report for 30-year simulation, including total inputs, hydrologic cycle components, pollutant mass distribution in column, and average pollutant concentrations.

- SWMU 6 Input and Output using the VLEACH modeling program.

  — Lindane
  Model 1: Concentration of 4 µg/kg
  — Dieldrin
  Model 2: Concentration of 160 µg/kg
  — 2,4,5-Trichlorophenoxyacetic acid
  Model 3: Concentration of 12 µg/kg

  – Input is provided on the first two pages of a 100-year model run for a polygon that is 1 square foot and 20 feet thick.

  – Output is provided on the following 41 pages. The output includes the total mass in the vadose zone, gas phase, liquid phase, and the mass sorbed from time zero to 100 years, groundwater impact to the polygon, and total groundwater impact.

- SWMU 8 Input and Output using the SESOIL modeling program.

  — DDT
  Model 1: Concentration of 47 µg/kg at a depth of 4 feet below ground surface
  Model 2: Concentration of 22 µg/kg at a depth of 12 feet below ground surface
  Model 3: Concentration of 47 µg/kg at a depth of 7 to 7.5 feet below ground surface

– Input: 1) General input parameters, including soil, chemical, and application input parameters; 2) Monthly input parameters for a 30-year simulation, including climatic and pollutant input parameters; and 3) Modified summers model parameters.

– Output: 1) Monthly results for 30-year simulation, including hydrologic cycle components, pollutant mass input to column, pollutant mass distribution in column, and pollutant concentrations; and 2) Annual summary report for 30-year simulation, including total inputs, hydrologic cycle components, pollutant mass distribution in column, and average pollutant concentrations.

- SWMU 8 Input and Output using the VLEACH modeling program.

  — DDT

  Model 1: Concentration of 47 µg/kg at a depth of 7 to 7.5 feet below ground surface

  – Input is provided on the first two pages of a 100-year model run for a polygon that is 1 square foot and 20 feet thick.

  – Output is provided on the following 41 pages. The output includes the total mass in the vadose zone, gas phase, liquid phase, and the mass sorbed from time zero to 100 years, groundwater impact to the polygon, and total groundwater impact.

Note: Shaw Environmental and Infrastructure, Inc. provided all data and modeling results.

See folder on CD entitled

Appendix B SESOIL and VLEACH

APPENDIX C

Residual Contamination Mass Estimates

Residual Mass Estimates for SWMU 6

Constituent	Maximum Concentration Detected (µg/kg)*	Volume of Soil to be Excavated per ROD (yds^3)	Estimated Maximum Mass of Contamination per ROD (kg)	Actual Volume of Soil Excavated (yds^3)	Estimated Mass of Contamination Removed (kg)	Confirmation Sampling Avg. Concentration (µg/kg)	Estimated Mass of Residual Contamination Remaining (kg)***
Dicamba	3.84	100	4.70E-04	245	1.15E-03	--	--
Dieldrin	43.2**	100	5.29E-03	245	1.30E-02	43.2	5.98E-03
Endrin	66.7	100	8.17E-03	245	2.00E-02	--	--
Heptachlor	23.0	100	2.82E-03	245	6.90E-03	--	--
Lindane	56.0	100	6.86E-03	245	1.68E-02	4.3	5.95E-04
2,4,5-T	74.8	100	9.16E-03	245	2.24E-02	5.2	7.20E-04
TOTAL		100	**0.033**		**0.080**		**0.00729**
			= (0.07 lbs.; ROD states 0.1 lbs.)		(= 0.18 lbs.)		(= 0.016 lbs.)

% of total mass removed versus mass remaining at SWMU 6 and vicinity = ~ 98% removal of contaminant mass in soils at this site

*Maximum concentrations obtained from the Final Remedial Design Work Plan (October 1998) .
**During excavation dieldrin concentrations were higher than concentrations specified in Remedial Design Work Plan (October 1998).
***Residual mass contamination remaining based on 113 cubic yards of potential excavation east of 48-in storm drain and west of Bldg. 28 of SWMU 6.

Assumptions:

1) Mass estimate calculation based on average concentrations for analytes from samples collected from in-place materials removed from SWMU 6 (IT, 2002a)
2) Residual mass estimates based on assumptions that average concentrations would be consistent for additional excavation efforts east and west of SWMU 6
3) Extent of hypothetical mass remaining based on volume of 113 cubic yards that would be excavated from areas extending 6.5 feet east and west of present excavation boundaries to a depth of 10 feet bgs.
4) Average specific gravity of typical soils removed from site based on field soil tests = 1.3 tons/cubic yard of soil (Source: Shaw Environmental, Inc.)

Residual Mass Estimates for SWMU 8

Constituent	Concentration ** Detected (µg/kg)	to be Excavated per ROD (yds^3)	Mass of Contamination per ROD (kg)	Actual Volume of Soil Excavated (yds^3)	of Contamination Removed (kg)	Contamination In-Place Avg. Concentration (µg/kg)	Residual Contamination Remaining (kg)*
SVOCs							
bis(2-Ethylhexyl)phthaltate	4,000	8,000	39.2	17,180	84.2	--	--
Diethylphthalate	120	8,000	1.2	17,180	2.5	--	--
2,4-Dinitrotoluene	220	8,000	2.2	17,180	4.6	--	--
Naphthalene	2,100	8,000	20.6	17,180	44.2	--	--
		subtotal - SVOCs	*63.1*		*135.5*		--
			(= 139.1 lbs.; ROD mass est. = 6.5 lbs.)		(= 298.7 lbs.)		
Pesticides and Herbicides							
Chlordane, Total	2,130	8,000	20.9	17,180	44.8	15	0.0679
2,4-D	47.2	8,000	0.5	17,180	1.0	--	--
DDD	51,400	8,000	503.6	17,180	1,081.5	24.8	0.1123
DDE	15,200	8,000	148.9	17,180	319.8	--	--
DDT	2,640	8,000	25.9	17,180	55.5	35.9	0.1625
DDX, Total	69,240	8,000	678.4	17,180	1,456.8	--	--
Dieldrin	2,640	8,000	25.9	17,180	55.5	10.4	0.0471
Lindane	34.3	8,000	0.3	17,180	0.7	--	--
Linuron	280	8,000	2.7	17,180	5.9	--	--
MCPA	82.5	8,000	0.8	17,180	1.7	--	--
Simazine	300	8,000	2.9	17,180	6.3	--	--
		subtotal - Pesticides, etc.	*732.4*		*1,572.8*		*0.390*
			(= 1,614.7 lbs.; ROD mass est. = 143.5 lbs.)		(= 3,467.4 lbs.)		
Petroleum Hydrocarbons							
TPH-G	11	8,000	0.1	17,180	0.2	--	--
TPH-D	2,600	8,000	25.5	17,180	54.7	--	--
TPH (motor oil)	14,000	8,000	137.2	17,180	294.6	--	--
		subtotal - TPH	*162.7*		*349.5*		*0.00*
			(= 358.7 lbs.; ROD mass est. = 2,242.2 lbs.)		(= 770.5 lbs.)		
TOTAL		8,000	**958.3**		**2,057.9**		**0.390**
			(= 2,112.7 lbs.; ROD states 2,392.1 lbs.)		(= 4536.9 lbs.)		(= 0.86 lbs.)

% of total mass removed versus mass remaining at SWMU 8 and vicinity = ~ 99.98% removal of contaminant mass in soils at this site

*Based on 1,115 cubic yards of potential additional excavation northwest, sourthwest and south of SWMU 8
**Maximum concentration based on concentrations found in Remedial Design Work Plan (October 1998).

Assumptions:
1) Mass estimate calculation based on average concentrations for analytes from samples collected from in-place materials removed from SWMU 8.
2) Residual mass estimates based on assumptions that average concentrations would be consistent for additional excavation efforts northwest, southeast, and south of SWMU 8
3) Extent of hypothetical mass remaining is based on a volume of 1,115 cubic yards of potential excavation remaining at SWMU 8.
See *Volume Calculations for SWMU 8* for the extent of contamination remaining.
4) Based on field soil test the average specific gravity of typical soils is 1.3 tons/cubic yard of soil (Source: Shaw Environmental, Inc.)
5) Actual volume excavated at SWMU 8 was 17,180 cy (Source: Shaw Environmental, Inc.)

VOLUME CALCULATIONS FOR SWMU 6

Summary:

Calculated volume removed as of July 1999:

$$Volume = (23.435\,ft)(13.125\,ft)(19\,ft)\left(\frac{1cf}{27cy}\right) = 216.44cy \approx 217cy$$

Actual volume excavated at SWMU 6 as of July 1999. (Source: Shaw Environmental, Inc.)

$$Actual \quad Volume = 245cy$$

II. Potential excavation is based on samples collected at DP000038, DP0039, DP0093, & DP0094; impacted area is EAST of Bldg. 28 and West of 48-inch storm drain; Estimated volume is based on a depth of 10-ft bgs

$$Volume_{Potential\ Excavation\ East\ of\ Bldg\,28} = (23.43\,ft)(6.5\,ft)(10\,ft)\left(\frac{1cf}{27cy}\right) = 56.41cy$$

Assume same excavation footprint West of 48-inch Storm Drain:

$$Volume_{Potential\ Excavation\ West\ of\ 48inch\ Pipe} = 56.41cy$$

Calculated potential excavation remaining at SWMU 8 is:

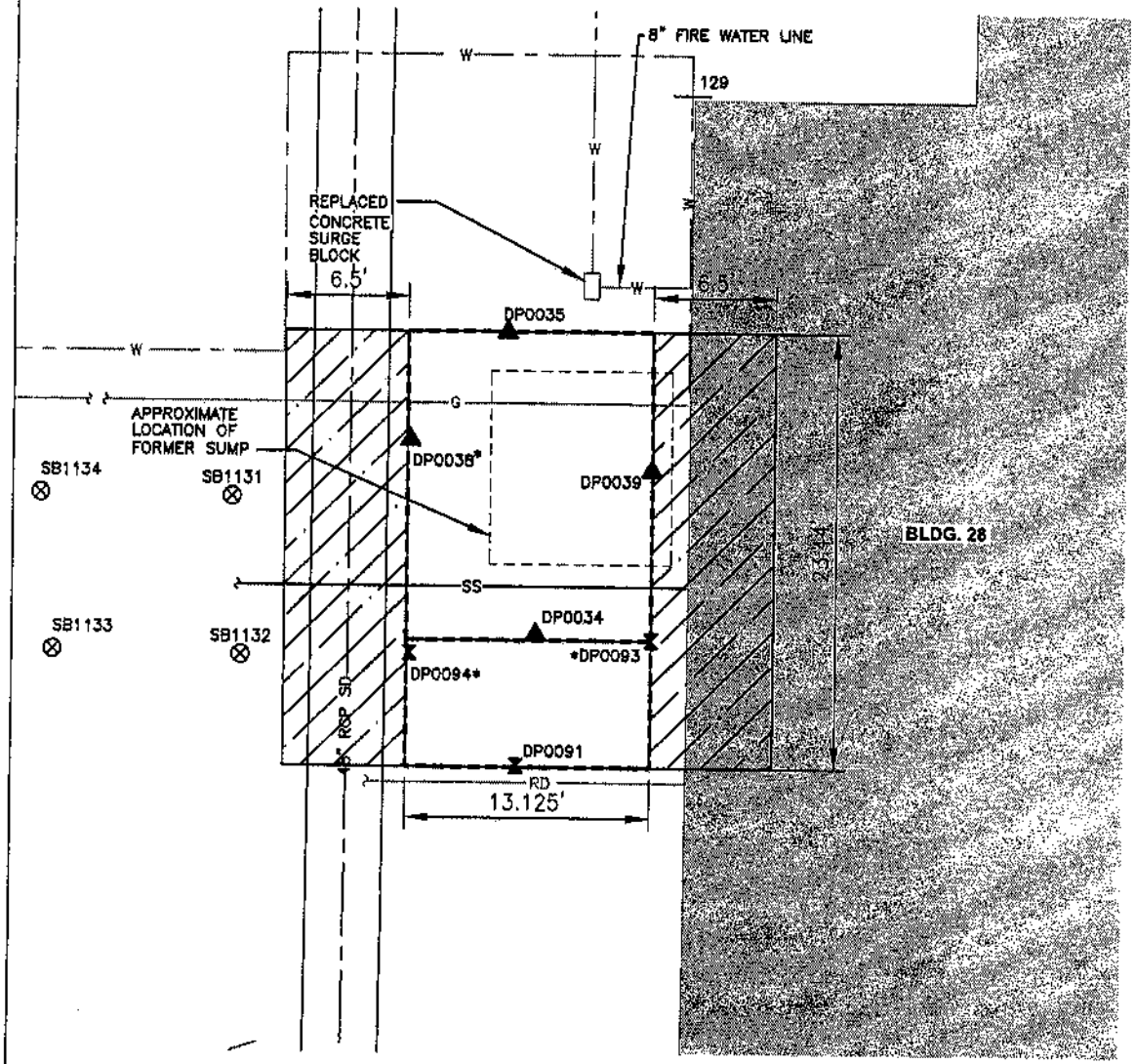
Volume **= 113 cy**

Assumptions:

1. DP0038, DP0039, DP0093 and DP0094 confirmation samples were used to determine potential excavation footprint. Excavation footprint is based on half the total width of the original ROD footprint, and half the total length.
2. Total volume excavated at SWMU 6, original excavation footprint and step-out excavation, was 245 cy. (Source: Shaw Environmental, Inc.)

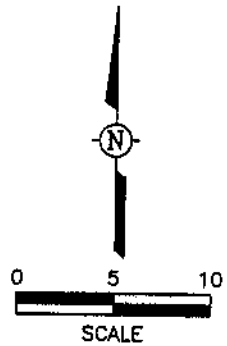
PLOT BY: TMARTIN – Mar 24, 2004 – 10:56:28am
DRAWING: H:\CADD\Historical\Projects\Tracy\20040107\Final Tracy Figures\040107-814.dwg

IMAGES: Team,TIF
XREFS:



LEGEND

- SOIL/GROUNDWATER SAMPLE LOCATION
- 1999 SIDEWALL SAMPLE
- 1999 STEPOUT SIDEWALL SAMPLE
- W — WATER LINE
- G — GAS LINE
- SD — STORM DRAIN LINE
- SS — SANITARY SEWER
- RD — ROOF DRAIN
- REMEDIAL EXCAVATION EXTENT AS OF JULY 99
- * CONFIRMATION SAMPLE EXCEEDS ROD CLEANUP STANDARD
- POTENTIAL ADDITIONAL EXCAVATION NOT FEASIBLE DUE TO IN-SERVICE PIPE-LINE AND BLDG. 28



SOURCE: SHAW ENVIRONMENTAL, INC (2002)

ASSUMPTIONS:

- DP0038, DP0039, DP0094 AND DP0093 CONFIRMATION SAMPLES WERE USED TO DETERMINE POTENTIAL EXCAVATION FOOTPRINT.
- POTENTIAL EXCAVATION FOOTPRINT IS BASED ON HALF THE TOTAL WIDTH OF ORIGINAL ROD FOOTPRINT, AND TOTAL LENGTH; THE DISTANCE FROM SOIL BORINGS (SB1131 AND SB1132) TO FINAL EXCAVATION LIMIT IS 9.37 FT; S[illegible] AND SB1132 CONFIMATION SAMPLES WERE NON-DETE[illegible]

URS
2520 Venture Oaks Way, Ste. 250
Sacramento, CA 95833-3200
TEL[illegible]29-2346
FA[illegible]29-7263

SWMU6: POTENTIAL ADDITIONAL EXCAVATION

Defense Distribution Depot San Joaquin (DDJC)
Tracy Site, Tracy, California

Dieldrin,Lindane and 2,4,5-T Concentrations Above Cleanup Standards			
Sample*	Dieldrin Concentration (µg/kg)	Lindane Concentration (µg/kg)	2,4,5-T Concentration (µg/kg)
DP0038	160	<23	12J
DP0093	8.4	<2	<5.8
DP0094	4	4	<5.9
DP0039	0.4J	0.8J	<5.8
AVERAGE	**43.2**	**4.3**	**5.2**

*Samples taken at 10 ft bgs.

Assumptions:

1. Concentrations based only on west and east wall samples.
2. J-values are considered accurate.
3. Less than values considered at half the maximum value.
4. Concentrations values underlined exceed cleanup standards.

VOLUME CALCULATIONS FOR SWMU 8

Summary

Excavated Volume (Includes Original Footprint and Over-Excavation Area)
Total Volume Removed = 386,558 cf or 14,317 cy

Actual Volume removed @ SWMU 8 = 17,180 cy (Shaw Environmental, Inc.)

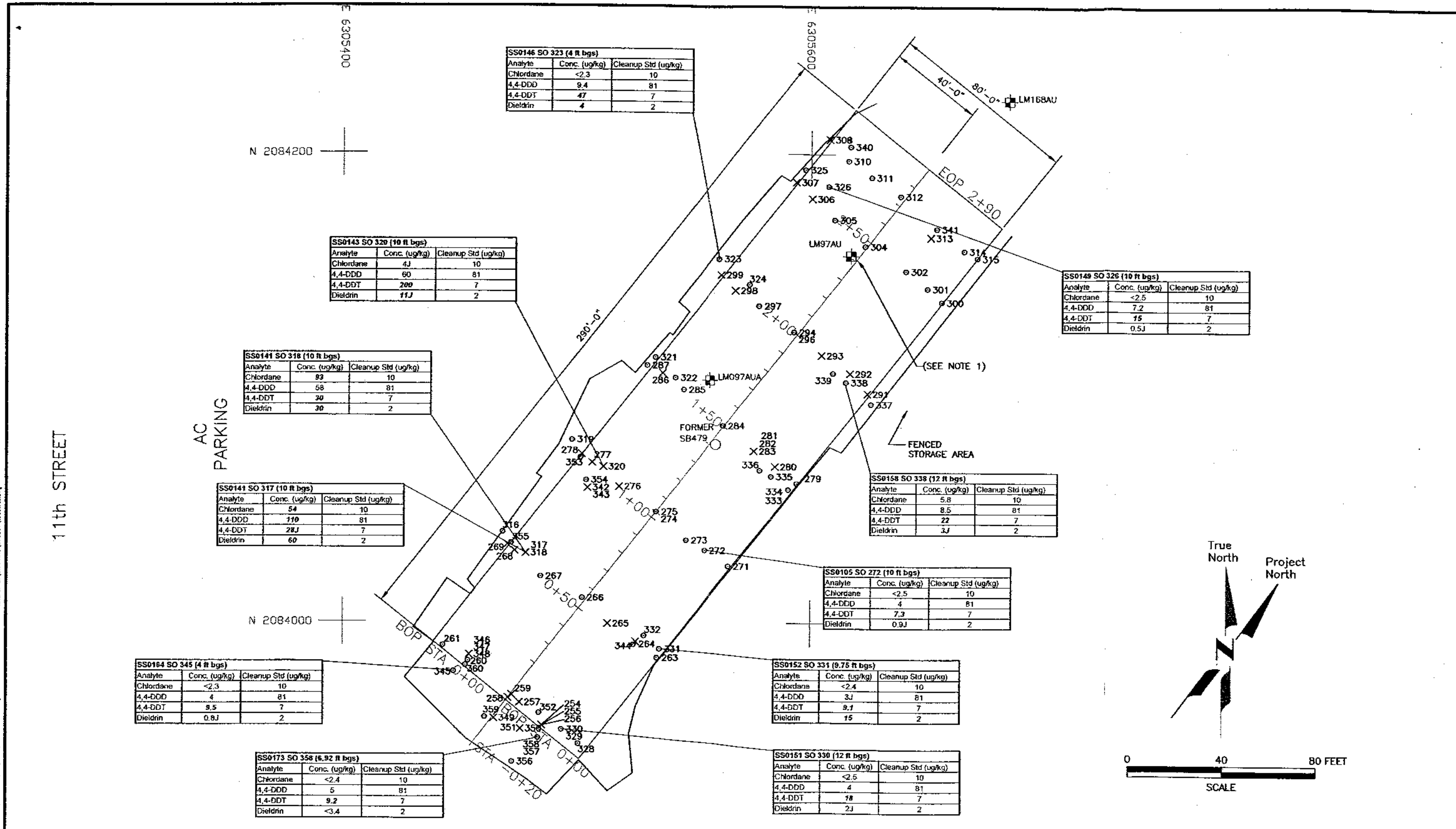
Potential Excavation remaining based on confirmation samples above cleanup standards.
Potential Excavation = 25,074 cf or 929 cy

Adjusted volumes for soil expansion:

TOTAL VOLUME REMOVED @ SWMU 8	14,317 CY	1.2	17,180 CY
POTENTIAL EXCAVATION REMAINING @ SWMU 8	929 CY	1.2	1,115 CY

Assumptions:

1. No cross-section was given for the south wall, assume cross section AA-AA (STA 0 – 20) is the same as A-A (STA 0 + 00); assume total length for cross section AA-AA is 20 ft.
2. Assume soil expansion factor of 1.2.
3. Estimated potential volume remaining at SWMU 8 is based on confirmation samples that exceed cleanup level. (Source: Shaw Environmental, Inc.)
4. Cross-sections provided by Shaw Environmental, Inc; see attached figure



SS0146 SO 323 (4 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.3	10
4,4-DDD	9.4	81
4,4-DDT	**47**	7
Dieldrin	**4**	2

SS0143 SO 320 (10 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	4J	10
4,4-DDD	60	81
4,4-DDT	**200**	7
Dieldrin	**11J**	2

SS0149 SO 326 (10 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.5	10
4,4-DDD	7.2	81
4,4-DDT	**15**	7
Dieldrin	0.5J	2

SS0141 SO 318 (10 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	**93**	10
4,4-DDD	58	81
4,4-DDT	**30**	7
Dieldrin	**30**	2

SS0141 SO 317 (10 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	**54**	10
4,4-DDD	**110**	81
4,4-DDT	**28J**	7
Dieldrin	**60**	2

SS0158 SO 338 (12 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	5.8	10
4,4-DDD	8.5	81
4,4-DDT	**22**	7
Dieldrin	**3J**	2

SS0105 SO 272 (10 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.5	10
4,4-DDD	4	81
4,4-DDT	**7.3**	7
Dieldrin	0.9J	2

SS0164 SO 345 (4 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.3	10
4,4-DDD	4	81
4,4-DDT	**9.5**	7
Dieldrin	0.8J	2

SS0152 SO 331 (9.75 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.4	10
4,4-DDD	3J	81
4,4-DDT	**9.1**	7
Dieldrin	**15**	2

SS0173 SO 358 (6.92 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.4	10
4,4-DDD	5	81
4,4-DDT	**9.2**	7
Dieldrin	<3.4	2

SS0151 SO 330 (12 ft bgs)		
Analyte	Conc. (ug/kg)	Cleanup Std (ug/kg)
Chlordane	<2.5	10
4,4-DDD	4	81
4,4-DDT	**18**	7
Dieldrin	2J	2

LEGEND

Monitoring Well

o Final Soil Confirmation Sample

ADDITIONAL NOTES:

CRE – concentration requiring evaluation (ug/L)
NA – not analyzed,
J – Estimated value

SOURCE: SHAW ENVIRONMENTAL, INC (2002)

URS
2520 Venture Oaks Way, Ste. 250
Sacramento, CA 95833-3200
TEL: (916) 929-2346
FAX: (916) 929-7263

SWMU8: CONFIRMATION SAMPLES ABOVE ROD CLEAN-UP STANDARD

Defense Distribution Depot San Joaquin (DDJC)
Tracy Site, Tracy, California

PLOT BY: TMARTIN – Mar 24, 2004 – 11:01:40am
DRAWING: H:\CADD\Historical\Projects\Tracy\20040107\Final Tracy Figures\040107-824.dwg
IMAGES:
XREFS: O:\DRAFTING\870507\basemap.dwg

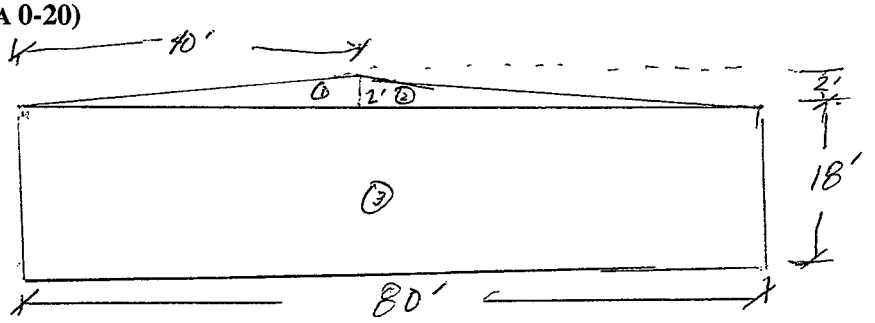
Chlorane, DDD, DDT and Dieldrin Concentrations Above Cleanup Standards				
Sample*	Chlorane Concentration (µg/kg)	DDD Concentration (µg/kg)	DDT Concentration (µg/kg)	Dieldrin Concentration (µg/kg)
SS0141-S0-272	<2.5	4	7.3	0.9J
SS0141-S0-317	54	110	28J	60
SS0141-S0-318	93	58	30	30
SS0143-S0-320	4J	60	200	11J
SS0146-S0-323	<2.3	9.4	47	4
SS0149-S0-326	<2.5	7.2	15	0.5J
SS0151-S0-330	<2.5	4	18	2J
SS0152-S0-331	<2.4	3J	9.1	1J
SS0158-S0-338	5.8	8.5	22	3J
SS0164-S0-345	<2.3	4	9.5	0.8J
SS0164-S0-358	<2.4	5	9.2	<3.4
Average	**15.0**	**24.8**	**35.9**	**10.4**

*Samples taken at depths ranging from 4 ft to 12 ft.

Assumptions:

1. J-values accurate considered accurate.
2. Less than values considered at half the maximum value.
3. Concentrations values underlined exceed cleanup standards.

AA-AA (STA 0-20)



(**SOURCE: SHAW.** *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.*)

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 0.5[40\,ft * 3.5\,ft * 2\,ft = 140cf]$

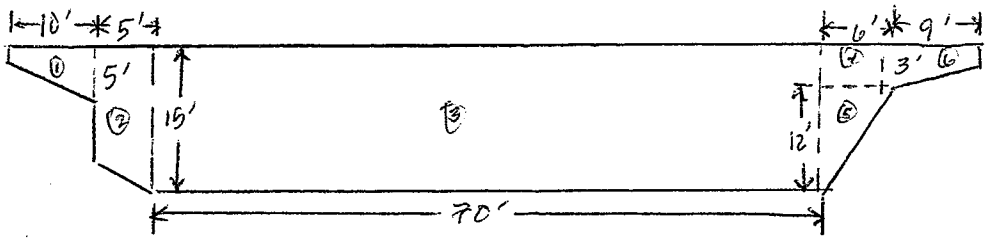
② $= 0.5[40\,ft * 3.5\,ft * 2\,ft = 140cf]$

③ $= 80\,ft * 9\,ft * 18\,ft = 12960cf$

TOTAL VOLUME EXCAVATED: 13240 CF OR 490 CY

ESTIMATED VOLUME REMOVED IS BASED ON CONFIRMATION SAMPLES TAKEN ON THE SOUTH END OF SWMU 8.

A-A (STA 0-00)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.* **)**

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 0.5[10\,ft * 5\,ft * 50\,ft = 2500cf]$

② $= 5\,ft * 15\,ft * 50\,ft = 3750cf$

③ $= 70\,ft * 15\,ft * 50\,ft = 52500cf$

④ $= 6\,ft * 3.5\,ft * 50\,ft = 1050cf$

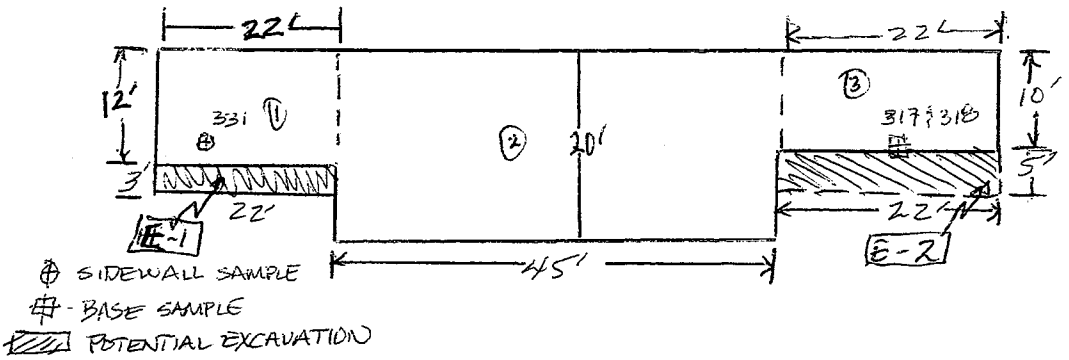
⑤ $= 12\,ft * 6\,ft * 50\,ft = 1800cf$

⑥ $= 0.5[9\,ft * 3\,ft * 50\,ft = 1350cf]$

TOTAL VOLUME EXCAVATED: 62,950 CF OR 2331 CY

CONFIRMATION SAMPLES AT CROSS SECTION A-A (STA 0 + 00) WERE BELOW CLEANUP STANDARDS.

B-B (STA 0+50)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.* **)**

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 22\,ft * 12\,ft * 50\,ft = 13200cf$

② $= 45\,ft * 20\,ft * 50\,ft = 45000cf$

③ $= 22\,ft * 10\,ft * 50\,ft = 11000cf$

TOTAL VOLUME EXCAVATED: 69,200 CF OR 2563 CY

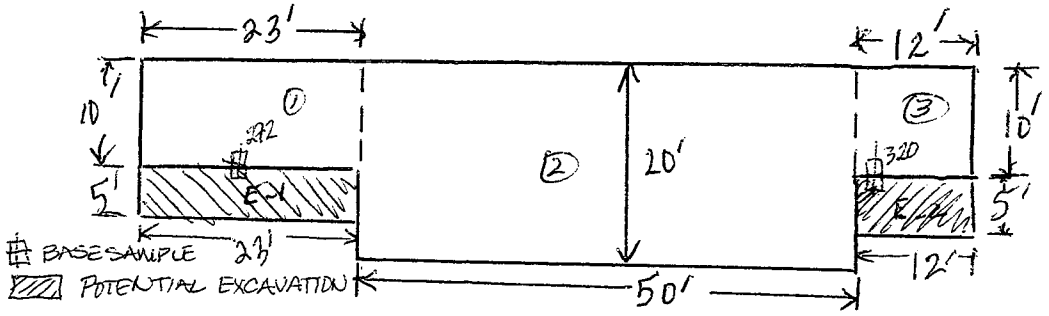
SOIL CONTAMINATION IS STILL PRESENT BASED ON CONFIRMATION SAMPLES TAKEN AT SS0152-SO-331, SS0141-SO-317, & SS0141-SO-318.

E-1 $= 22\,ft * 3\,ft * 50\,ft = 3300cf$

E-2 $= 22\,ft * 5\,ft * 50\,ft = 5500cf$

POTENTIAL EXCAVATION AT CROSS SECTION B-B (STA 0 + 50): 8800 CF OR 326 CY

C-C (STA 1 + 00)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.* **)**

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

$① = 23\,ft * 10\,ft * 50\,ft = 11500cf$

$② = 50\,ft * 20\,ft * 50\,ft = 50000cf$

$③ = 12\,ft * 10\,ft * 50\,ft = 6000cf$

TOTAL VOLUME EXCAVATED: 67,500 CF OR 2500 CY

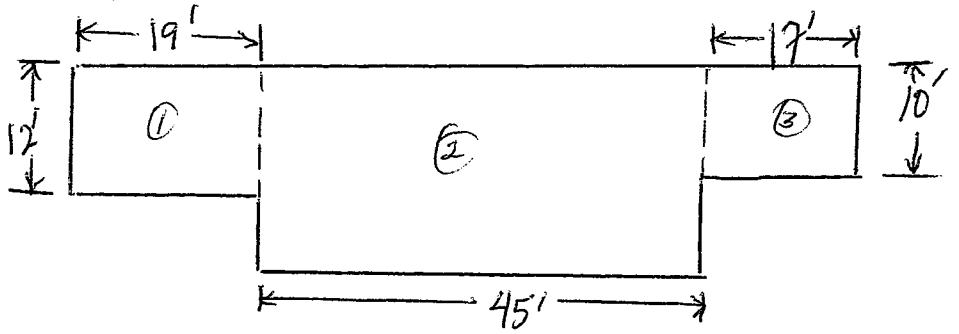
SOIL CONTAMINATION IS STILL PRESENT BASED ON CONFIRMATION SAMPLES TAKEN AT SS0105-SO-272 & SS0142-SO-319.

$E\text{-}1 = 23\,ft * 5\,ft * 50\,ft = 5750cf$

$E\text{-}2 = 12\,ft * 5\,ft * 50\,ft = 3000cf$

POTENTIAL EXCAVATION AT CROSS SECTION C-C (STA 1 + 00): 8750 CF OR 324 CY

D-D (STA 1 + 50)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.*)

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

(1) $= 19\,ft * 12\,ft * 50\,ft = 11400\,cf$

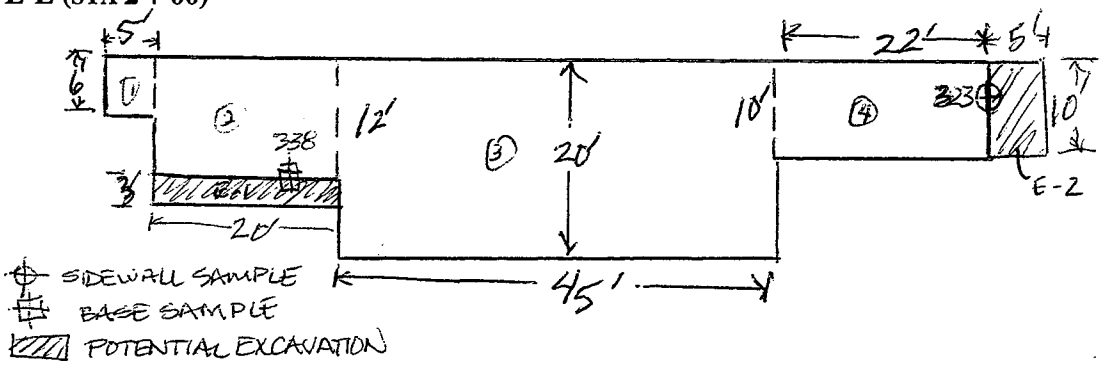
(2) $= 45\,ft * 20\,ft * 50\,ft = 45000\,cf$

(3) $= 17\,ft * 10\,ft * 50\,ft = 8500\,cf$

TOTAL VOLUME EXCAVATED: 64,900 CF OR 2404 CY

CONFIRMATION SAMPLES AT CROSS SECTION D-D (STA 1 + 50) WERE BELOW CLEANUP STANDARDS.

E-E (STA 2 + 00)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.***)**

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 5\,ft * 6\,ft * 50\,ft = 1500cf$

② $= \cancel{19}\,20\,ft * 12\,ft * 50\,ft = \cancel{11400cf}\ 12{,}000\,cf$

③ $= 45\,ft * 20\,ft * 50\,ft = 45000cf$

④ $= 22\,ft * 10\,ft * 50\,ft = 11000cf$

TOTAL VOLUME EXCAVATED: ~~68,900~~ 69,500 CF OR ~~2552~~ 2574 CY

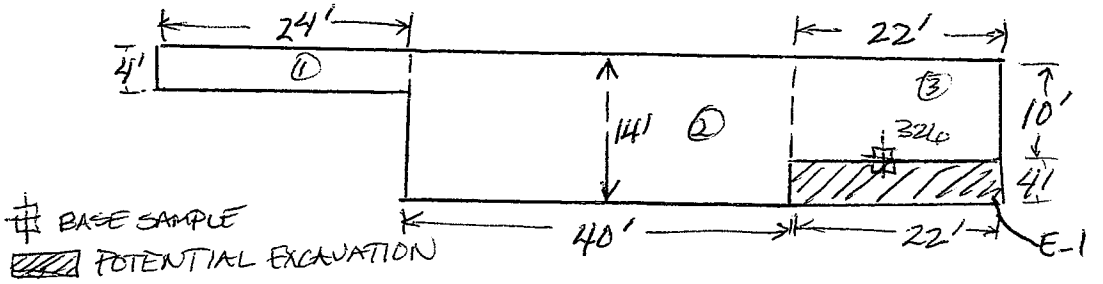
SOIL CONTAMINATION IS STILL PRESENT BASED ON CONFIRMATION SAMPLES TAKEN AT SS0158-SO-338 & SS0146-SO-323.

E-1 $= 20\,ft * 3\,ft * 50\,ft = 3000cf$

E-2 $= 5\,ft * 10\,ft * 50\,ft = 2500cf$

POTENTIAL EXCAVATION AT CROSS SECTION E-E (STA 2 + 00): 5500 CF OR 204 CY

F-F (STA 2 + 50)



(**SOURCE: SHAW.** *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.*)

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 24\,ft * 4\,ft * 23\,ft = 2208cf$

② $= 40\,ft * 14\,ft * 23\,ft = 12880cf$

③ $= 22\,ft * 10\,ft * 23\,ft = 5060cf$

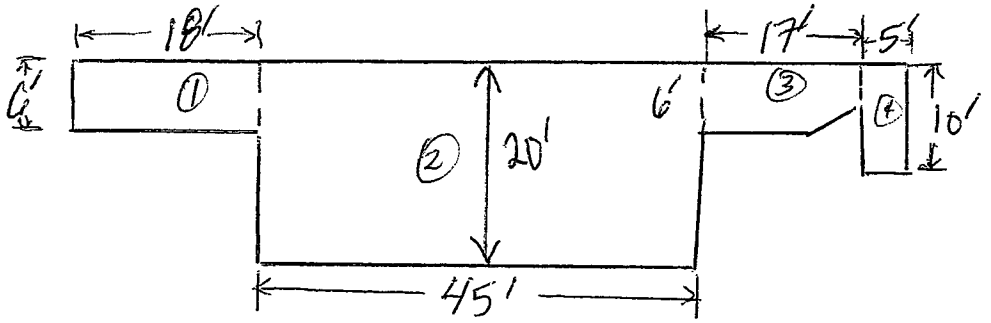
TOTAL VOLUME EXCAVATED: 20,148 CF OR 746 CY

SOIL CONTAMINATION IS STILL PRESENT BASED ON CONFIRMATION SAMPLE TAKEN AT SS0149-SO-326.

E-1 $= 22\,ft * 4\,ft * 23\,ft = 2024cf$

POTENTIAL EXCAVATION AT CROSS SECTION F-F (STA 2 + 50): 2024 CF OR 75 CY

G-G (STA 2 + 73)



(SOURCE: SHAW. *Summary of Additional Excavation Recommended Based on Confirmation Sample Results Stations 0-0 through 250-0: SWMU 8, DDJC-Tracy.* **)**

VOLUME REMOVED (ESTIMATES BASED ON SIMPLE GEOMETRIC SHAPES)

① $= 18\,ft * 6\,ft * 17\,ft = 1836\,cf$

② $= 45\,ft * 20\,ft * 17\,ft = 15300\,cf$

③ $= 17\,ft * 6\,ft * 17\,ft = 1734\,cf$

④ $= 5\,ft * 10\,ft * 17\,ft = 850\,cf$

TOTAL VOLUME EXCAVATED: 19,720 CF OR 730 CY

CONFIRMATION SAMPLES AT CROSS SECTION G-G (STA 2 + 73) WERE BELOW CLEANUP STANDARDS

Estimated Volume Removed from SWMU 8

AA-AA* (STA 0-20)					A-A (STA 0-0)					B-B (STA 0+50)				C-C (STA 1+00)				D-D (STA 1+50)				E-E (STA 2+00)				F-F (STA 2+50)				G-G (STA 2+73)			
	W (ft)	H (ft)	L (ft)	Vol (cf)		W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)	W (ft)	H (ft)	L (ft)	Vol (cf)
					0.5	10	5	50	2500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						5	15	50	3750	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
						70	15	50	52500	--	--	--	--	--	--	--	--	--	--	--	--	5	6	50	1500	--	--	--	--	18	6	17	1836
0.5	40	3.5	2	140		6	3.5	50	1050	22	12	50	13200	23	10	50	11500	19	12	50	11400	19	12	50	11400	24	4	23	2208	45	20	17	15300
0.5	40	3.5	2	140		12	6	50	1800	45	20	50	45000	50	20	50	50000	45	20	50	45000	45	20	50	45000	40	14	23	12880	17	6	17	1734
	80	9	18	12960	0.5	9	3	50	1350	22	10	50	11000	12	10	50	6000	17	10	50	8500	22	10	50	11000	22	10	23	5060	5	10	17	850
				13240					**62950**				**69200**				**67500**				**64900**				**68900**				**20148**				**19720**

Total Volume (cf): 386558

Total Volume Excavated @ SWMU 8 (cy): 14317
Expansion Factor: 1.2
Adj Total Volume Excavated @ SWMU 8 (cy): 17180

Volume Remaining at SWMU 8 with concentrations above cleanup levels

X-SEC	W (ft)	H (ft)	L (ft)	Vol (cf)
B-B	22	3	50	3300
	22	5	50	5500
C-C	23	5	50	5750
	12	5	50	3000
E-E	20	3	50	3000
	5	10	50	2500
F-F	22	4	23	2024
	Volume In-Place:			**25074**

Volume (cy): 929
Expansion Factor of Soil: 1.2
Adj Volume (cy): 1115

Assumptions:
1. No cross-section was given for the south wall, cross-section AA-AA is based on confirmation samples taken on the South end of SWMU 8. (Source: Shaw Environmental, Inc.)
2. Assumed cross-sections are based on excavation footprint provided by Shaw Environmental, Inc.
3. Assume expansion factor for soil is 1.2; actual volume removed from SWMU 8 is 17,180 cy - calculated volume removed from SWMU 8 is 17,180 cy
4. Estimated Potential Volume remaining at SWMU 8 is based on confirmation samples that exceed cleanup levels.
5. Total length for cross-sections A-A through G-G is 290 ft.
6. See Figure for cross-sections referenced.

APPENDIX D

SWMU 8 Modeling Results
(Source: Shaw Environmental and Infrastructure, Inc., 2003)

SUMMARY OF MODELING FOR POTENTIAL FOR IMPACT TO GROUNDWATER FROM RESIDUAL DIELDRIN IN SOIL, SWMU 8, DEFENSE DISTRIBUTION DEPOT SAN JOAQUIN CALIFORNIA, TRACY SITE

The SWMU 8 remedial action removed fill and soil impacted with Dieldrin, DDT, and other herbicide COCs from within, around and beneath the former burn pit. The remedial action attempted to achieve the primary vadose zone soil cleanup standards for the COCs including Dieldrin and DDT. This document provides methodology for revision of the cleanup standards for Dieldrin and DDT.

Primary Cleanup Standard

The primary soil cleanup standards for Dieldrin and DDT at SWMU 8 were 2 µg/kg and 7 µg/kg, respectively. These standards were determined by modeling in the mid 1990s in the RI/FS process (Montgomery Watson, 1996) and was memorialized within the ROD (Radian International, 1998). The standard was determined from modeling of the potential for groundwater impact to occur at any of several threshold levels specified within the ROD (Radian International, 1998) modeling was performed using SESOIL and VLEACH, with input factors that were either chemical-specific (such as properties of Dieldrin) or location-specific (such as weather and soil parameters).

This document summarizes modeling that demonstrated the unlikelihood that Dieldrin or DDT would exceed any of the threshold levels in groundwater. The threshold levels protective of groundwater (Radian International, 1998) are:

- The Beneficial Use Limits (BUL)(0.002 µg/L Dieldrin and 0.1 µg/L DDT) and;
- The Background Threshold Values (BTV) (0.005 µg/L Dieldrin and 0.005 µg/L DDT).

The modeling found that the protective thresholds will not be exceeded.

Rationale for Modeling

A single final, vadose zone confirmation sample contained Dieldrin (4 µg/kg) in excess of the primary cleanup standard (2 µg/kg). Because the majority of Dieldrin mass was removed and because low concentrations of Dieldrin are suspected of being widespread it is desirable to avoid further excavation, which would be highly inefficient with respect to unit cost for removal of further Dieldrin mass. Because the majority of Dieldrin mass was removed, it is appropriate to model the likelihood for the small remaining mass to adversely affect groundwater, and to recommend for or against further excavation of residually-impacted soil based on whether adverse impact of groundwater would occur under existing post-remedial conditions.

Eight of fifty-six final vadose zone confirmation samples contained DDT in excess of the primary cleanup standard (7 µg/kg). A maximum concentration of 47 µg/kg remaining in soil was found at Station 200 (7 feet below ground surface). After evaluating the DI WET analyses of the confirmation samples, it was determined that the BUL for DDT in groundwater was not likely exceeded at concentrations of 102 µg/kg. Because any remaining DDT in soil was at concentrations lower than 102 µg/kg and should be attenuated in the vadose zone prior to reaching groundwater, it is appropriate to model the likelihood for the remaining mass to adversely affect groundwater.

Revision of Cleanup Standard

The original modeling effort was performed to develop the primary cleanup standards for Dieldrin and DDT (Montgomery Watson, 1996; Radian International, 1998). It was repeated using more recently available facility-specific and chemical-specific input factors. It was found that the leaching of Dieldrin and DDT to the water table would not result in concentrations exceeding any of the thresholds specified in the ROD.

Some of the input factors that were used in the recent modeling were different from those used in the previous modeling. These included the source term and the octanol-water partitioning coefficient (K_{ow}) for Dieldrin. The concentration of the source term was set at 4 µg/kg for Dieldrin and 47 µg/kg for DDT, the highest concentration found in any of the final, vadose zone confirmation samples. K_{ow} was changed to use a more current U.S. EPA-provided value, rather than the original value that was determined over 15 years ago.

Input Parameters

Numerous variables were necessary as input to the model. A discussion of some of the variables is made below:

Source Term. The source term was assumed to be a 10-foot thick zone of soil (extending from 2.25 to 12.25 feet below grade, i.e., from 5 feet above the sample to 5 feet below the sample). The herbicide concentration at 7.25 feet, the vertical center of the modeled source mass, was set equal to the highest Dieldrin and DDT concentrations of any of the final confirmation samples: 4 µg/kg (Dieldrin) and 47 µg/kg (DDT). The concentration was set to decrease exponentially to the Method Detection Limit (MDL) (0.004 µg/kg) upward and downward 5 feet. Such a decrease is scientifically derived from the typical distribution of anthropogenic analyte concentrations in soil media.

Analyte Properties. Properties of the analytes (such as K_{oc} - organic carbon partition coefficient, S - solubility; Kh – Henry's Law constant, and Di,a - free air diffusion coefficient) were taken from U.S. EPA source documents (U.S. EPA, 1996). The values of several of these parameters differ from those used in the RI/FS (Montgomery Watson, 1996), which relied for many parameters on a U.S. EPA document that had been published in 1986, 10 years prior (Montgomery Watson, 1996).

Soil Properties. Properties of the soil (such as density, porosity, and total organic carbon content) were taken, if available, from the input data used for similar modeling in the RI/FS (Montgomery Watson, 1996). Where such variables were unavailable from the RI/FS they were taken from accepted sources such as U.S. EPA documents.

Climatologic Parameters. Climatologic parameters were generated by the database incorporated within the SESOIL software. The database used the Sacramento weather station because it was the closest weather station to Tracy in the database. The mean seasonal precipitation and infiltration from this station were used.

For VLEACH, an annual precipitation of 20 inches was assumed. This is conservative, as the RI/FS used an annual precipitation of 13.77 inches in modeling vadose zone migration at the site (Montgomery Watson, 1996).

Infiltration: For VLEACH, an infiltration rate of 15% was assumed. The infiltration rate in SESOIL was calculated based on the annual precipitation, runoff, and evapotranspiration, etc. The infiltration rate was

calculated based on the annual precipitation, runoff, and evapotranspiration, etc. In comparison with the actual values, the SESOIL-calculated infiltration is overestimated, resulting in an overestimation of the potential for migration of herbicide residues.

Decay. No decay factors were used. This is a conservative assumption because it neglects the effects of any possible degradation of the analytes.

Result

Modeling of the residual contamination using conservative factors, consistent with the RI/FS (Montgomery Watson, 1996), indicates that very low concentrations of Dieldrin could potentially reach the water table after many years. Modeling indicated that the concentration of Dieldrin in the shallowest groundwater would be below the Beneficial Use Limit and the Background Threshold Value.

SESOIL and VLEACH simulations suggest that DDT will not reach groundwater in 100 years and 50 years, respectively. Based on the modeling, concentrations of DDT in groundwater will be below all the water quality goals.

Based on this modeling and the removal of near-source impacted soil, it is concluded that the residual Dieldrin concentrations found in and near the remedial excavation are not a threat to groundwater.

References

Hetrick, D. M. and Scott, S. J. 1994. The New SESOIL User's Guide. Wisconsin Department of Natural Resources.

Montgomery Watson, 1996. *Comprehensive Remedial Investigation/Feasibility Study, Defense Distribution Region West, Tracy, California.* November.

Radian International, 1998. *Final Sitewide Comprehensive Record of Decision (ROD), Defense Distribution Depot San Joaquin (DDJC), Tracy Site, Tracy, California.* April.

U.S. EPA, 1996. Soil Screening Guidance: User's Guide, Publication 9355.4-23, July. Waterloo Hydrogeologic, Inc., 2001. WHI Unsat Suite User's Manual, 1-D Unsaturated Zone Flow and Transport Modeling Using SESOIL, VLEACH, VS2DT, PESTAN and Visual HELP.

APPENDIX E

SWMU 8 Data Quality Assessment and Data Validation Report (Source: Shaw Environmental and Infracstructure, Inc., Remedial Action Report, in preparation)

5.4 DATA QUALITY ASSESSMENT

The data quality summary for SWMU 8 Remedial Activity describes the findings of the data review and validation and is provided to document the quality of the data used in the *Final Remedial Action Documents* (IT, 2001). The overall quality control and quality assurance protocols are presented in *Comprehensive Field Work Plan, Quality Assurance Plan, Volume 2 of 2, Version 3.0 (URS, 2001a)* (QAPP).

All soil samples and waste profile samples were submitted to Applied Physics & Chemistry Laboratory (APCL) located in Chino, California for analyses. Samples were maintained in coolers at 4 degrees Celsius (°C) ± 2°C during collection, shipment and storage, and were shipped by Golden State Overnight following Chain of Custody protocols

A total of 111 soil samples were collected for the entire sampling event. These samples included 84 primary samples, 10 field duplicates, eight quality assurance (QA) splits and nine waste profile samples. Based on the preliminary analytical results, concentrations of pesticides and/or TPH in some locations exceeded their respective cleanup goals. Consequently, over excavation at those locations was performed and the contaminated soil was removed. The following data quality summary does not provide a discussion for samples from the contaminated soil that was removed during overexcavation. The discussion presents on the data quality findings associated with the final confirmation samples.

Ninety percent of the confirmation soil sample results were manually reviewed by Synectics Environmental Chemistry Consultants, Inc. (Synectics), located in Sacramento, California with the exception of submissions 02-05873, 02-05623, and 02-05723. Thirteen confirmation samples contained in these three submissions were reviewed by the project chemist. The manual review was conducted in accordance with the guidelines and control criteria specified in the following documents:

- U.S. Environmental Protection Agency. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review.* Revised October 1999 (USEPA, 1999b)*;*
- U.S. Environmental Protection Agency. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* February 1994 (USEPA, 1994);
- *Comprehensive Field Work Plan, Quality Assurance Plan, Volume 2 of 2, Version 3.0* (URS, 2001a); and
- *Field Work Variance 70559-009R1.*

The following QC elements were included in the manual Level III data review:

- Sample holding times;
- Surrogate recoveries;
- Laboratory Control Sample/Laboratory Control Sample Duplicate recoveries;
- Matrix Spike/Matrix Spike Duplicate recoveries;
- Relative Percent Differences;
- Initial Calibrations;
- Continuing calibrations; and
- Laboratory Method Blanks.

In addition to the QC elements checked above, Synectics manually performed a Level IV data validation for approximately 10 percent of the confirmation soil sample data used for project decisions. The manual review includes an inspection of all associated raw data and evaluates both the quantitative and qualitative results for compliance with project and method requirements.

Table 5-1 presents a summary of detected compounds and Appendix I presents the data review and validation reports.

Table 5-2 presents a listing of the confirmation samples and waste profile samples including sample collection date, preparation date, leachate data, analysis date, and data quality level. Data were of good technical quality and usable for the intended purpose. Table 5-3 presents the percentage of Level IV validated samples by method.

Based on the Level III data review and Level IV data validation, all confirmation sample results were valid and usable for project decisions. Overall, the analytical data are of good technical quality. There were no significant, systematic problems identified with the performance of any of the analytical methods. The laboratory data quality for the sampling event met the quality assurance objectives and project goals specified in the SAP.

5.4.1 Discussion of Qualified Data

The following sections present a brief discussion of the findings of the data review and validation for confirmation soil sample data by method. Accuracy is demonstrated by recovery of target analytes from fortified blanks and sample matrices, laboratory control and matrix spike samples, respectively. For organic methods, accuracy is also demonstrated through recovery of surrogates from each field and QC sample. Precision is expressed as relative percent difference (RPD) between the results of replicate sample analyses: sample duplicates, laboratory control sample duplicates and matrix spike sample duplicates. When analyte recoveries or RPDs exceed acceptance criteria, results are flagged as appropriate. The following discussions focus on QC analytical results that were outside their respective control criteria. Table 5-4 presents definitions of data qualification flags and reason codes applied to the sample results, Table 5-5 presents the qualified site data, and Table 5-6 summarizes total number of qualified data by reason code.

5.4.1.1 EPA Method 8151A, Herbicides by Gas Chromatography

For EPA Method 8151A, data quality issues identified were non-compliant laboratory control sample/laboratory control sample duplicate recoveries (LCS/LCSD) and matrix spike/matrix spike duplicate recoveries (MS/MSD). The following section discusses these issues.

Laboratory Control Sample Recovery (Reason Code L): Ten dinoseb quantitation limits in confirmation soil samples were qualified as estimated (UJ) because recoveries in the associated LCS/LCSD were reported between 31% and 33%, which were below the 40% lower control limit.

Matrix Spike and Matrix Spike Duplicate Recovery (Reason Code M): Low MS and MSD recoveries were reported for dinoseb, 2,4,5-T, MCPA and 2-(2-methyl-1,4-chlororphenoxy)propionic acid (MCPP), ranging from 12% to 39%. These reported recoveries were below the 40 % lower control limit. As a result, of 15 dinoseb, 11 MCPA, two 2,4,5-T, and five MCPP quantitation limits were qualified as estimated, UJ. Additionally, high MS and MSD recoveries were noted for 2,4-DB. The reported recoveries were between 234% and 171%, exceeding the 150% upper control limit. There is a

potential that the detected concentrations of 2,4-DB in two associated soil confirmation samples may be reported with a high bias (J+).

5.4.1.2 EPA Method 8141A, Organophosphorus Pesticides by Gas Chromatography

Organophosphorus pesticide results were qualified because of initial and continuing calibration outliers as discussed below.

Initial Calibration Verification (Reason Code G): The PQLs for naled in five soil confirmation samples were qualified as estimated (UJ) because the coefficient of determination (r^2) in an initial calibration was noted at 0.9847, marginally below the acceptable control limit of 0.990.

Continuing Calibration Verification (Reason Code C): Percent differences between the initial calibration response factor and the continuing calibration response factor for naled and stirophos in continuing calibrations were observed between negative 17 % and negative 38%, respectively, which were below the lower control limit of negative 15%. Quantitation limits for naled in four associated soil confirmation samples and stirophos in one associated soil confirmation sample were qualified as estimated (UJ).

5.4.1.3 EPA Method 8081A, Organochlorine Pesticides by Gas Chromatography

Data quality issues noted for EPA Method 8081A consisted of continuing calibration and MS/MSD recovery outliers as discussed below.

Continuing Calibration Verification (Reason Code C): Percent differences between the initial calibration response factor and the continuing calibration response factor for toxaphene in two continuing calibrations were noted at negative 24 % and negative 27 %, both were below the lower control limit of negative 15 %. The analyte quantitation limits in 18 associated soil confirmation samples were qualified as estimated (UJ).

Matrix Spike and Matrix Spike Duplicate Recovery (Reason Code M): Acceptable control criteria for MS and MSD recoveries are between 50% and 150%. Recoveries of 4,4'-DDT, endosulfan I and endosulfan II in the MS and MSD analyses ranged from 18% to 49%, below the lower control limit. One positive 4,4'-DDT and one positive endosulfan I results were qualified as estimated (J-) with a low bias. One endosulfan I, one 4,4'-DDT and nine endosulfan II quantitation limits were qualified as estimated (UJ). In a separate MS/MSD analysis, dieldrin was recovered at 154%, exceeding the upper control limit. Detected dieldrin concentrations in two associated soil confirmation samples were qualified as estimated (J+) with a high bias.

5.4.1.4 EPA Methods 8270C, Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

Results for SVOCs were qualified as a result of non-compliant continuing calibrations, internal standard, MS/MSD and surrogate recoveries. The following section discusses these issues.

Continuing Calibration Verification (Reason Code C): The percent differences between the initial calibration response factor and the continuing calibration response factor for 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol and benzoic acid in continuing calibrations were observed between negative 20.1 percent and negative 30 percent below the lower control limit of negative 20 percent. A

total of 10 quantitation limits in the associated soil confirmation samples were qualified as estimated (UJ).

Internal Standard Recovery (Reason Code I): An internal standard perylene-d_{12} in three confirmation soil samples was recovered between 19% and 33%, below the 50% lower control limit. Quantitation limits of all associated analytes in the three samples were qualified as estimated (UJ).

Matrix Spike and Matrix Spike Duplicate Recovery (Reason Code M): One hundred eighty eight quantitation limits were qualified as estimated (UJ) because of low MS and MSD recoveries. The reported recoveries ranged from 22% to 49% and fell below the 50% lower control limit. The majority of the analytes were in the base and neutral fraction. As a result of the low recoveries, the affected analyte quantitation limits in all associated soil confirmation samples were qualified.

Surrogate Recovery (Reason Code S): Surrogates 2-fluorobiphenyl and terphenyl-d_{14} in one soil confirmation sample were recovered at 40% and 48%, below the 50% lower control limit. Detected results and quantitation limits of all base and neutral compounds in the affected sample were qualified as estimated (J-/UJ).

5.4.1.5 EPA Method 8015B, TPH

Laboratory Method Blank (Reason Code B1): Gasoline was detected in some laboratory method blanks. Gasoline concentrations in 22 soil confirmation samples were less than five times the blank level and were qualified as non-detected (U) at the PQL.

Surrogate Recovery (Reason Code S): High surrogate recoveries were obtained in sample SS0100-S0-266. As a result, the results for diesel and motor oil were qualified as estimated with a positive bias (J+). Because of the high concentrations of petroleum products in this sample, high surrogate recoveries were obtained due to interferences.

5.4.2 Field Quality Control

Field quality control (QC) samples collected and analyzed for the confirmation soil sampling activities consisted of field duplicates and QA split samples. During the sampling event, all samples were collected using disposable sampling equipment, and therefore no equipment blanks were necessary. Additionally, no aqueous volatile samples were collected for the sampling event, and thus trip blanks were not required. The following sections discuss the results of the analysis of the field QC samples.

5.4.2.1 Field Duplicates

As specified in Section 4.3 of the QAPP, field duplicate samples are collected at a minimum rate of 10 percent of the total number of primary samples. For the sampling event, a total of 10 field duplicates were generated representing approximately 11 % of the total primary samples. The 10 duplicates were collected from locations SS0091, SS0107, SS0122, SS0114, SS0141, SS0151, SS0154, SS0162, SS0165 and SS0173. Because pesticides and/or TPH concentrations in locations SS0091, SS0114, SS0141, SS0162 and SS0165 exceeded their respective cleanup goals, over-excavation was performed and the contaminated soil was removed from those locations. The following section focuses on field duplicate results from locations SS0107, SS0122, SS0151, SS0154, and SS0173 where the concentrations of COCs are at or below their respective cleanup goals.

Field duplicate samples are evaluated by calculating the RPD between the sample and its duplicate. The RPD is calculated using the following equation.

$$RPD = |(S-D)/[(S+D)/2]| * 100$$

where:

S = sample result, and
D = duplicate result.

Acceptable precision control criteria are established at less than 50 percent for soil samples and 35 percent for aqueous samples. The RPD is calculated between pairs of field duplicate samples when both results are reported above the PQL. In cases where one of the results is below the PQL, pairs of field duplicate results are considered in agreement if the absolute value of the difference between the result and the PQL is less than the PQL.

Table 5-7 presents field duplicate results. All of the field duplicate results were in agreement with the following exceptions:

Aqueous Samples: Deionized Waste Extraction Test (DIWET):

- SS0107: total chlordane, 4'4-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, heptachlor.

Soil Confirmation Samples:

- SS0107: total chlordane, alpha-chlordane, gamma-chlordane, 4,4'-DDD, 4,4'-DDE, and heptachlor;
- SS0122: 4,4'-DDD, and 4,4'-DDE;
- SS0151: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and dieldrin;
- SS0154: 4,4'-DDE, and 4,4'-DDT; and
- SS0173: 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

The field duplicate exceedances could be attributed to non-homogenous distribution of contaminants. Based on the field duplicate evaluation, 22 out of 661 field duplicate result pairs did not meet the precision requirements. Approximately 97 percent of the field duplicate results met the acceptance requirement for precision. The positive results in each sample in the field duplicate pair are qualified as estimated (J) with a reason code D3.

5.4.2.2 QA Split Sample

QA split samples were collected in the same manner as primary samples and requested for the same analyses as the primary samples. For the sampling event, eight QA split samples were collected representing approximately nine percent of the total primary samples. The 10 percent QA split collection frequency was slightly missed. The QA samples were collected from locations SS0091, SS0114, SS0122, SS0128, SS0133, SS0149, SS0165 and SS0167. All QA split samples were shipped by Federal Express to Agriculture and Priority Pollutants Laboratory, Inc., (APPL) located in Fresno, California.

5.4.3 Sensitivity

All positive target analyte results were reported to the Method Detection Limit (MDL) and non detected results were reported to the PQL. Positive results between the MDL and the PQL are qualified as estimated (J) because of the increased quantitative uncertainty present as the limit of detection is approached. As presented in the FWV 70559-009R1, exceptions were made for bis(2-ethylhexyl) phthalate, 2,4-dinitrotoluene, diethyl phthalate, naphthalene, chlordane, lindane and motor oil. Because PQLs for these COCs were at or above the cleanup goals, correction of moisture content in samples would raise the PQLs to levels above the cleanup goals. For that reason, MDLs for the listed COCs were reported in order to meet the regulatory requirements. Table 5-8 and the following text present analyte PQLs that exceeded cleanup goals:

- The PQLs for dieldrin by EPA Method 8081A in some samples exceeded the cleanup goal. No dilutions were performed;
- The PQLs for 2,4-D and MCPA by EPA Method 8151A in one sample exceeded their respective cleanup goals due to a dilution. The sample was analyzed at a dilution of 10 fold due to a matrix effect; and
- The PQL for linuron by EPA Method 8321 in one sample exceeded the cleanup goal due to a dilution. The sample was analyzed at a dilution of five fold due to matrix interference.

In the above cases, MDLs for all analytes were below the respective cleanup goals. With the respect to the elevated PQLs due to a matrix effect, the dilutions performed were necessary in order to avoid gross contamination of the analytical instrument.

To verify that the sensitivity requirement was met, a sensitivity verification standard was analyzed at ½ PQL at the same frequency as the continuing calibrations. The sensitivity results were reviewed during the Level III data review. All sensitivity results met the established 70% to 130% requirement. With the exception of above, sensitivity requirement was met for all other analytes.

5.4.4 Completeness

The following sections present a discussion of technical completeness for the SWMU8 confirmation soil sample results. Completeness calculations included only project samples that used for project decisions and excluded waste profile samples. The completeness results are presented in Table 5-9.

5.4.4.1 Technical Completeness

As specified in Section 4.2.5 of the Quality Assurance Project Plan (QAPP), only technical completeness is required in terms of completeness calculations. The technical completeness is a quantitative expression of the data usability based on the number of rejected data. The technical completeness calculation considers all data that is not rejected to be usable and technical completeness is calculated as follows:

$$\% \text{ Technical Completeness} = \frac{\text{Number of useable results}}{\text{Total number of results}} \text{ X } 100\ \%$$

As discussed in Section 4.2.5 of the QAPP, the completeness goal for soil samples is established at 90%. A completeness evaluation indicated 100% technical completeness for all test methods for

SWMU8 confirmation soil samples. Sufficient acceptable data were obtained to meet the project objectives.

See folder on CD entitled

Appendix E SWMU 8

APPENDIX F

Appendix to the Installation Master Plan

Land Use Controls at DDJC-Tracy
(Appendix to the Installation Master Plan)

This appendix describes the land use controls that have been implemented at several locations at DDJC-Tracy to protect human health and the environment. Land use controls are part of the selected remedy at several sites with soil contamination. These protective controls are required at these sites because residual soil contamination has been left in place that may pose a threat to human health or the environment. Three issues that jeopardize human health or the environment are as follows:

- Contaminants are present at concentrations that permit existing industrial land uses, but that exceed the concentrations that would allow for unrestricted reuse (including residential development).
- Residual contamination at selected sites potentially threatens the quality of the underlying groundwater. Land use controls for these sites are required to maintain the existing ground cover to minimize water infiltration.
- Land use controls are required for contaminated soil left in place at SWMU 2/3, SWMU 6, and DSERTS 67 where contaminant concentrations in subsurface soil could impact construction workers.

The DDJC-Tracy soil sites requiring land use controls are identified on Figure 1. Groundwater use controls are identified in the fact sheet for OU 1 Groundwater (on-Depot portion of plumes).

Land use controls are administrative measures selected by the Defense Logistics Agency (DLA) to limit exposure to residual hazardous substances. These measures restrict future land use and ensure the effectiveness of the remedy at all sites. The DLA is responsible for implementing, monitoring, maintaining, and enforcing the identified controls. If the DLA determines that it cannot meet specific land use control requirements, it is understood that the remedy may be reconsidered and that additional measures may be required to ensure the protection of human health and the environment.

Purpose of this Appendix

This appendix to the Installation Master Plan (IMP) describes:

- Specific controls required at each site and explains that controls are required because of the presence of pollutants or contaminants;
- The current land users and uses of the site; and
- The geographic control boundaries and the objectives of the controls.

All sites with land use controls are restricted from use for residential development, play areas, or day care facilities. Please contact the DDJC-Tracy Environmental Project Manager if more information is needed.

Agency Notification Requirements

DDJC-Tracy is required to notify the regulatory agencies (U.S. EPA, DTSC, and the RWQCB-Central Valley Region) regarding any proposals for a land use change that is inconsistent with the use controls and assumptions; any anticipated action that may disrupt the effectiveness of the land use controls; any action that might alter or negate the need for the land use controls; and any anticipated transfer of the property subject to the land use controls. Notification requirements include:

- Notify the regulatory agencies 45 days in advance of any land use change.
- The DLA will notify U.S. EPA and California as soon as practicable, but no later than 15 days after discovery of any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls. The DLA will notify U.S. EPA and California regarding how the DLA has addressed or will address the breach within 15 days of sending U.S. EPA and California notification of the breach.

Agency notifications must include an IMP Project Approval Form (Attachment 1). Completion of this form is required before the start of any building project or demolition work at DDJC-Tracy. The approval of the IMP Project Approval Form requires a comparison of the building site with the constraints outlined in this appendix. Any components of the proposed project that are inconsistent with the constraints at the site will result in the disapproval of the project approval form unless the requester makes appropriate modifications to the building plans. The DDJC-Tracy Facility Engineer is responsible for the final approval of building projects through this review process.

The DDJC-FA Environmental Project Manager shall notify the signatory parties to the record of decision (ROD) at least 90 days before the commencement of any demolition or construction activities that could expose contaminated soil. The notification shall include:

- A description of the proposed work with a figure identifying the affected area;
- An evaluation of potential impacts to the environment;
- An assessment of whether the proposed activity changes the appropriateness of the ROD remedy; and
- A discussion of the engineering controls that will be used to prevent impacts.

After completion of any demolition or construction activities but before the demobilization of the construction contactor, the agencies will be notified by the DDJC-FA Environmental Project Manager and given an opportunity to inspect the completed site work.

The DDJC-FA Environmental Project Manager will be responsible for coordinating with the Supervisor of Facilities to ensure that emergency response personnel are aware of the environmental issues at institutional control sites and are trained accordingly before they may be required to respond to emergencies (e.g., a water main break).

In emergency situations, advanced notification of repairs to the signatory parties to the ROD is not required. After completion of emergency repairs, the DDJC-FA Environmental Project Manager will notify the agencies of the emergency repairs, describe the response actions taken, and provide the agencies with an opportunity to inspect the site.

Land Use Control Maintenance Requirements

DDJC-Tracy is required to maintain existing administrative controls while land use controls are in place. Annual monitoring of sites with land use controls will be performed, and DDJC will take prompt action to restore, repair, or correct any deficiencies or failures identified with the land use controls. A different monitoring schedule may be agreed upon according to the schedule provisions of the Federal Facilities Agreement (FFA) if all parties agree and if the change reasonably reflects the risk presented by the site.

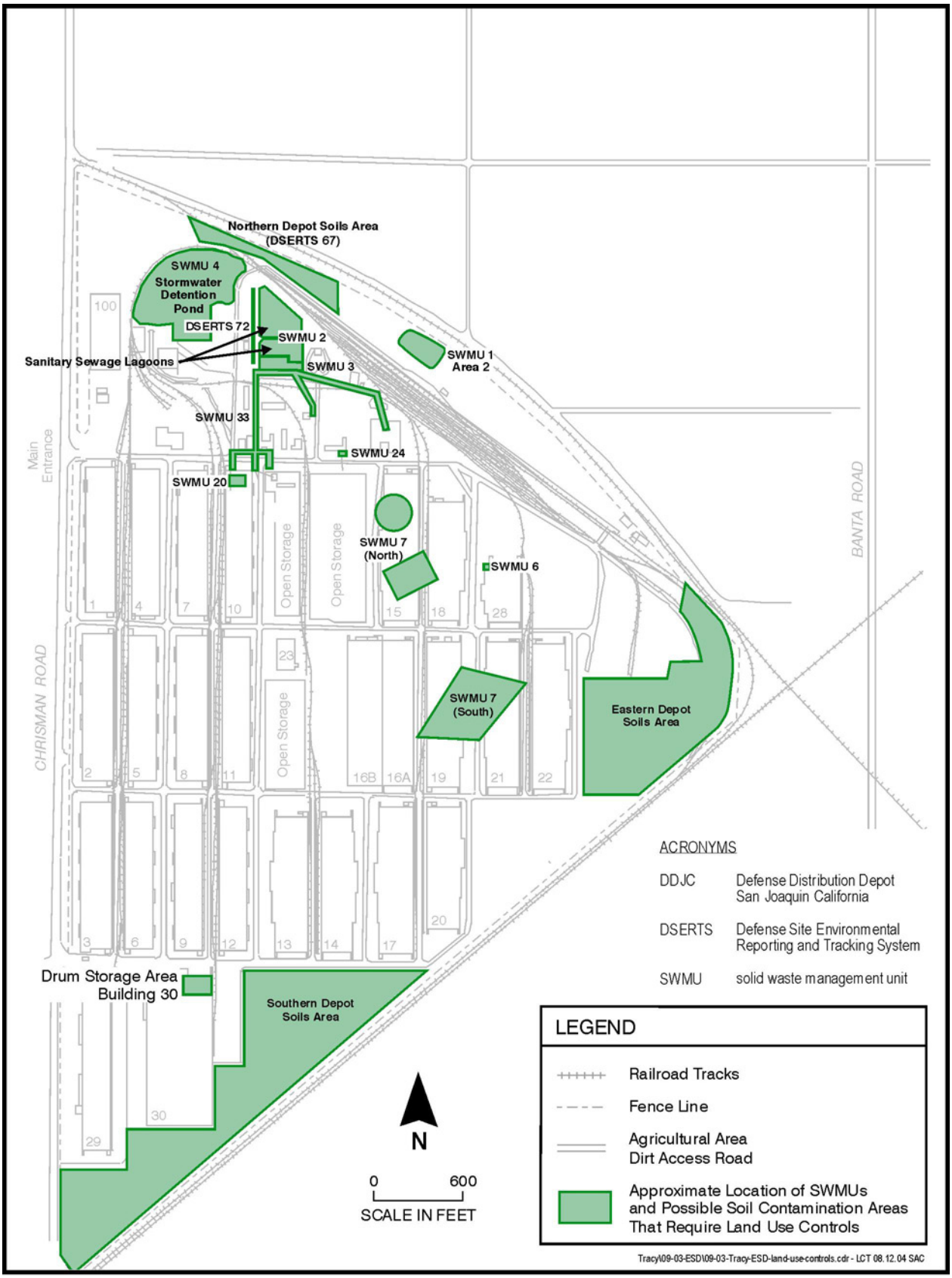


Figure 1. Soil Sites Requiring Land Use Controls, DDJC-Tracy

Any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls, will be addressed by DLA as soon as practicable, but in no case will the process be initiated later than 15 days after the DLA becomes aware of the breach.

Land Use Control Reporting Requirements

The DDJC-FA Environmental Project Manager is responsible for preparing an annual inspection report on the status of institutional controls. DDJC-Tracy submits an annual monitoring report covering all sites with land use controls to the U.S. EPA and the State of California. The annual monitoring report reviews the status of land use controls and/or other remedial actions, including the operation, maintenance, and monitoring thereof, and how any land use control deficiencies or inconsistent uses have been addressed. The report is included as a section in the DDJC-Tracy Well Monitoring Program Annual Report and is filed in the Information Repository.

Changes in Land Use

Any changes in land use for property associated with the sites identified in this appendix requires site characterization (existing data from the remedial investigation/feasibility study [RI/FS] may be used) and, at a minimum, an environmental assessment of the property. Many decisions documented in the ROD were based on the current land use (industrial use scenario). In general, a change in land use needs to be evaluated to ensure that contamination left in place at these sites would not pose an unacceptable risk under the new exposure scenarios.

Land use changes for sites posing potential risk to future receptors require characterization and environmental assessment in accordance with Army Regulation (AR) 200-2, AR 200-1, and AR 415-15. These procedures require DDJC-Tracy to consult the Administrative Record and characterize the site before the specified property on the depot could be used for a nonindustrial purpose.

Nonclosure transfers of U.S. Department of Defense (DoD) property are guided by community input on land use, as provided by the local government land use planning agency. In the event that no community land use plan is available at the time of property transfer, DoD will consider a range of reasonably anticipated future land uses in the transfer process. These assumptions allow the DoD (in conjunction with regulatory agencies) to determine the need for institutional controls. Environmental process requirements and restrictions (including institutional controls) at installations subject to transfer are described in 42 U.S. Code (USC) Section 9620 *et seq*. (CERCLA 120) Paragraph (h). This statute establishes hazardous substance notification and deed content requirements. 40 Code of Federal Regulation (CFR) Section 373 *et seq*. establishes the regulatory notification and reporting requirements. These statutes require an environmental baseline survey (EBS) and a finding of suitability to transfer (FOST) prior to the transfer of properties subject to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300, Federal Register, Vol. 55, No. 46). In accordance with Title 22, California Code of Regulations (CCR), Section 67391.1, DTSC cannot consider property owned by the federal government to be suitable for transfer to nonfederal entities where hazardous wastes/constituents/substances remain at levels that are not suitable for unrestricted land use, unless appropriate land use covenants have been executed and recorded in the county.

The EBS is a thorough review and compilation of environmental records and other activities related to the environmental condition of property at the time of the EBS. It provides notification of storage, release, or disposal of hazardous substances, as required by CERCLA, and supports the preparation of the FOST. The preparation of the EBS includes regulatory review and coordination.

The DoD Component Disposal Agent will ensure that the FOST and other transfer documents, along with the specific land use control strategy or plan for the subject real property, reflect the use restrictions and enforcement mechanisms specified in the remedial decision document. The transfer document will also include a description of the assumed industrial use that was used to develop the remedy and to make the remedial decision in the ROD. The DoD Component Disposal Agent will also ensure that institutional controls and other layered implementation and enforcement mechanisms, appropriate to the jurisdiction where the property is located, are either in place prior to the transfer or will be put in place by the transferee as a condition of the transfer. Examples of layered implementation and enforcement mechanisms include real estate mechanisms, deed restrictions, easements, inspections or monitoring, zoning, and state land use control registry.

Prior to the preparation of a FOST, the regulatory agencies will be notified of the intent to initiate the FOST process. The preparation of the FOST will also include regulatory review and coordination along with public review and notification.

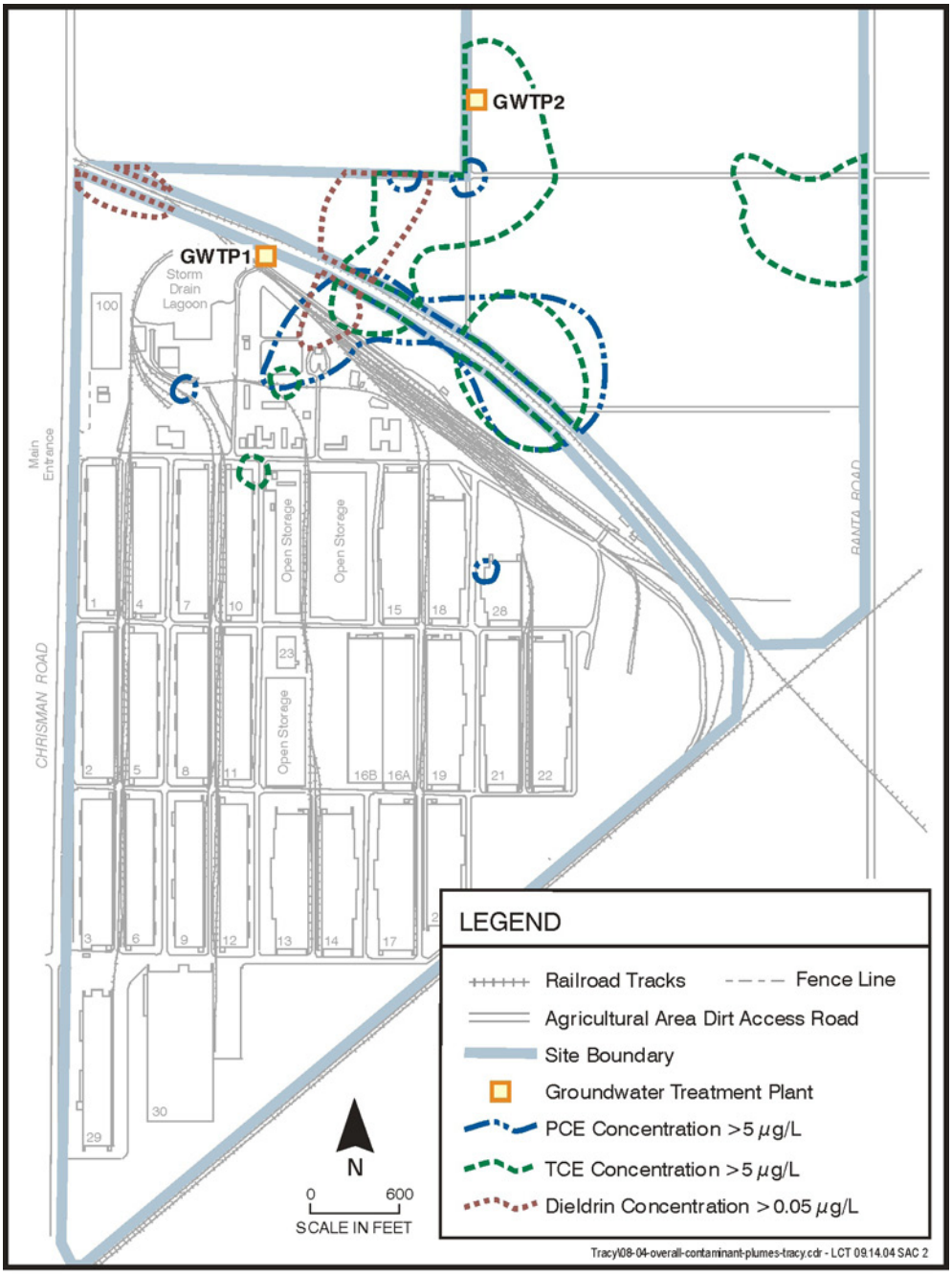
The DoD expects the transferee and subsequent owners to abide by the restrictions stated in the transfer documents, and will work with all appropriate federal, state, and local agencies and prospective property owners to ensure the ongoing effectiveness of institutional controls. If DoD becomes aware of action or inaction by any future owner that causes or threatens a release or results in the ineffective performance of the remedy, DoD reserves the right to perform any additional cleanup necessary to protect human health and the environment and to recover the costs of such cleanup from that owner under the terms of the transfer document or other authority.

Land Use Control Sites

The specific sites requiring land use controls are identified in the following 14 fact sheets. Each fact sheet includes a figure depicting the site, provides the purpose of the land use controls, describes the land use control requirements, summarizes actions taken to date, and lists the contaminants of concern that remain at the site.

This page intentionally left blank

SITE: OU 1 Groundwater (On-Depot Portion of Plumes)



Purpose of Controls:

- Prevent exposure to contaminated groundwater.

Land Use Control Requirements:

- Prevent domestic use of contaminated groundwater (untreated) within the contaminant plumes. (Contact DDJC-Tracy Environmental Project Manager for most recent map of plume extent.)

- Protect infrastructure associated with OU 1 groundwater monitoring, extraction, treatment, and disposal (any damage to infrastructure must be promptly repaired).
- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.

Actions to Date:

- Two groundwater treatment plants have been constructed to address the contaminant plume.

Contaminants of Concern:

- Trichloroethene, tetrachloroethene, 1,1-dichloroethene, Dieldrin.

Site Characteristics:

Past Site Activities

- Previous waste disposal practices have resulted in groundwater contamination at DDJC-Tracy.

RI/FS Activities

- The distribution of contaminants in groundwater is assessed each year in the Well Monitoring Program and reported in the FFA Annual Progress Report.

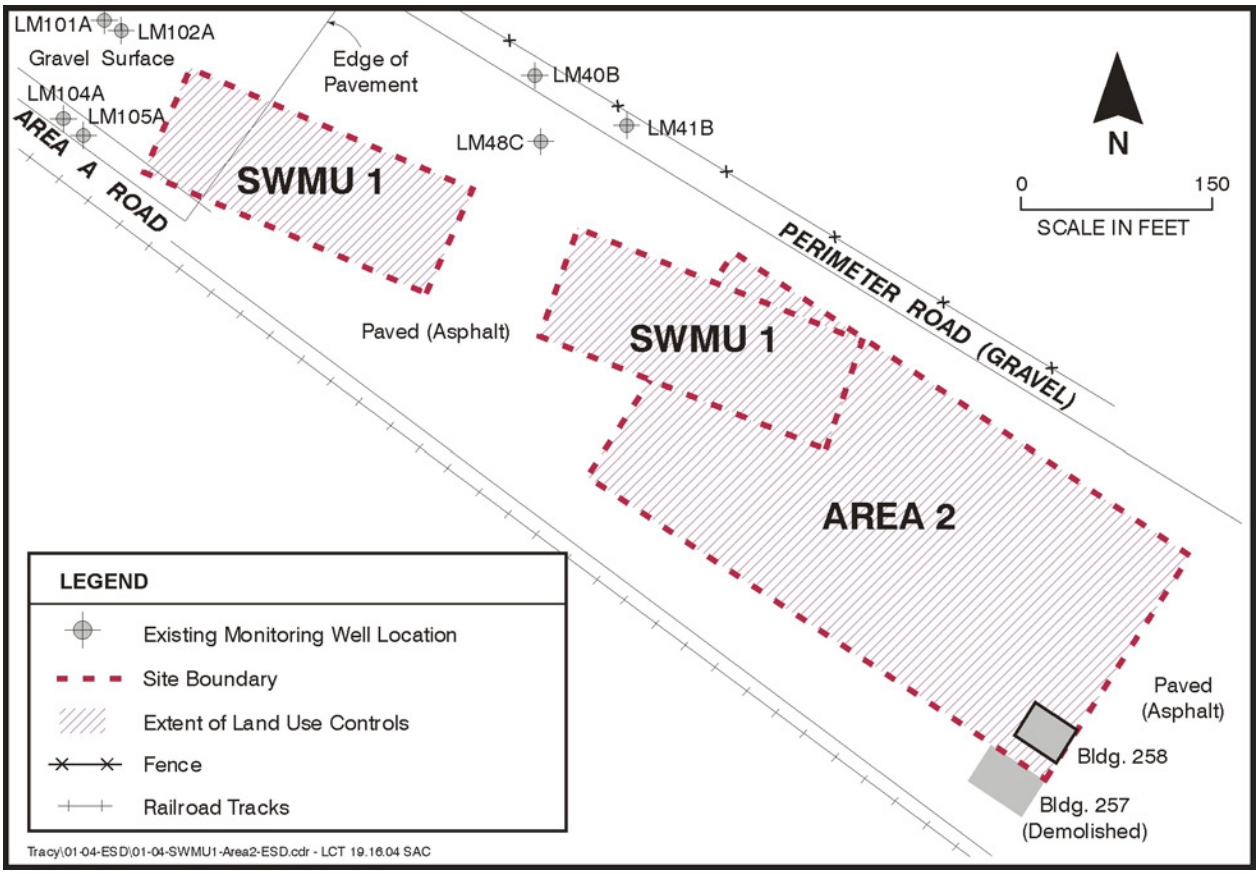
Conclusions:

- The selected remedy for OU 1 groundwater is extraction and treatment with the discharge of treated water to injection and overland flow facilities.
- Groundwater treatment is presently underway.

References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision*. Final. April. Section 9.5.

SITE: SWMU 1/Area 2



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Performed soil vapor extraction to address volatile organic compounds. Other contaminants left in place pose a health risk under the residential scenario according to the baseline risk assessment.

Contaminants of Concern:

- Beryllium and Polycyclic Aromatic Hydrocarbons.

Site Characteristics:

Past Site Activities

SWMU 1

- Site is the reported location of old sewage lagoons.
- Sanitary sewage effluent was discharged to the lagoons until 1942.
- Lagoons were abandoned and backfilled in 1944.

Area 2

- Site is the reported location of a former Drum Storage Area.
- Chemicals stored in drums possibly leaked or were discharged accidentally.
- Area 2 was used from 1957 until 1984.

RI/FS Activities

- Site investigation activities at SWMU 1/Area 2 included soil gas surveys, soil sampling, soil vapor extraction and monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 1/Area 2.

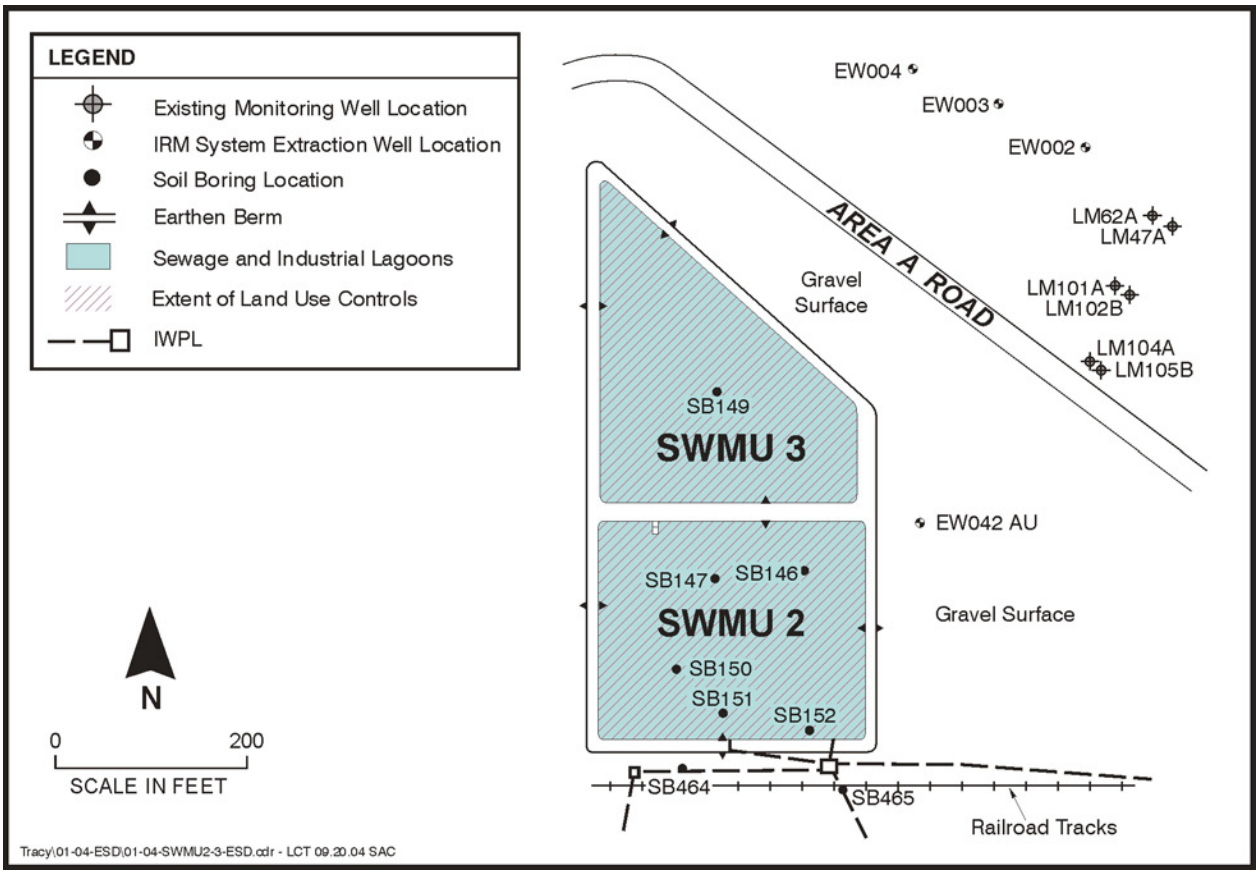
Conclusions:

- SWMU 1/Area 2 was a source of PCE to the OU 1 groundwater plume.
- Contaminant fate and transport modeling indicated that PCE in the soil is a potential ongoing threat to beneficial uses of groundwater and to background groundwater. Fate and transport modeling also indicated that TCE in the soil gas is a potential future threat to beneficial uses of groundwater and to background groundwater quality.
- Fate and transport modeling indicated that Aroclor 1260 may be a potential future threat to beneficial uses of groundwater; however, Aroclor 1260 was detected in only one soil sample.

References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

SITE: SWMUs 2 and 3



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Excavation addressed threat to groundwater and threat to ecological receptors. Residual soil contamination includes scattered areas with dieldrin concentrations above industrial preliminary remediation goals.

Contaminants of Concern:

- Aluminum, Beryllium, and Dieldrin.

Site Characteristics of SWMU 2:

Past Site Activities

- The site consists of two active sewage lagoons that have been in operation since 1942.
- The lagoons are unlined and bounded by earthen dams.
- The northern lagoon supports abundant vegetation and animal life; this lagoon is cleared annually, sometimes by burning. The southern lagoon contains grassy vegetation and reeds.
- The lagoons currently receive treated effluent discharged from the sewage treatment plant.
- The lagoons previously received effluent from the motor pool wash rack.
- Sometime between 1971 and 1979, industrial wastes from SWMU 3 (Industrial Waste Lagoons) overflowed into the southern lagoon of SWMU 2.

RI/FS Activities

- Site investigation activities at SWMU 2 included soil/sediment sampling, surface water sampling, evaluation of hexavalent chromium in soils, well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMUs 2 and 3.

Conclusions:

- PCE and TCE detected in groundwater are part of the OU 1 groundwater plume; SWMUs 2 and 3 are not a source of these compounds.
- The pesticides and herbicides Dieldrin, Monuron, Diuron, Aldrin, Chlordane, 2,4-D, DDD, DDE, DDT, delta-BHC, Endosulfan, sulfate, Endrin, Heptachlor Epoxide, Linuron, and Simazine have impacted groundwater at SWMUs 2 and 3; Dieldrin, Monuron, and Diuron are the most prevalent.

Site Characteristics of SWMU 3:

Past Site Activities

- The site consists of two lined industrial waste lagoons that are situated within a larger sanitary sewage lagoon (SWMU 2).
- The smaller lagoon was installed in 1972 and was unlined during the first year of use.
- The larger lagoon was installed between 1975 and 1979 and was lined at time of construction.
- Historically, the lagoons received wastewater from the Industrial Wastewater Pipeline that included effluent from the recoup operations from Building 26 (wastewater from repackaging of petroleum products) and effluent from Building 10 (wastewater from paint stripping, degreasing, and steam-cleaning operations).
- Phostoxin (an insecticide and rodenticide) was released into the lagoon several times between 1975 and 1979.
- Currently, no effluent is entering the lagoons.

Conclusions:

- Contaminant fate and transport modeling indicated that the pesticides and herbicides Aldrin, Chlordane, DDD, DDE, DDT, Dieldrin, Diuron, Endrin, Lindane, Monuron, 2,4-D, and Heptachlor Epoxide in the soil, sediment, and surface water pose a potential future risk to groundwater.
- The pesticides and herbicides listed in the previous bullet also pose a potential risk to ecological receptors in the surface water and soil. In addition, the estimated risk for selenium in soil, sediment, or surface water is above the benchmark level for ecological receptors; however, this risk is considered conservative because of the biases in the analytical data.

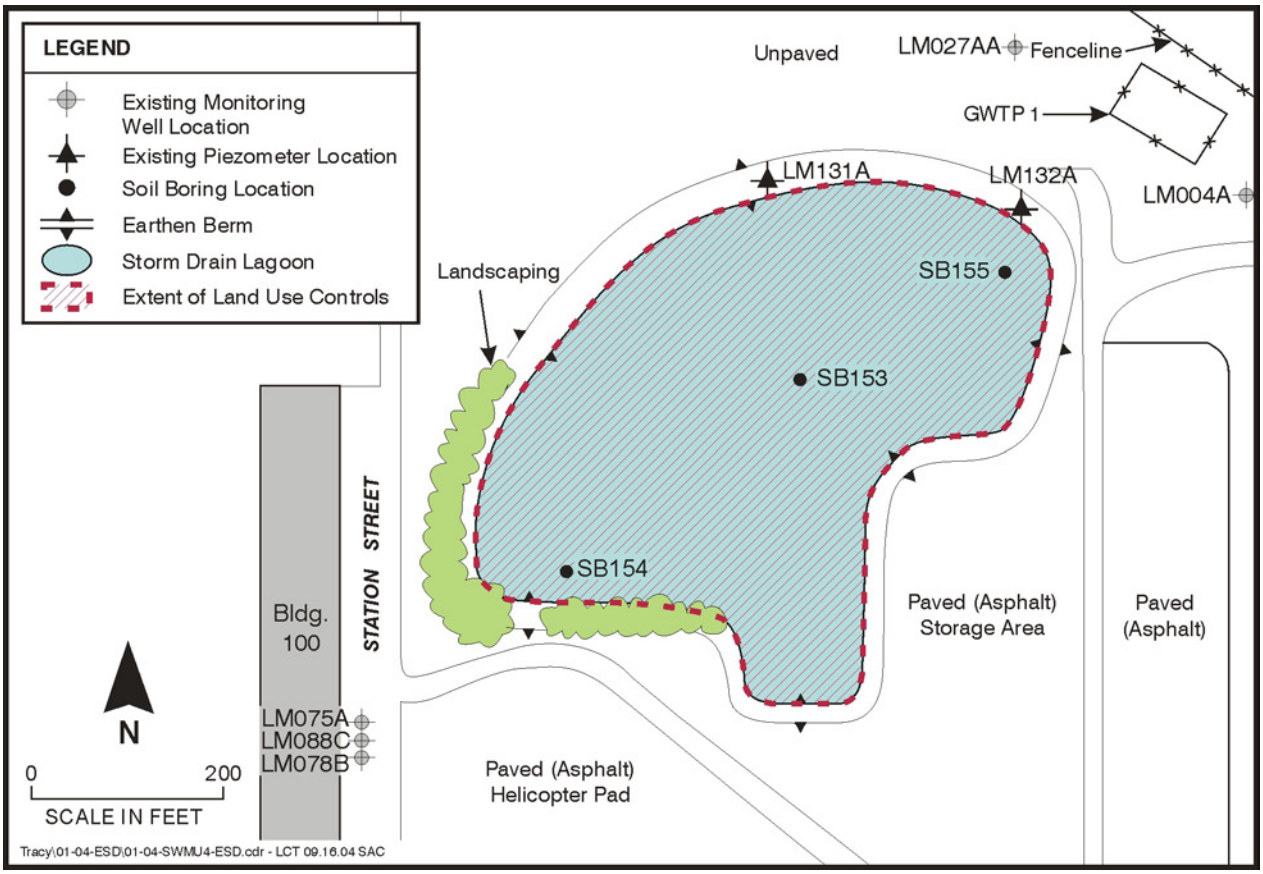
- Compounds besides those listed above were detected in soil, sediment, and groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.
- Contaminant fate and transport modeling indicated that the SVOCs bis(2-ethylhexyl)phthalate, 2,4-dimethylphenol, di-n-butylphthalate, and 4-methylphenol in the soil or sediment pose a potential future risk to groundwater.

References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

This page intentionally left blank

SITE: SWMU 4



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Wet season controls installed. Sediment in the pond has contaminant concentrations that pose a health risk under the residential scenario according to the baseline risk assessment.

Contaminants of Concern:

- Aluminum, Arsenic, DDX, Dieldrin, Lead, Manganese, Polycyclic Aromatic Hydrocarbons, and PCBs.

Site Characteristics:

Past Site Activities

- Stormwater from DDJC-Tracy has accumulated in the storm drain lagoon since 1971.
- The storm drain lagoon is unlined and bounded by soil berms that are approximately 6 feet high.
- The storm drain lagoon contains water nearly year-round, and waterfowl inhabit the area.
- The storm drain lagoon reportedly received rinse water from paint-stripping, degreasing, and steam-cleaning operations.
- This area was used for open storage before 1952.
- A stockpile of manganese ore was located northeast of the lagoon area from 1957 to 1968.

RI/FS Activities

- Site investigation activities at SWMU 4 included a soil gas survey, surface water and sediment sampling, soil sampling, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were conducted for SWMU 4.

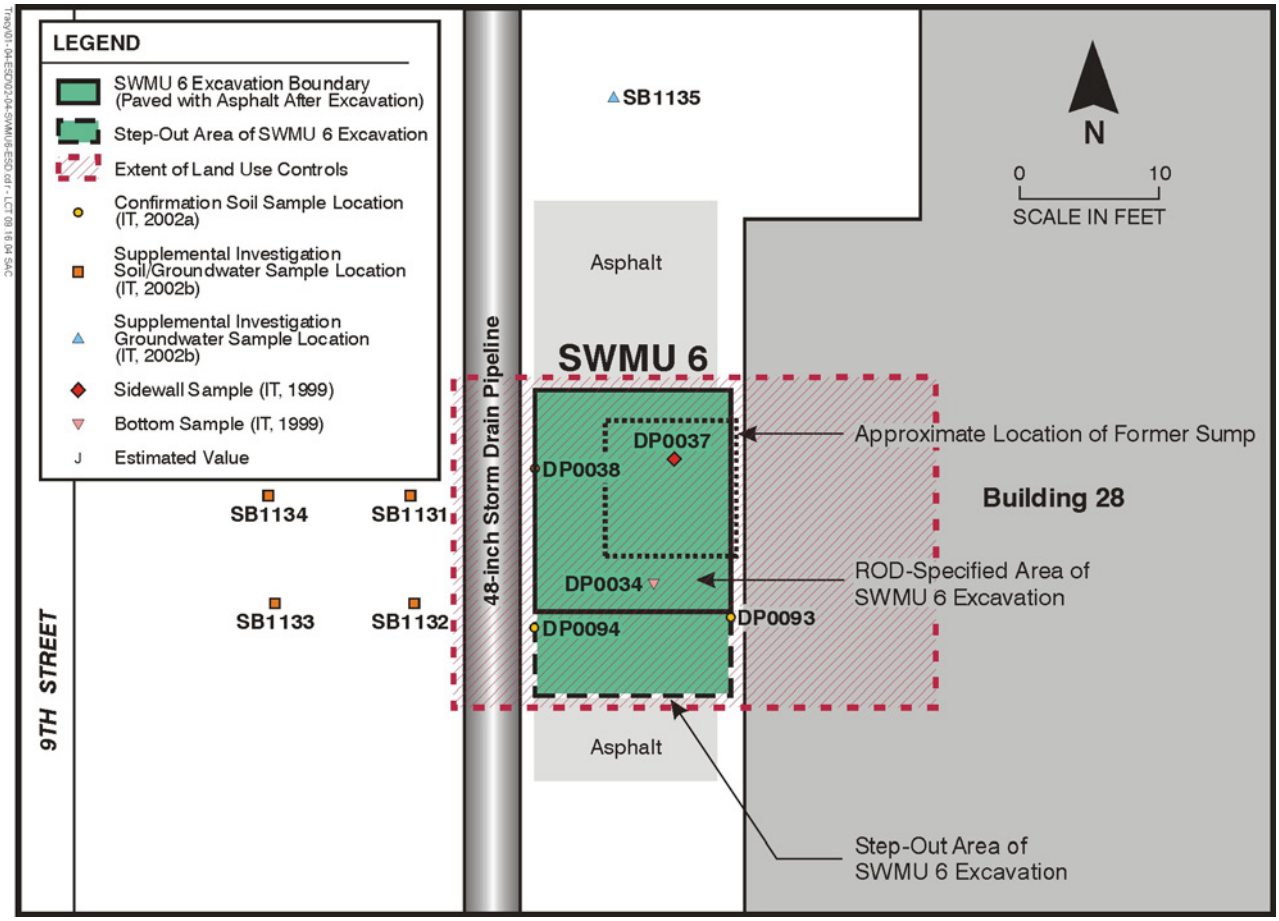
Conclusions:

- Dichlorodifluoromethane, chloromethane, and toluene in groundwater are part of the OU 1 groundwater plume; SWMU 4 is not a source of these compounds.
- The pesticides and herbicides Simazine, Diuron, Monuron, and Dieldrin cannot be clearly attributed to SWMU 4.
- Contaminant fate and transport modeling indicated that the pesticides and herbicides carbaryl, carbofuran, Chlordane, 2,4-D, and Dieldrin in soil or sediment pose a potential future threat to groundwater. Monitoring data indicate that an impact is unlikely.
- Fate and transport modeling indicated that the SVOCs bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene in soil or sediment pose a potential future threat to groundwater. Monitoring data indicate that an impact is unlikely.
- The compounds DDD, DDE, and DDT in soil, sediment, or surface water pose a potential risk to ecological receptors. The estimated risk for the metals zinc and selenium in soil or sediment are above the benchmark level for ecological receptors; however, these risks are considered conservative because of the biases in the analytical data.
- Compounds other than those listed above were detected in soil, sediment, surface water, or groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.

References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.
- URS, 2003. *Amendment of the Sitewide Comprehensive Record of Decision*. Final. August. Section 4.3: paragraph 4.3.4. Section 2.3: paragraph 2.3.6.

SITE: SWMU 6



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Excavation completed. Residual contamination includes Dieldrin concentrations above industrial preliminary remediation goals.

Contaminants of Concern:

- 2,3,7,8-TCDD, Benzo(a)anthracene, Benzo(a)pyrene, Beryllium, Dieldrin, and PCBs.

Site Characteristics:

Past Site Activities

- This site is the former location of UST 21 and a 250-gallon concrete sump.
- A portion of Building 28 was used for repackaging.
- Wastes from repackaging were collected in the sump.
- The sump operated from approximately 1968 to 1977.
- The sump was initially abandoned in place; it was removed in 1988.

RI/FS Activities

- Site investigation activities at SWMU 6 included soil sampling, a soil gas survey, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 6.

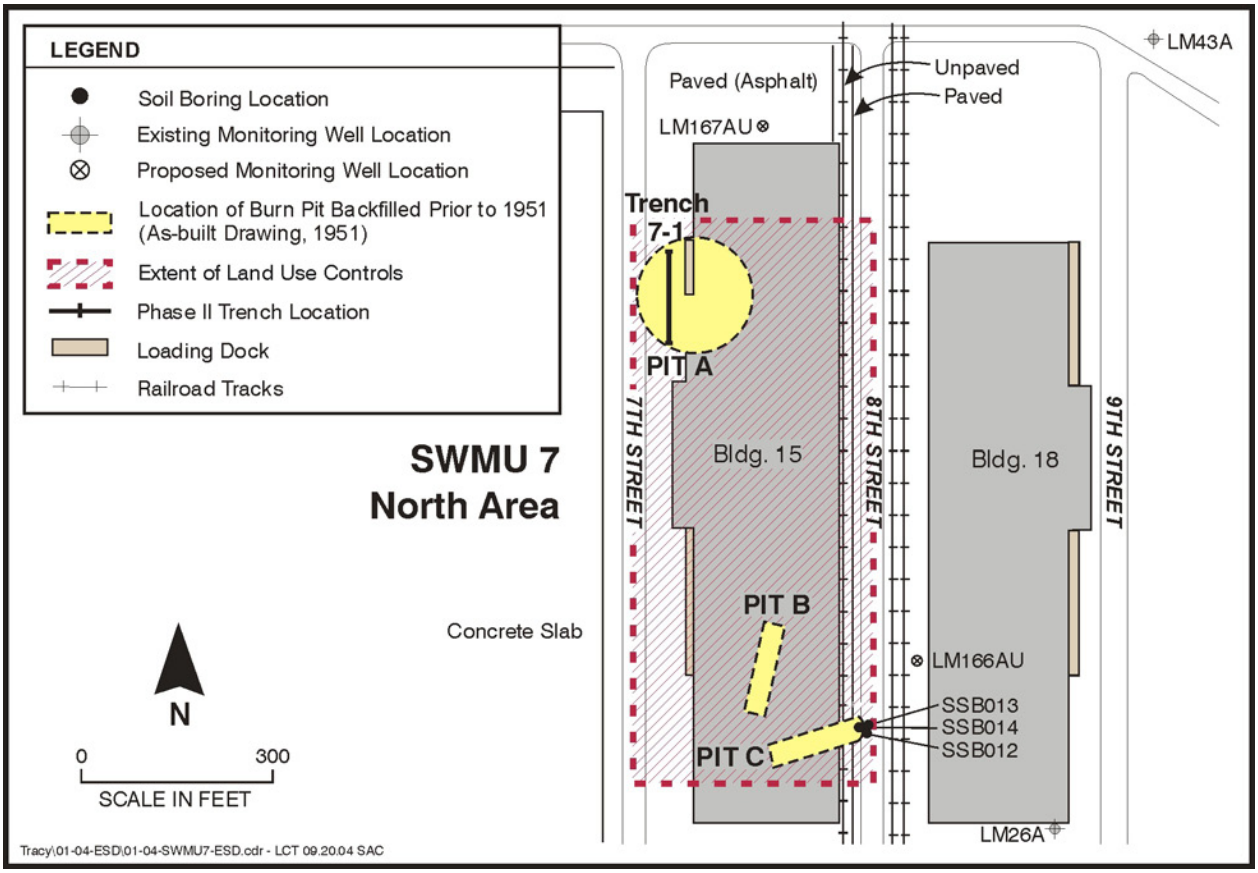
Conclusions:

- SWMU 6 was a source of PCE and TCE to the OU 1 groundwater plume.
- The pesticide Lindane has impacted groundwater at SWMU 6.
- Contaminant fate and transport modeling indicated that the pesticides and herbicides Dicamba, Dieldrin, Endrin, Heptachlor, Lindane, and 2,4,5-T in the soil pose a potential future threat to groundwater.

References:

- URS Group, Inc., 2004. *Explanation of Significant Differences.* Final. September. Sections 2 and 3.

SITE: SWMU 7, North and South Areas

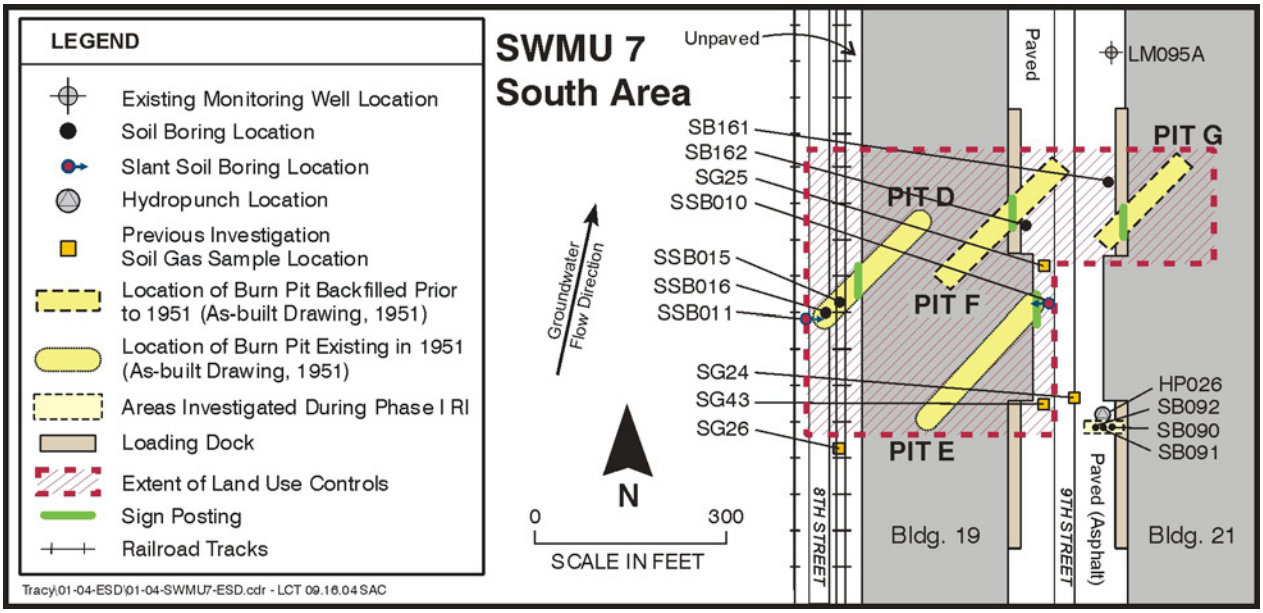


Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.
- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures, and pavement. By covering portions of the disposal pits, the building foundations mitigate groundwater threats by reducing rainwater infiltration and preventing exposure to underlying soil. Removal of pavement or the building foundations constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install and maintain warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.



Actions to Date:

- Warning signs have been installed and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Soil contamination left in place poses potential health risk according to the baseline risk assessment. The water quality assessment in the remedial investigation/feasibility study report identified a potential threat to groundwater quality.

Contaminants of Concern:

- 1,2-Dichloroethene, 2,3,7,8-TCDD, 2,4-D, Benzo(a)anthracene, Benzo(a)pyrene, Beryllium, Bis(2-ethylhexyl)phthalate, Chlordane, DDD, DDE, Dieldrin, Linuron, PCBs, Simazine, and Trichloroethene.

Site Characteristics:

Past Site Activities

- SWMU 7 is the site of seven pits (Pits A-G) now partially or completely beneath Buildings 15, 19, and 21.
- The pits may have been up to 16 feet deep.
- The pits were reportedly used between 1942 and 1954 for disposing of medical supplies containing mercury and phosphate compounds, narcotics, pharmaceuticals, radiological supplies, and electron tubes.
- Solids and liquids stored or used at the depot may have been buried or burned in the pits.

RI/FS Activities

- Site investigation activities at SWMU 7 included a geophysical survey, soil gas surveys, radionuclide, screening, soil sampling, trenching, monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for this site.

Conclusions:

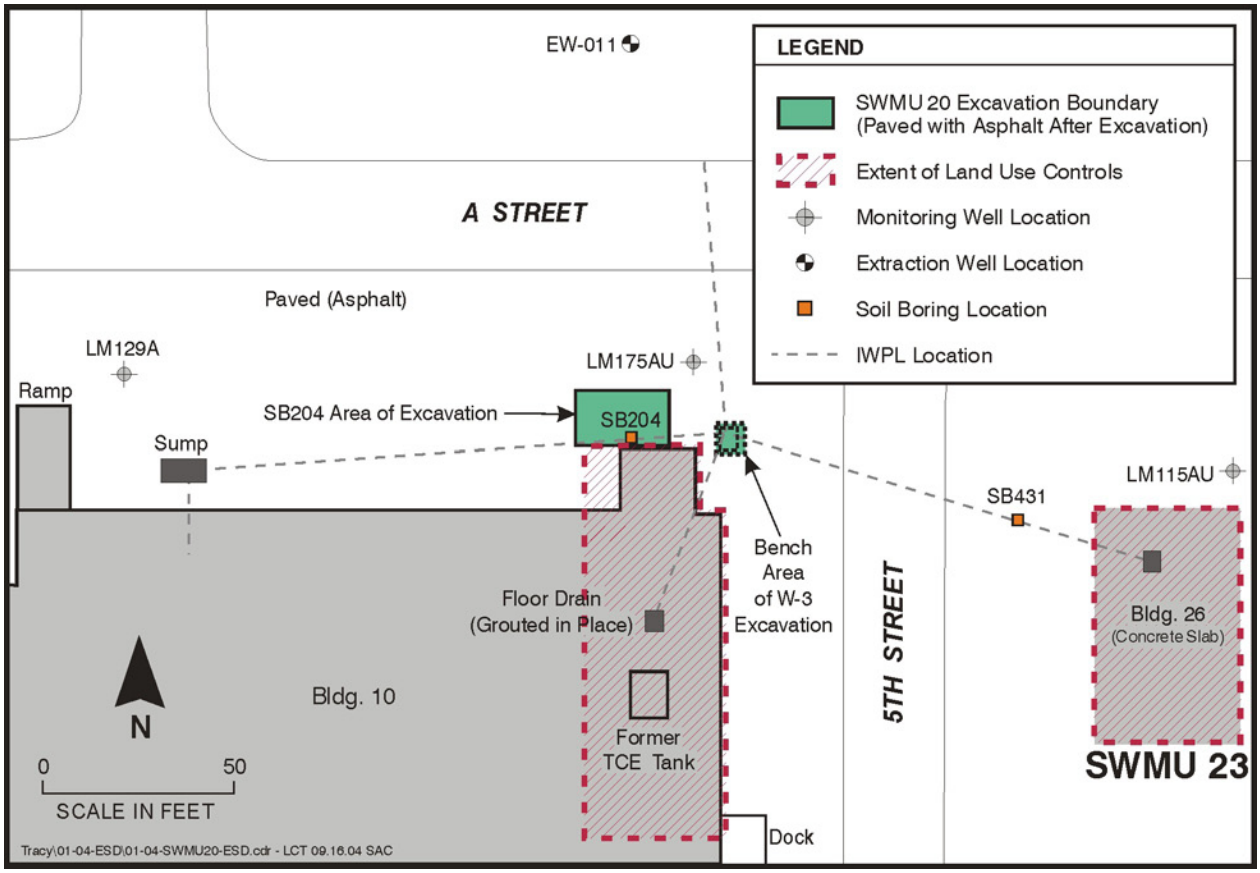
- Groundwater has been impacted by bis(2-ethylhexyl)phthalate and octachlorociosin.
- Contaminant fate and transport modeling indicated that contaminants in the soil pose a potential future threat to groundwater. These contaminants are:
  - Pit F: VOCs (1,2-DCE, TCE)
  - Pit C: SVOCs (bis[2-ethylhexyl]phthalate)
  - Pesticides and herbicides (Dieldrin, Linuron)
  - Pit D: Pesticides and herbicides (2,4-D, Dieldrin, Linuron, Simazine)
  - Petroleum hydrocarbons (TPH-diesel)

References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 4.4 and 4.6.

This page intentionally left blank

SITE: SWMU 20



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures) and existing structures. By covering portions of the contaminated soil, Buildings 10 and 26 mitigate groundwater threats by reducing rainwater infiltration and preventing exposure to the underlying soil. Removal of the building foundations constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Excavation completed. Additional contamination may remain under Buildings 10 and 26 and below 5th Street. Removal of these buildings or 5th Street may increase the risk to groundwater quality. Additional characterization for this site is pending.

Contaminants of Concern:

- Aluminum, Polycyclic Aromatic Hydrocarbons, PCBs, Trichloroethene, and Total Petroleum Hydrocarbons as Diesel.

Site Characteristics:

Past Site Activities

SWMU 20 – Aboveground Solvent Tank

- SWMU 20 included a 500-gallon aboveground solvent (TCE) degreasing unit located inside Building 10.
- Building 10 was constructed in 1950. According to warehouse plans, several cleaning facilities were used at various times from 1950 to 1974.
- A spray paint booth and cleaning operations were reportedly connected to a sump (Manhole W-1 of the Industrial Wastewater Pipeline [SWMU 33]).
- UST Site 13 is close to SWMU 20. This site reportedly contained a 2,000-gallon No. 2 fuel oil tank, which was removed in 1987.

RI/FS Activities

- Site investigation activities at SWMU 20 included soil gas surveys, soil sampling, sump sampling, pipeline inspection, monitoring well installation, and groundwater monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 20.

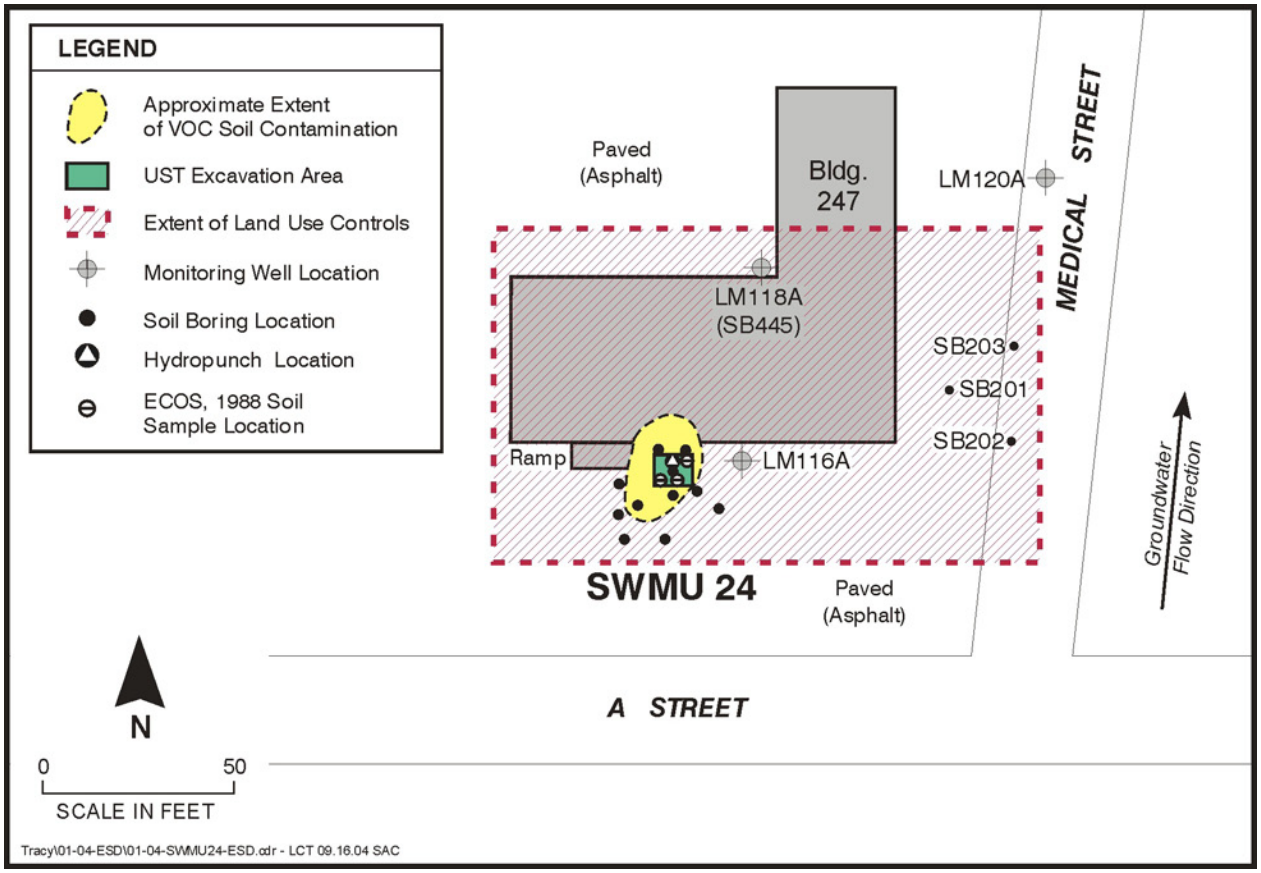
Conclusions:

- SWMU 20 was a source of TCE and PCE to the OU 1 groundwater plume.
- Groundwater has been impacted by monuron, diuron, alpha-BHC, methiocarb, and 2,4-D.
- Contaminant fate and transport modeling indicated that TCE, ethylbenzene, xylenes, eiethylphthalate, 2,4-dinitrophenol, pentachlorophenol, 2,4,6-trichlorophenol, Dieldrin, Methiocarb, MCPA, Linuron, and TPH-diesel in soil pose a potential future threat to groundwater.

Reference:

- URS Group, Inc., 2004. *Explanation of Significant Differences*. Final. September. Sections 2 and 5.

SITE: SWMU 24



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Bioventing is being performed, but residual PCB, aluminum, and manganese contamination in soil is to be expected. These contaminants pose a risk under the residential scenario according to the baseline risk assessment.

Contaminants of Concern:

- Acetone, Aluminum, Manganese, PCBs, Polycyclic Aromatic Hydrocarbons, and Toluene.

Site Characteristics:

Past Site Activities

- A 500-gallon underground steel tank was used to store petroleum wastes from materials testing in Building 247.
- The tank was used from 1961 until it was removed in 1988.
- A visual inspection conducted during tank removal revealed pinholes in the base of the tank.

RI/FS Activities

- Site investigation activities at SWMU 24 included soil sampling, monitoring well installation, groundwater monitoring, and air monitoring.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 24.

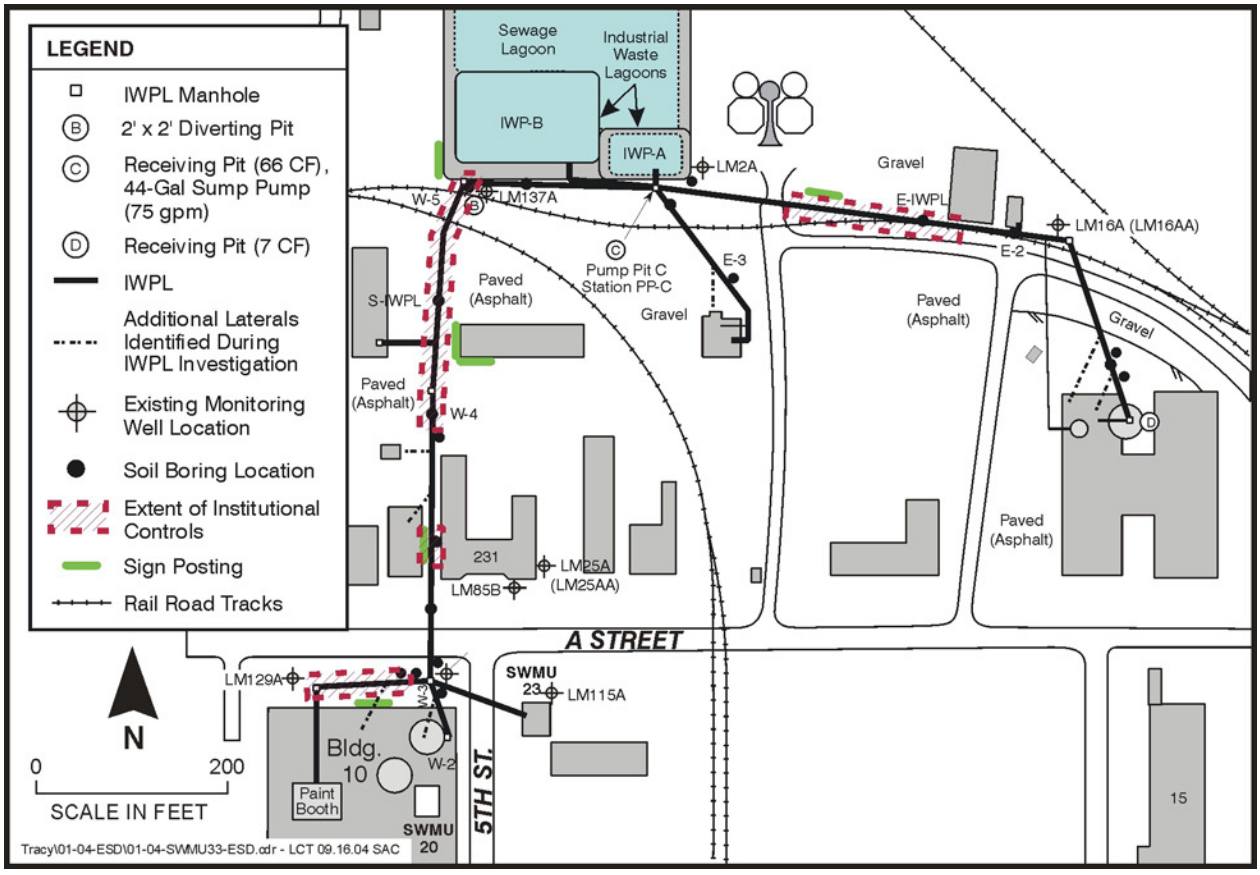
Conclusions:

- SWMU 24 is located within the OU 1 groundwater plume; however, it is not a source of contaminants to OU 1.
- TPH as gasoline may have been released to groundwater; however, its extent is extremely limited.
- The following contaminants in the soil pose a potential future threat to groundwater: acetone, 2-butanone, ethylbenzene, 2-hexanone, 4-methyl-2-pentanone, toluene, xylenes, 2,4-dimethylphenol, fluoranthene, 2-methylnaphthalene, 4-methylphenol, naphthalene, phenanthrene, phenol, pyrene, TPH-gasoline, TPH-diesel, PCBs (Aroclor 1260), carbofuran, Lindane, Phorate, and Ronnel.
- There is a potential risk to future depot workers from manganese.

References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4: paragraph 4.4.2.

SITE: SWMU 33



Purpose of Controls:

- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Maintain existing pavement/compacted gravel covering portions of SWMU 33 that have contaminants exceeding the cleanup standard. Removal and/or modification of the pavement or compacted gravel constitutes disruption of the selected remedy and triggers notification of the agencies and follow-up activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Excavation completed along with grouting of the industrial waste pipeline to reduce infiltration. Warning signs have been installed, and land use controls (including current construction notification requirements) are documented *Addendum to Future Development Report*. Contamination left in place poses a threat to groundwater quality as noted in the RI/FS report.

Contaminants of Concern:

- Aldrin, Carbaryl, Dieldrin, Diethylphthalate, Di-n-butylphthalate, Methiocarb, Naphthalene, Total Petroleum Hydrocarbons, and Xylenes.

Site Characteristics:

Past Site Activities

- Historically, wastestreams from various shops performing unit operations have been routed to the industrial waste lagoons (SWMU 3) via the industrial waste pipeline (IWPL).
- The IWPL was constructed in 1972.
- The IWPL is buried approximately 2 to 4 feet below ground surface.
- The IWPL is constructed of various materials, including transite, vitrified clay pipe, and polyvinyl chloride (PVC).
- There are two major lines from the IWPL. Both the south IWPL and its branches and the east IWPL and its branches are approximately 1,200 feet in length.

RI/FS Activities

- Site investigation activities at SWMU 33 included soil gas surveys, soil sampling, well installation groundwater monitoring, surface water and sediment sampling, a pipeline assessment, video inspection, air and smoke testing, and sump sampling. A removal action was proposed and completed for this site.
- A water quality assessment, a fate and transport analysis, and a baseline risk assessment were performed for SWMU 33.

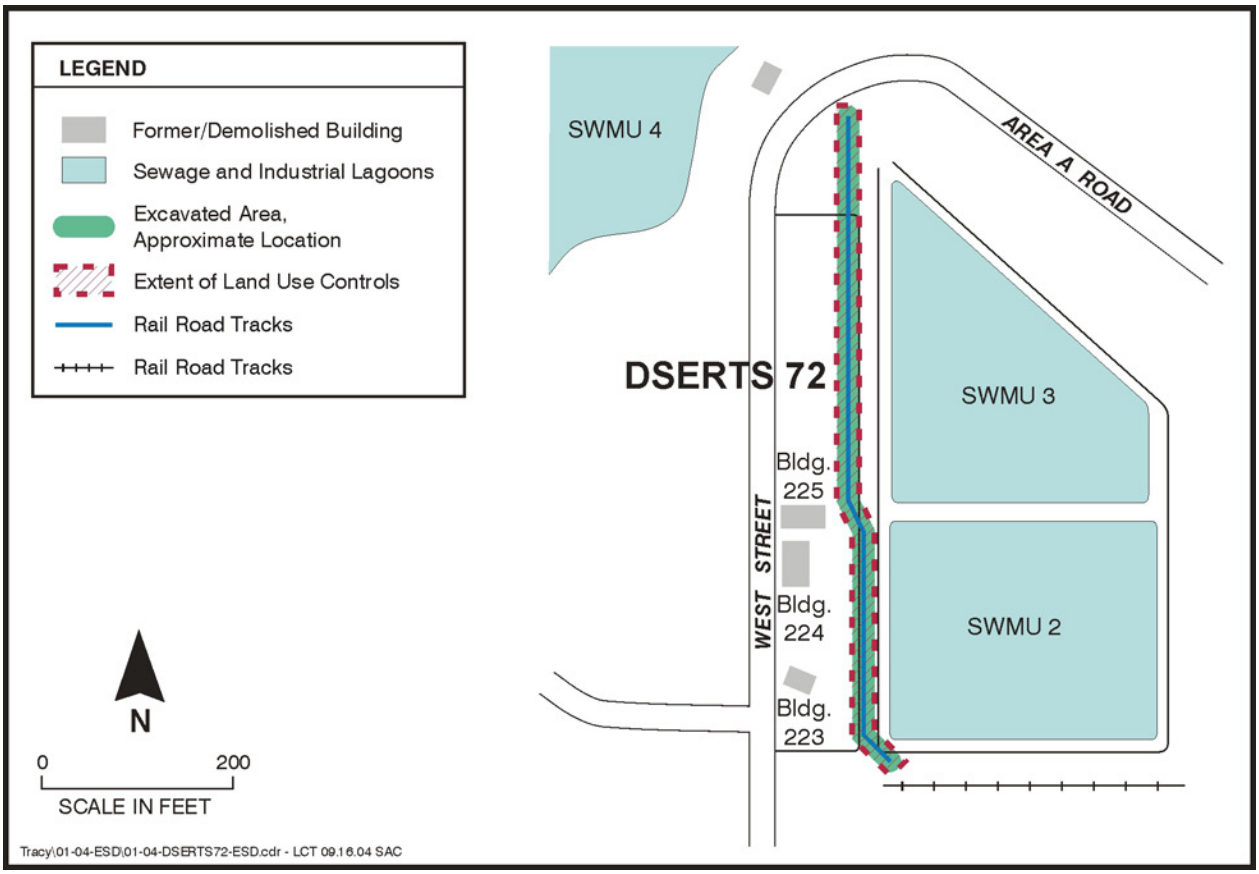
Conclusions:

- SWMU 33 was a probable source of TCE, PCE, chloroform, 1,1-DCA, and 1,2-DCE in the OU 1 groundwater plume.
- SWMU 33 was also a source of DDD, DDE, DDT, Monuron, Diuron, alpha-BHC, and Dieldrin to groundwater.
- Contaminant fate and transport modeling indicated that xylenes, diethylphthalate, di-n-butylphthalate, naphthalene, aldrin, carbaryl, dieldrin, methiocarb, and TPH as diesel in the soil are potential threats to groundwater.
- Compounds besides those listed above were detected in soil, soil gas, and groundwater; however, none exceeded the risk criteria or represented a potential or actual threat to beneficial uses of groundwater or background groundwater quality. Thus, these compounds are not considered contaminants of concern.

References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report*.
- URS Group, Inc., 2001. DDJC-Tracy *Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 4.4 and 4.8.

SITE: DSERTS 72



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Post-excavation sampling identified residual contaminant concentrations above residential preliminary remediation goals.

Contaminants of Concern:

- DDX and Dieldrin.

Site Characteristics:

Past Site Activities

- The source of pesticide contamination has not been identified.
- Contamination was discovered during storm drain installation.

RI/FS Activities:

- Site was discovered after completion of the RI/FS.
- Characterization is documented in the ROD Amendment.

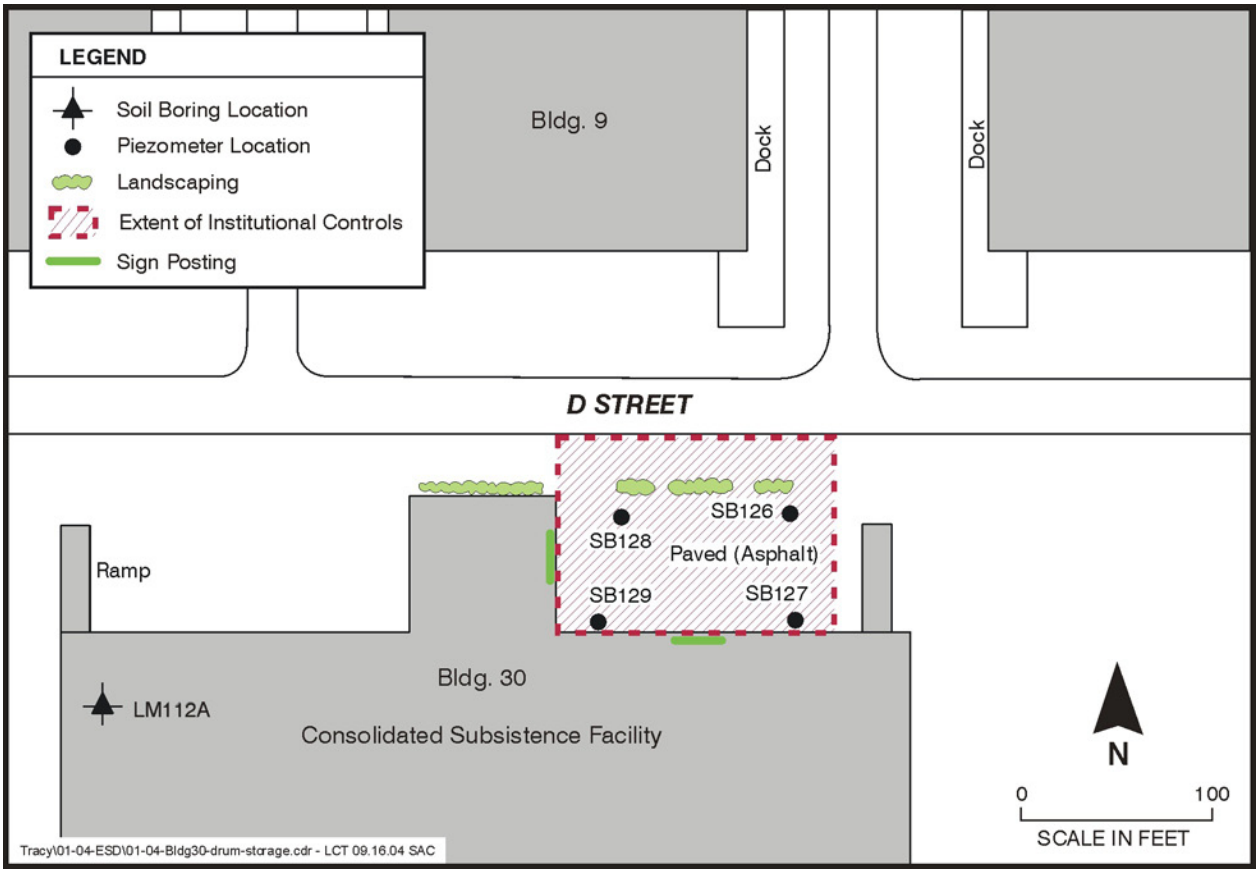
Conclusion:

- Pesticide contamination should be re-evaluated in the event of a change in land use.

Reference:

- URS Group, Inc., 2001. *No Further Response Action Planned for Defense Site Environmental Reporting and Tracking System 72 (DSERTS 72).* Final. May.
- URS Group, Inc., 2003. *Amendment of the Sitewide Comprehensive Record of Decision*. Final. August. Section 4.3: paragraph 4.3.4.

SITE: Building 30 Drum Storage Area



Purpose of Controls:

- Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures, and pavement. Maintaining existing structures and pavement prevents the infiltration of rainwater that could otherwise transport contaminants to groundwater. Removal and/or disruption of the pavement or building foundation constitutes disruption of the selected remedy and triggers notification of the agencies and follow-on activities to ensure that the controls are fully restored.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Warning signs have been installed, and land use controls (including current construction notification requirements) are documented in *Addendum to Future Development Report*. Soil contamination left in place poses a threat to water quality as noted in the RI/FS report.

Contaminants of Concern:

- Benzyl Alcohol, Bis(2-ethylhexyl)phthalate, Diethylphthalate, and Di-n-butylphthalate.

Site Characteristics:

Paste Site Activities

- The site is partially covered by the Consolidated Subsistence Facility (which was constructed in 1992) and is located in the southern portion of DDJC-Tracy.
- Solvents were reportedly stored in drum storage areas at DDJC-Tracy.
- The site history indicates that petroleum hydrocarbons or metal-containing wastes were stored at Building 30.

RI/FS Activities:

- Site investigation activities at the Building 30 Drum Storage Area included soil sampling. No groundwater samples were collected at this site.
- A fate and transport analysis and a baseline risk assessment were performed for this site.

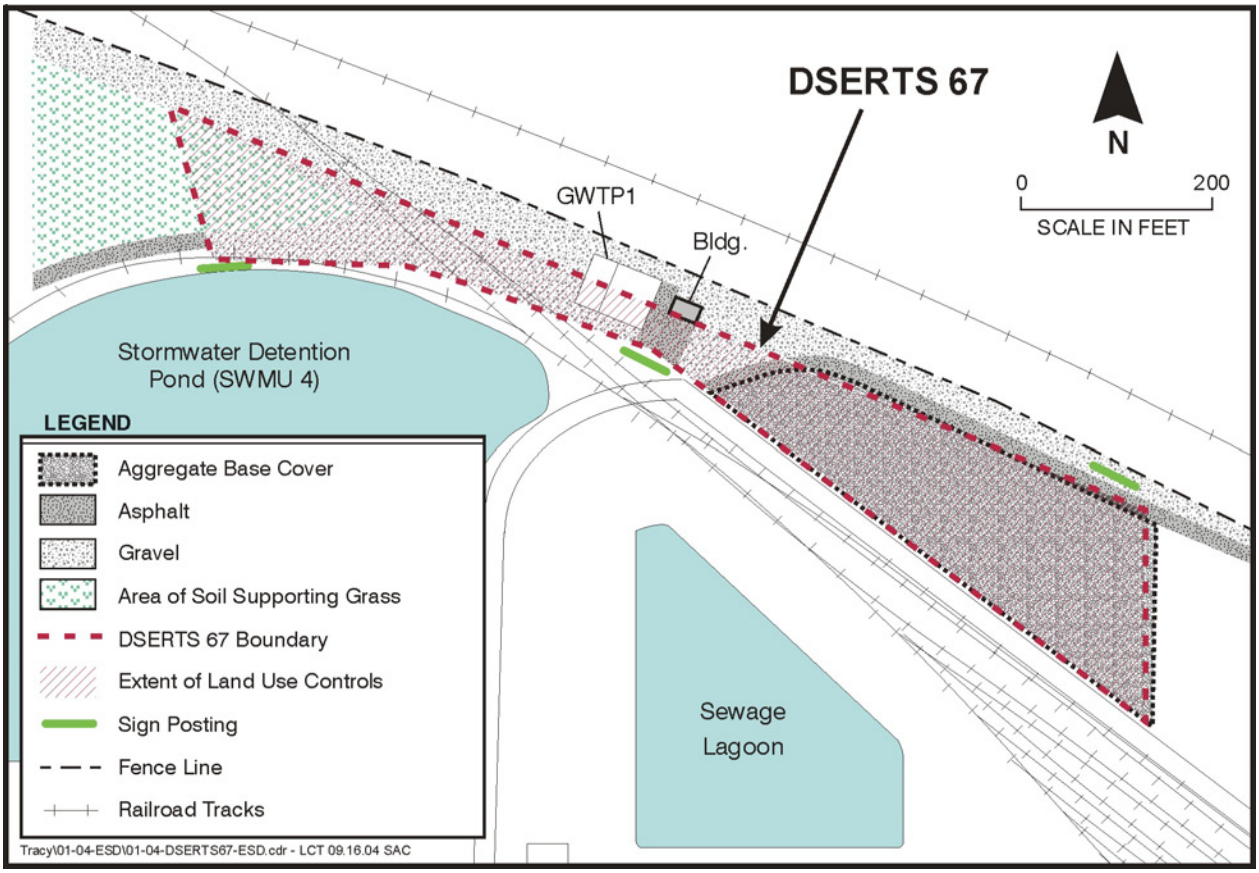
Conclusions:

- Contaminant fate and transport modeling indicated that the following compounds in the soil pose a potential future threat to groundwater: benzyl alcohol, bis(2-ethylhexyl)phthalate, diethylphthalate, and di-n-butylphthalate.

References:

- Radian International, 1998. *DDJC-Tracy Site-Wide Comprehensive Record of Decision.*
- Radian International, 1998. *Addendum to the Future Development Report.*
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 4.4 and 4.7.

SITE: Northern Depot Soils Area (DSERTS 67)



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.
- Prevent unprotected exposure of construction workers to contaminated soil.

Land Use Control Requirements:

- Implement notification procedure for construction activities or land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures), existing structures; aggregate base, gravel, and asphalt covers; and vegetation.
- Perform annual site inspection and review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Install warning signs.
- Ensure controls are restored following construction activities.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- Additional aggregate cover has been installed at DSERTS 67. Warning signs have been installed, and land use controls (including current construction notification requirements) are documented *Addendum to Future Development Report*. Contamination left in place poses potential health risk according to the baseline risk assessment.

Contaminants of Concern:

- Arsenic and Manganese.

Site Characteristics:

Past Site Activities

- The northern depot is a nonvegetated area of bare soil.
- The site was reportedly used as a storage area for the National Stockpile of Strategic Metals.
- From 1980 to 1987, lead ballast was stored in this area.
- From shortly after World War II until the 1980s, ferrous chromium ore was stored in Quadrants VII and VIII.
- From shortly after World War II until the 1970s, manganese ore was also stored in this area.

RI/FS Activities

- Site investigation activities in the Northern Depot Area included soil sampling (surface and near surface) and respirable dust level measurements.
- A fate and transport analysis and a baseline risk assessment were conducted for this site.

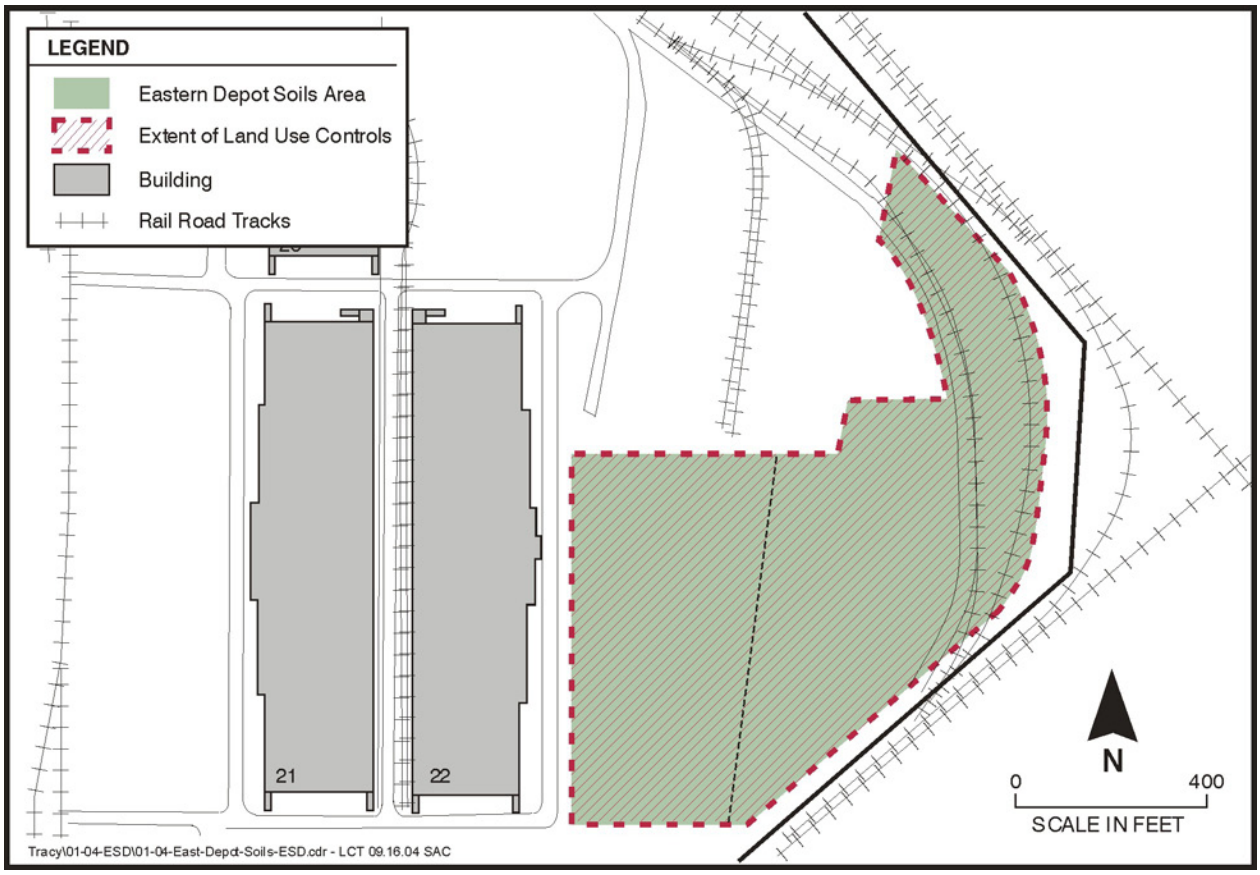
Conclusions:

- Contaminant fate and transport modeling indicated that none of the contaminants in the soil poses a potential threat to groundwater.
- The metals arsenic and manganese pose a potential risk to a grader operator.
- The pesticides and herbicides DDD, DDE, DDT, Chlordane, Dieldrin, Endrin, and Lindane were detected in the soil at concentrations that exceeded established background threshold levels; however, none of the concentrations exceeded the risk criteria or posed a potential future risk to groundwater.

References:

- Radian International, 1998. *Addendum to the Future Development Report*.
- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Sections 3.4 and 4.4.

SITE: Eastern Depot Soils Area



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Control Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- None.

Contaminants of Concern:

- Aluminum, Arsenic, Chlordane, DDX, Dieldrin, and PCBs.

Site Characteristics:

Past Site Activities

- This site encompasses undefined area-wide contamination in a nonvegetated area.
- This location was formerly used for grader training exercises.

RI/FS Activities

- Soil samples were collected from surface and near surface samples.
- A baseline risk assessment was performed for this site.

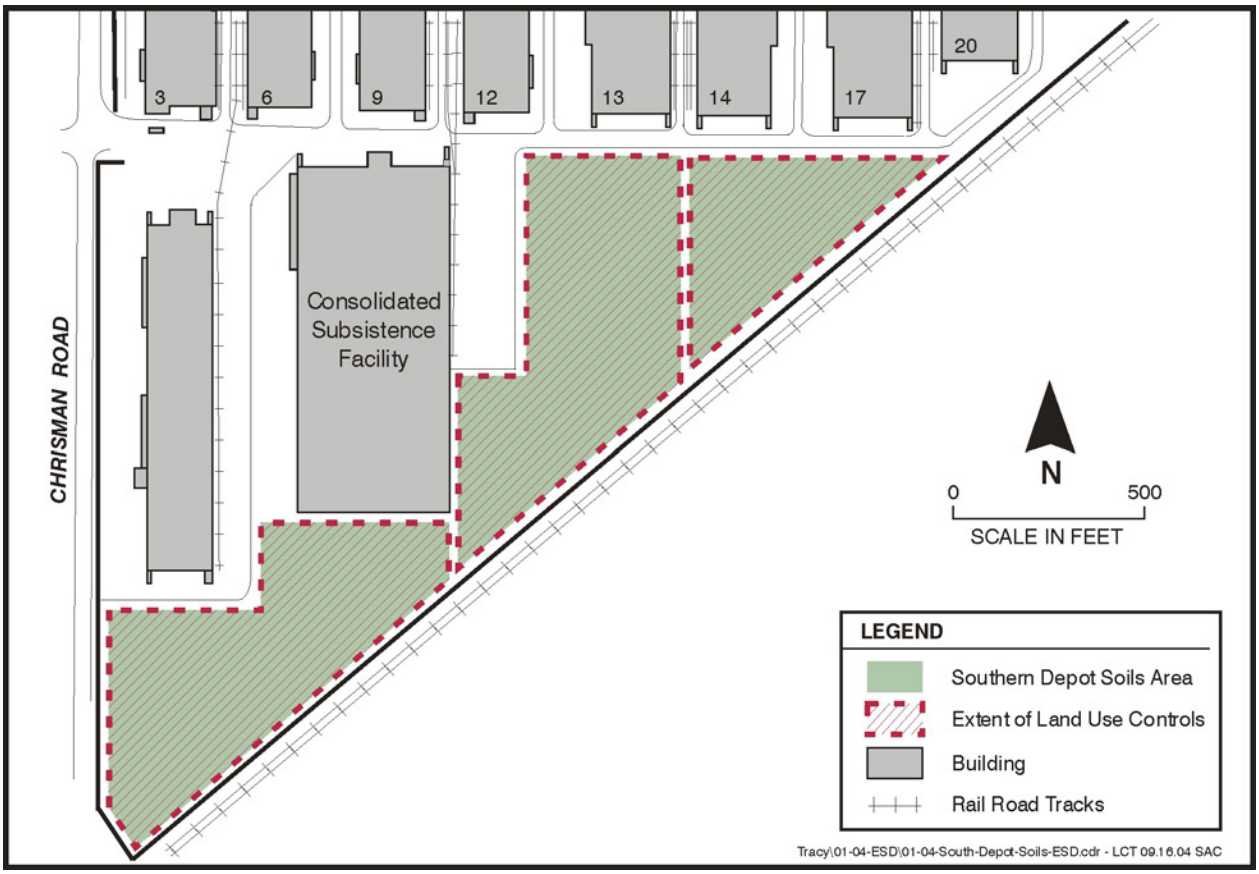
Conclusions:

- Potential human health risk was identified under the future residential use scenario.

Reference:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.

SITE: Southern Depot Soils Area



Purpose of Controls:

- Prohibit residential, day care, play area, or school use.

Land Use Controls Requirements:

- Implement notification procedure for land use changes.
- Maintain administrative controls (i.e., IMP addendum and notification procedures).
- Perform annual review to ensure compliance with controls and to correct any deficiencies in the existing cover or notification procedure.
- Follow defined procedures in the event of a change in land use.
- Sample and properly dispose of soil generated from any future excavation activities.

Actions to Date:

- None.

Contaminants of Concern:

- Dieldrin.

Site Characteristics:

Past Site Activities

- The site encompasses undefined area-wide contamination in a nonvegetated area.
- This location was formerly used for grader training exercises.

RI/FS Activities

- Soil sampling included the collection of surface and near surface samples.
- A baseline risk assessment was performed for this site.

Conclusions:

- Potential human health risk was identified under the future residential use scenario.

References:

- URS Group, Inc., 2001. *DDJC-Tracy Explanation of Significant Differences to the Selected Remedies in the ROD for SWMUs 2, 3, 7, and 33, Building 30 Drum Storage Area, and the Northern Depot Soils Area*. Revised Draft Final, June. Final, July. Section 4.4.

Attachment 1

DDJC-FA ENVIRONMENTAL PROJECT MANAGER

PROJECT APPROVAL FORM

PROJECT NAME:

PROJECT LOCATION:

RESPONSIBLE PARTY:

PROJECTED START AND COMPLETION DATE:

Has a complete description of the proposed work been submitted? ☐ Yes ☐ No

Is the proposed work within the restricted areas? ☐ Yes ☐ No

If yes, is a plan for handling any contaminated soil attached? ☐ Yes ☐ No

Are engineering controls planned to minimize/prevent impacts to groundwater described? ☐ Yes ☐ No

Has a Health and Safety Plan to address possible exposure been developed? ☐ Yes ☐ No

Have the signatory parties to the Record of Decision been notified of the proposed activities at least 90 days prior to project start? (attach comments and comment responses) ☐ Yes ☐ No

_____
Date of Notification

Have the signatory parties been notified of the completion of construction activities before the demobilization of the construction contractor, and been offered the opportunity to inspect the site? (this line to be completed after construction) ☐ Yes ☐ No

_____
Date of Notification

DDJC-FA Environmental Project Manager Additional Requirements or Comments:

_____

_____

_____

_____

I have reviewed the proposed excavation/construction activities and authorize this work to proceed.

_____

DDJC-FA Environmental Project Manager Date

DDJC-FA FACILITY ENGINEER

PROJECT APPROVAL FORM

PROJECT NAME:

PROJECT LOCATION:

RESPONSIBLE PARTY:

PROJECTED START AND COMPLETION DATE:

Has a complete description of the proposed work been submitted? ☐ Yes ☐ No

Is the proposed work within the restricted areas? ☐ Yes ☐ No

If yes, is a plan for handling any contaminated soil attached? ☐ Yes ☐ No

Are engineering controls planned to minimize/prevent impacts to groundwater described? ☐ Yes ☐ No

Has a Health and Safety Plan to address possible exposure been developed? ☐ Yes ☐ No

Have the signatory parties to the Record of Decision been notified of the proposed activities at least 90 days prior to project start? (attach comments and comment responses) ☐ Yes ☐ No

_____
Date of Notification

Have the signatory parties been notified of the completion of construction activities before the demobilization of the construction contractor, and been offered the opportunity to inspect the site? (this line to be completed after construction) ☐ Yes ☐ No

_____
Date of Notification

DDJC-FA Facility Engineer Additional Requirements or Comments:

_____

_____

_____

_____

I have reviewed the proposed excavation/construction activities and authorize this work to proceed.

_____

DDJC-FA Facility Engineer Date

APPENDIX G

Soil Gas Results for SWMU 20

@ AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 0404306

Work Order Summary

CLIENT:	Ms. Stacy Louie URS Corporation 2870 Gateway Oaks Drive Suite 300 Sacramento, CA 95833	**BILL TO:**	Ms. Stacy Louie URS Corporation 2870 Gateway Oaks Drive Suite 300 Sacramento, CA 95833
PHONE:	916-679-2000	**P.O. #**	
FAX:	916-679-2900	**PROJECT #**	18600363.35010 Tracy Closure SVE
DATE RECEIVED:	4/16/2004	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	4/30/2004		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	CP0805GS001NS	Mod. Method TO-14A	1.5 "Hg
02A	CP0806GS001NS	Mod. Method TO-14A	1.0 "Hg
03A	Lab Blank	Mod. Method TO-14A	NA
04A	CCV	Mod. Method TO-14A	NA
05A	LCS	Mod. Method TO-14A	NA

CERTIFIED BY: Linda J. Fruman DATE: 05/03/04

Laboratory Director

Certfication numbers: AR DEQ - 03-084-0, CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/03, Expiration date: 06/30/04
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Mod. Method TO-14A
URS Corporation
Workorder# 0404306

Two 1 Liter Summa Canister samples were received on April 16, 2004. The laboratory performed the analysis via Modified Method TO-14A using GC/MS in the full scan mode. The method involves direct injection of up to a 40 mL sample aliquot into a vapor management system. Following dehumidification the sample passes directly into the GC/MS for analysis. See the data sheets for the reporting limits of each compound.

Requirement	*TO-14A/TO-15*	*ATL Modifications*
Concentration of IS Spike	10 ppbv (TO-15)	500 ppbv
BFB Acceptance Criteria	CLP protocol (TO-15)	SW-846 protocol
Sampling Drying System	Nafion Dryer (TO-14A)	Multisorbent concentrator
Blank acceptance criteria	< 0.2 ppbv (TO-14A)	< RL.
IS Recovery	TO-15: Within 40 % of mean over ICAL for blanks, and w/in 40 % of daily CCV for samples	Within 40 % of CCV recovery for blank and samples.
Sample volume	Up to 400 mL (TO-14A)	Up to 40 mLs
Initial Calibration	</= 30 % RSD (TO-14A)	</= 30 % RSD with 2 compounds allowed out to < 40 %.
Primary Ions for Quantification	Freon 114: 85, Carbon Tetrachloride: 117, Trichloroethene: 130, Ethyl Benzene, m,p- and o-Xylene: 91	Freon 114: 135, Carbon Tetrachloride: 119, Trichloroethene: 95, Ethyl Benzene, m,p- and o-Xylene: 106
Daily CCV	</= 30 % D	</= 30 % D with 2 allowed out up to 40%; flag associated sample results.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
BFB Tune Absolute Abundance Criteria	Within 10% of that from the previous day. (TO-14A)	CCV Internal Standard area counts are compared to the ICAL; corrective action for > 40 %D.
Dilutions for Initial Calibration	Dynamic dilutions or static using canisters.	Syringe dilutions, bag dilutions.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

AIR TOXICS LTD.

SAMPLE NAME: CP0805GS001NS

ID#: 0404306-01A

MODIFIED EPA METHOD TO-14A DIRECT INJECT GC/MS

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
cis-1,2-Dichloroethene	11	Not Detected	43	Not Detected
Chloroform	11	Not Detected	53	Not Detected
Carbon Tetrachloride	11	Not Detected	68	Not Detected
1,2-Dichloroethane	11	Not Detected	44	Not Detected
Trichloroethene	11	Not Detected	58	Not Detected
Tetrachloroethene	11	Not Detected	73	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130

AIR TOXICS LTD.

SAMPLE NAME: CP0806GS001NS

ID#: 0404306-02A

MODIFIED EPA METHOD TO-14A DIRECT INJECT GC/MS

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
cis-1,2-Dichloroethene	10	Not Detected	42	Not Detected
Chloroform	10	Not Detected	52	Not Detected
Carbon Tetrachloride	10	Not Detected	67	Not Detected
1,2-Dichloroethane	10	Not Detected	43	Not Detected
Trichloroethene	10	Not Detected	57	Not Detected
Tetrachloroethene	10	Not Detected	72	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 0404306-03A

MODIFIED EPA METHOD TO-14A DIRECT INJECT GC/MS

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (uG/m3)	Amount (uG/m3)
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Chloroform	5.0	Not Detected	25	Not Detected
Carbon Tetrachloride	5.0	Not Detected	32	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130

AIR TOXICS LTD.

SAMPLE NAME: CCV

ID#: 0404306-04A

MODIFIED EPA METHOD TO-14A DIRECT INJECT GC/MS

Compound	%Recovery
cis-1,2-Dichloroethene	105
Chloroform	100
Carbon Tetrachloride	112
1,2-Dichloroethane	104
Trichloroethene	105
Tetrachloroethene	118

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

AIR TOXICS LTD.

SAMPLE NAME: LCS

ID#: 0404306-05A

MODIFIED EPA METHOD TO-14A DIRECT INJECT GC/MS

Compound	%Recovery
cis-1,2-Dichloroethene	101
Chloroform	98
Carbon Tetrachloride	120
1,2-Dichloroethane	101
Trichloroethene	110
Tetrachloroethene	126

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

CHAIN OF CUSTODY RECORD

USE A BALLPOINT PEN AND PRESS FIRMLY
THE INSTRUCTIONS FOR FILLING OUT
THIS FORM ARE ON THE BACK

URS

2870 GATEWAY OAKS SUITE 300
SACRAMENTO, CA 95833
PH. (916) 679-2000
FAX (916) 679-2900

0404306

363357

TASK OR SUB TASK (are per form): Truly Closure SVE

LABORATORY NAME AND ADDRESS: Air Toxic

CONTRACT NAME:

CHARGE NUMBER: 18600363.35010

SAMPLE NUMBER	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF UNITS	CONTAINER TYPE	MATRIX CODE	PRESERVATIVE	TYPE OF ANALYSIS (new flaolor)	QC
SP0805GS001WS	4/13/04	1045	GLK	1	1L Summa	GS	—	TO14 DI 1.5"Hg	
SP0806GS001WS	4/13/04	1000	GLK	1	1L Summa	GS	—	TO14 DI 1.0"Hg	

CUSTODY SEAL INTACT?
Y N NONE TEMP —

RELEASED BY	DATE	TIME
	4/16/04	9:30

COOLER ID:

COMMENTS:

RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Sherry Fraser	4/16/04	9:30	Sherry Fraser	4/16/04	14:50
Doug Capobianco	4/16/04	14:50	Doug Capobianco	4/16/04	15:40
Laura D. Thomas ATL	4/16/04	15:40		/ /	:
	/ /	:		/ /	:
	/ /	:		/ /	:

DISPOSAL CONFIRMED BY	DATE	TIME	CHAIN-OF-CUSTODY RETURNED BY:	DATE	TIME
	/ /	:		/ /	:

WHITE - COORDINATOR • PINK - SAMPLE CONTROL • YELLOW - LABORATORY

CHAIN OF CUSTODY RECORD

USE A BALLPOINT PEN AND PRESS FIRMLY
THE INSTRUCTIONS FOR FILLING OUT
THIS FORM ARE ON THE BACK

URS

2870 GATEWAY OAKS SUITE 300
SACRAMENTO, CA 95833
PH. (916) 679-2000
FAX (916) 679-2900

0404306

363357

TASK OR SUB TASK (one per form): Tracy Closure SVE

LABORATORY NAME AND ADDRESS: Air Toxics

CONTRACT NAME:

CHARGE NUMBER: 18600363.35010

SAMPLE NUMBER	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF UNITS	CONTAINER TYPE	MATRIX CODE	PRESERVATIVE	TYPE OF ANALYSIS (mw 4/20/04)	QC
CP0805GSS6INS	4/13/04	1045	GLK	1	1L Summa	GS	—	TO14 DI 15.4 lb	
CP0806GSS6INS	4/13/04	1000	GLK	1	1L Summa	GS	—	TO14 DI 1.04 lb	

CUSTODY SEAL INTACT?
Y N NONE TEMP —

RELEASED BY	DATE	TIME	COOLER ID:
	4/16/04	9:30	COMMENTS:

RECEIVED BY	DATE	TIME	RELINQUISHED BY	DATE	TIME
Sunny Truss	4/16/04	9:30	Sunny Truss	4/16/04	14:50
Doug Cupak	4/16/04	14:50	Doug Cupak	4/16/04	15:40
Laura A. Thomas ATL	4/16/04	15:40		/ /	:
	/ /	:		/ /	:
	/ /	:		/ /	:

DISPOSAL CONFIRMED BY	DATE	TIME	CHAIN-OF-CUSTODY RETURNED BY:	DATE	TIME
	/ /	:		/ /	:

WHITE - COORDINATOR • PINK - SAMPLE CONTROL • YELLOW - LABORATORY

SAMPLE NAME	SAMPLE DATE	ANMCODE	SA CODE	ANALYTE	RESULT	QUALIFIER	UNIT	REPORTING I	DETECTIO	EPA FLAG
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.5	
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3.1	
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1028GS001NS	4/12/2004 9:25	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.8	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.4	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1028GS002NS	4/12/2004 9:40	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.4	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1029GS001NS	4/12/2004 10:18	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.4	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1029GS002NS	4/12/2004 10:25	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.3	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	Chloroform		ND	PPBV	11	1.7	
CP1030GS001NS	4/12/2004 11:25	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	Tetrachloroethene		ND	PPBV	11	3.3	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	cis-1,2-Dichloroethene		ND	PPBV	11	2	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	Carbon tetrachloride		ND	PPBV	11	3	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	Chloroform		ND	PPBV	11	1.7	
CP1030GS001FD	4/12/2004 11:25	TO14DI	FD1	Trichloroethylene		ND	PPBV	11	1.7	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.4	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1030GS002NS	4/12/2004 11:30	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.4	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1031GS001NS	4/12/2004 12:50	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.3	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	Chloroform		ND	PPBV	11	1.7	
CP1031GS002NS	4/12/2004 12:55	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.7	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	1.7	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	3.5	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	2.1	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	3.1	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	Chloroform		ND	PPBV	11	1.8	
CP1032GS001NS	4/13/2004 7:45	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	1.8	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	4.3	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	5	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	6.1	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	4.2	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	Chloroform		ND	PPBV	11	1.7	
CP1032GS002NS	4/13/2004 7:50	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	4.3	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	4.3	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	Tetrachloroethene		ND	PPBV	11	5	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	11	6.1	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	11	4.2	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	Chloroform		ND	PPBV	11	1.7	
CP1033GS001NS	4/13/2004 8:23	TO14DI	NS1	Trichloroethylene		ND	PPBV	11	4.3	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	10	4.1	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	Tetrachloroethene		ND	PPBV	10	4.8	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	cis-1,2-Dichloroethene		ND	PPBV	10	5.8	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	Carbon tetrachloride		ND	PPBV	10	4	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	Chloroform		ND	PPBV	10	1.6	
CP1033GS002NS	4/13/2004 8:30	TO14DI	NS1	Trichloroethylene		ND	PPBV	10	4.1	
CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	1,2-Dichloroethane		ND	PPBV	11	4.3	

CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	5
CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	6.1
CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.2
CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	Chloroform	ND	PPBV	11	1.7
CP1034GS001NS	4/12/2004 13:45	TO14DI	NS1	Trichloroethylene	ND	PPBV	11	4.3
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1034GS002NS	4/12/2004 13:50	TO14DI	NS1	Trichloroethylene	ND	PPBV	11	4.2
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1035GS001NS	4/12/2004 14:45	TO14DI	NS1	Trichloroethylene	14 =	PPBV	11	4.2
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	5
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	6
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.2
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1035GS002NS	4/12/2004 14:50	TO14DI	NS1	Trichloroethylene	ND	PPBV	11	4.2
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	Tetrachloroethene	ND	PPBV	11	4.9
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	Chloroform	ND	PPBV	11	1.6
CP1035GS002FD	4/12/2004 14:50	TO14DI	FD1	Trichloroethylene	ND	PPBV	11	4.2
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1036GS001NS	4/12/2004 15:40	TO14DI	NS1	Trichloroethylene	17 =	PPBV	11	4.2
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1036GS002NS	4/12/2004 15:45	TO14DI	NS1	Trichloroethylene	13 =	PPBV	11	4.2
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1037GS001NS	4/12/2004 16:30	TO14DI	NS1	Trichloroethylene	24 =	PPBV	11	4.2
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	1,2-Dichloroethane	ND	PPBV	11	4.2
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	Tetrachloroethene	ND	PPBV	11	4.9
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	cis-1,2-Dichloroethene	ND	PPBV	11	5.9
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	Carbon tetrachloride	ND	PPBV	11	4.1
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	Chloroform	ND	PPBV	11	1.6
CP1037GS002NS	4/12/2004 16:35	TO14DI	NS1	Trichloroethylene	23 =	PPBV	11	4.2

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: Review of Responses to Comments, DDJC-Tracy Final 2004 ESD to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW Final 2004 ESD to Sitewide ROD
DATE 16 August 2004
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Comment No. 3:	
		(a) DDJC agrees to add duration language to address groundwater in a more specific manner. We understand that DDJC will not include groundwater in the general statement as indicated for the off-site groundwater plume that is being characterized. This ESD covers the land use controls for soil and groundwater on-site. Therefore, we believe the standard duration language, "Land Use Controls will be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure." is comprehensive and protective for soil and groundwater on-site. In Table 2-1, please add the above mentioned standard duration language to specifically address the portion of the groundwater plume that is beneath the depot.	(A) The duration language will be added as indicated. OU 1 groundwater (on-depot portion) will be added to Table 2-1.
		(b) The addition of references to construction workers and the vadose zone are superfluous. Please delete these references in the duration language, since it's less restrictive than the standard language.	(A) Text in the duration column regarding construction workers and vadose zone soils will be deleted as requested.
		(c) Please add a map/figure (e.g., Figure 2-2) showing boundaries of the land use controls for the portion of the groundwater plume on-site.	(A) The requested Figure 2-2 will be added.
		Comment No. 4:	
		Page 2-10, 2.3.0.4, please delete the phrase "... or action that might alter or negate the need for land use controls ..." from the proposed language in the DDJC's RTC. The second bullet should read as follows: "Notify the regulatory agencies 45 days in advance of any land use change. Section 2.3.2 discusses more fully procedures related to potential land use changes."	(A) The phrase in Paragraph 2.3.0.4 will be deleted as indicated. The text for the second bullet will read as indicated.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	Par. 2.3.0.4	Concurrence language should be included: "The DLA shall not modify or terminate Land Use Controls, implementation actions, or modify land use without approval by EPA and the State of California. The DLA shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs." The concurrence language would probably go well under 2.3.0.4., page 2-10.	(A) The recommended concurrence language will be inserted without modification as the third sentence under Paragraph 2.3.0.4.
2.	Page 2-1, 2.3.0.2	Page 2-1, 2.3.0.2., 2nd sentence, after the word "reuse" and before the word "including", please add "and unlimited exposure."	(A) The requested insertion will be made as indicated in the comment.
3.	Page 2-1, 2.3.0.2	Please add some duration language on Page 2-1, 2.3.0.2. It probably would fit well after the current second sentence. Insert: "Land Use Controls will be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure."	(N) DDJC agrees to add duration language and address groundwater in a more specific manner, but will not include groundwater in the general statement as indicated. DDJC cannot move forward with adding institutional controls to portions of the OU 1 plume that are outside of the depot boundary at this time. A change of this magnitude does not seem appropriate for an ESD and appears to require a ROD Amendment with significant public involvement. Any proposal for DOD/DLA to impose ICs/LUCs on Private, City, and County properties will be very contentious both with DLA/DOD and property owners. If DLA/DOD agreed to these controls, there would still be a significant delay to agree to controls with multiple property owners and affected agencies (City of Lathrop, Housing Development Property Owners, County of San Joaquin, Union Pacific, Lifetile Co., etc).
		ACTION CODES A – ACCEPTED/CONCUR D – ACTION DEFERRED	W – WITHDRAWN N – NON-CONCUR VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3. (cont'd)			Recognizing that some effort to address groundwater in the ESD is needed, DDJC will add notification requirements consistent with those for other sites with LUCs for OU 1 groundwater and document those requirements in the appendix to the Installation Master Plan (included as Appendix F in the ESD) for the portion of the groundwater plume that is beneath the depot. We have also attached a revised version of Table 2-1 with a new column on duration that addresses this issue on a site-specific basis for soil sites that potentially impact groundwater quality.
4.	Page 2-10, 2.3.0.4	Page 2-10, 2.3.0.4., 2nd bullet. Please add a forty-five (45) day deadline for prior notification of proposed land use changes and also delete the word "major" from the second line.	(A) The second bullet will be divided into two bullets to distinguish between land use changes and actions that disrupt the effectiveness of the remedy. The second bullet will read as follows: "*Notify the regulatory agencies 45 days in advance of any land use change or action that might alter or negate the need for land use controls. Section 2.3.2 discusses more fully procedures related to potential land use changes."* The new third bullet will read: "*Any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs, will be addressed by the DLA as soon as practicable, but in no case will the process be initiated later than 15 days after the DLA becomes aware of the breach*."
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
5.	Par. 2.3.2.4.	Please add the following language regarding notification regarding transfers and federal-to-federal transfers: "The DLA will provide notice to EPA and the State of California at least six (6) months prior to any transfer or sale of any property subject to ICs so that EPA and California can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for the facility to notify EPA and California at least six months prior to any transfer or sale, then the facility will notify EPA and California as soon as possible but no later than sixty (60) days prior to the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions above, the DLA further agrees to provide EPA and California with similar notice, within the same time frames, as to federal-to-federal transfer of property. The DLA shall provide a copy of executed deed or transfer assembly to EPA and California." This would probably fit best on page 2-13, 2.3.2. after the notification for proposed land use changes.	(A) The recommended text will be added as a new Paragraph 2.3.2.5 following Paragraph 2.3.2.4.
6.	Par. 2.3.2.8.	There should also be some additional transfer language (perhaps again somewhere around 2.3.2.) on Deed Restrictions: "Each transfer of fee title from the United States will include a CERCLA 120(h)(3) covenant which will have a description of the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the performance measure goals and objectives.	(A) The recommended text will be inserted following Paragraph 2.3.2.9 (new Paragraph 2.3.2.10). [No Item a was included in the comment, so we will delete the Item b and c headings.] We will insert the following sentence as the third sentence in Paragraph 2.3.2.11 (currently Paragraph 2.3.2.9): *"Additional costs (e.g., regulatory oversight) may be incurred by the transferee as determined during the transfer process."*

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
6. (cont'd)		The environmental restrictions are included in a section of the CERCLA 120(h)(3) covenant that the United States is required to include in the deed for any property that has had hazardous substances stored for one year or more, known to have been released or disposed of on the property. Each deed will also contain a reservation of access to the property for the DLA, USEPA, and California, and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the DLA Installation Restoration Program ("IRP") and the Federal Facility Agreement ("FFA"). The deed will contain appropriate provisions to ensure that the restrictions continue to run with the land and are enforceable by the DLA." b. "Lease Restrictions: " During the time between the adoption of this ESD and deeding of the property, equivalent restrictions are being implemented by lease terms, which are no less restrictive than the use restrictions and controls described above, in this ESD. These lease terms shall remain in place until the property is transferred by deed, at which time they will be superseded by the institutional controls described in this ESD." c. "Notice: "Concurrent with the transfer of fee title from the DLA to transferee, information regarding the environmental use restrictions and controls will be communicated in writing to the property owners and to appropriate state and local agencies to ensure such agencies can factor such conditions into their oversight and decision-making activities regarding the property." ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
7.	Page 2-10, 2.3.0.4.	Page 2-10, 2.3.0.4, second bullet, includes language regarding notification of interference with LUCs. A deadline for the notification and a commitment to address any breach should be included. "Any activity that is inconsistent with the IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs will be addressed by the DLA as soon as practicable, but in no case will the process be initiated later than ten (10) days after the DLA becomes aware of the breach." "The DLA will notify EPA and California as soon a practicable but no longer than ten (10) days after discovery of any activity that is inconsistent with the IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the ICs. The DLA will notify EPA and California regarding how the DLA has addressed or will address the breach within ten (10) days of sending EPA and California notification of the breach."	(N) As indicated in our response to Comment 4, this will be addressed in the third bullet under Paragraph 2.3.0.4. DDJC proposes an allowance of 15 days for corrective action. The text will read as follows: "*Any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls, will be addressed by the DLA as soon as practicable, but in no case will the process be initiated later than 15 days after the DLA becomes aware of the breach*." (N) Again, a 15-day allowance for notification is required. A new fourth bullet under Paragraph 2.3.0.4 will be inserted in the text and will read as follows: *"The DLA will notify U.S. EPA and California as soon as practicable, but no later than 15 days after discovery of any activity that is inconsistent with the institutional control objectives or use restrictions, or any other action that may interfere with the effectiveness of the institutional controls. The DLA will notify U.S. EPA and California regarding how the DLA has addressed or will address the breach within 15 days of sending U.S. EPA and California notification of the breach."*

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: DDJC-Tracy Final Explanation of Significant Differences to the Sitewide Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Final 2004 ESD to the Sitewide ROD
■ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	25 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA, John Chesnutt/Xuan-Mai Tran
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
8.		The IC objectives are not entirely clear. Table 2-1 and Appendix F state "Health risk under residential use scenario". Please change this to state that the objective is to "prohibit residential, day care, play area, or school use". Table 2-1 and Appendix F also state "Health risk to construction workers" and "Potential threat to GW quality." The meaning is not clear what activities should be restricted? Please reword and clarify.	(A) The recommended change will be made regarding IC objectives to "prohibit residential, day care, play area, or school use." Health risk to construction workers will be changed to "*Prevent unprotected exposure of construction workers to contaminated soil"* and potential threat to GW quality will be changed to *"Maintain existing cover to minimize infiltration of runoff that could encourage contaminant migration from the vadose zone."*

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments (submittted June 2, 2004 electronically) on the Draft ESD to the Site-Wide Comprehensive ROD, DDJC-Tracy Site, Tracy, California, April 2004

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	3 June 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		The U.S. Environmental Protection Agency (EPA) Region 9 has received the Response to Comments (submitted June 2, 2004 electronically) on the Draft Final Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision, Defense Distribution Depot San Joaquin (DDJC) Tracy Site, Tracy, California, dated April 1, 2004. It appears that the one remaining EPA's review comment from May 26, 2004 has been addressed. Therefore, we have no further comments on the Draft Final ESD. However, as mentioned in EPA's May 26, 2004 review letter, it should be noted that the Response to Comments (RTC) table was issued after the submittal of the Draft Final ESD document. Some of the RTCs include language that explains that the text will be modified accordingly. Therefore, the upcoming Final ESD will need to be reviewed along with the RTC table included in the Final ESD to verify incorporation of the requested modifications. ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	A) Comment noted.

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: DraftFinal Explanation of Significant Differences to the site-Wide Comprehensive ROD, DDJC-Tracy

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	26 May 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mail Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		**General Comment** **Response to New General Comment 2:** The response states that the comparison between DDT and DDX will be retained. This is acceptable, however further clarification is requested to show that the residual DDT does pose an unacceptable health risk. Table 4-3, Page 4-5 under Risk to Human Health from DDT states that 47 micrograms per kilogram (ug/kg) is the maximum residual DDT left in place. It then discusses the Record of Decision (ROD) risk-based concentration for DDX. A direct comparison between the DDT and DDX cannot be made. It would be helpful to the reader if the 47 ug/kg of DDT was presented with its associated risk assessment (a cancer risk of 1.6×10^{-9} and a hazard quotient of 6.5×10^{-4}), as was done in the text on Page 4-11, Section 4.3.6. Please consider revising the table to compare the DDT concentration left in place to the risk associated with DDT, as was presented in the text.	A) The Risk to Human Health entry for DDT in Table 4-3, Page 4-5 will be modified as follows: The maximum residual soil concentration is 47 µg/kg. Specifically for DDT, the corresponding estimated cancer risk is 1.6×10^{-9} and the HQ is 6.5×10^{-4}. It should be noted that the ROD identified a risk-based cleanup standard of 30,000 µg/kg total DDX instead of a risk-based standard specific to DDT to protect potential construction workers. The highest residual concentration for total DDX is 89 µg/kg. Under the residential scenario (future child), the residual concentration for total DDX represents a cancer risk of approximately 5.8×10^{-8} and a hazard quotient of 1.7×10^{-4}. The residual concentration is also below the U.S. EPA Region 9 PRG of 1,700 µg/kg for residential use. Therefore, exposure to DDT is not anticipated to pose unacceptable health risks under any future land use scenario.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	4 May 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		General Comments	
1.		**Response to General Comment 4 (dated February 5, 2004):** While the response provides the necessary and requested information regarding the human health risks from contamination left in place, there appear to be two revised cleanup standards proposed for DDT. The response and the text in Section 4.3.6 states that "raising the cleanup standard for 4,4'-DDT to 47 micrograms per kilogram (ug/kg) (which represents an estimate cancer risk of 1.6×10^{-9} and an HQ of 6.5×10^{-4}) is protective of human health." However, the text in Section 4.2.2.3 states that the cleanup standard should be raised to 103 ug/kg based on DI WET results. It appears that both 47 ug/kg and 103 ug/kg are being proposed as the revised cleanup standards for DDT. DI WET results support a cleanup standard of 103 ug/kg, but the human health risk evaluation shows an acceptable risk to DDT from a concentration of 47 ug/kg (the highest concentration left in place). Please clarify which concentration is the correct proposed cleanup standard. If 103 ug/kg is correct, then the human health risk discussion should be updated to show that 103 ug/kg is protective of human health.	(A) The reference to 103 µg/kg as a cleanup standard will be deleted. The text will instead indicate that any cleanup standard less than 102 µg/kg is protective of groundwater quality. The correct cleanup standard is 47 µg/kg.
2.		**Response to General Comment 4 (dated March 3, 2004 on the SWMU 8 Data Validation):** The comment requested that the statement "It was noted that sample S0146-SO-323 was requested for validation. However, this sample was not analyzed by the laboratory" be removed or clarified. A response to this comment was not included in the RTC table. Please provide a response that includes the section number or page number where this statement was removed or clarified.	(A) The CD in Appendix E contains text that has been manually crossed out, dated, and initialed on the first page of the Level IV Data Validation Reports and Worksheets bookmark on the CD. The top of this page is labeled "Data Validation Report Carbamate and Urea Pesticides."

ACTION CODES W – WITHDRAWN
A – ACCEPTED/CONCUR N – NON-CONCUR
D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	4 May 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		**Specific Comment** **Response to Specific Comment 5 (dated February 5, 2004):** The response states that the excavation at SWMU 8 was backfilled due to the unlikelihood of meeting the pesticide cleanup standards because the edge of the low level detections of pesticides in areal soil was not found. Section 4.1.2.5 of the ESD states that the excavation at SWMU 8 was more than double the design volume and was discontinued because funding was exhausted. However, inadequate funding is not a sufficient basis for not meeting ROD cleanup standards. A statement should be added to Section 4.1.2.5. that, as explained in Table 4-3, remaining levels of Dieldrin and DDT in soil are well below ROD cleanup standards, and do not pose an unacceptable risk to human health or the environment. Table 4-3 itself should be revised as follows:	(A) Additional explanation regarding risk to human health and the environment will be added as suggested to support the decision to stop excavation.
		a) The language in the box explaining the SESOIL/VLEACH Modeling Results for Dieldrin should be modified as follows: "Modeling results indicate the maximum concentration of Dieldrin in groundwater ~~is less than~~ *will not exceed* the beneficial use limit (0.002 ug/L), *which is less than the aquifer cleanup standard of 0.5 ug/L*."	(A) The text will be revised as indicated.
		ACTION CODES A – ACCEPTED/CONCUR D – ACTION DEFERRED W – WITHDRAWN N – NON-CONCUR VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE 4 May 2004
NAME Xuan-Mai Tran, U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1. (cont'd)		b) The box for DI WET Analysis performed for DDT should be modified to include the fact that there is no aquifer cleanup standard for DDT and to provide information about the likely concentration of DDT in groundwater from soil contaminated with 47 mg/kg of DDT (the actual maximum remaining concentration). Finally, unless the DLA can demonstrate that the DI WET test can be interpreted to mean that the likely result of a DI WET test on soil containing 47 mg/kg would be below beneficial use limits, nothing in the ESD appears to justify the conclusion in Table 4-3 that residual DDT contamination is unlikely to impact groundwater quality. The text in Section 4.1.2.5 does not say anything about this, and Table 4-3 only says that SESOIL and VLEACH simulations suggest that DDT won't reach groundwater for 50 to 100 years. Again, it is not sufficient to demonstrate that the remedy is protective of groundwater.	(A) The absence of an aquifer cleanup standard for DDT will be noted. It will be clarified that the beneficial use limit for DDT is 0.1 µg/L (corresponding to a soil concentration of 102 µg/kg in DI WET analysis). This DI WET result demonstrates that a cleanup standard of 47 µg/kg will not result in groundwater concentrations exceeding the beneficial use limit. This will be addressed in Section 4.2.2.3 instead of Section 4.1.2.5.
		New General Comments	
1.		It appears that all rounds of responses to comments on the Draft ESD that occurred between the submission of the Draft ESD and Draft Final ESD are not included in the RTC table at the end of this document. EPA's comments dated March 3, 2004, which were submitted electronically, were missing from the RTC table. Documentation is an important part of the CERCLA process and it is important that decisions agreed upon by DDJC and the regulators can be followed and are documented for the Administrative Record. Please include all RTCs in the next version of the ESD.	(A) It appears that a single comment was received from U.S. EPA on 3 March. The comment was unnumbered in the text of the email, so it is unclear where the comment begins or ends. We will provide a comment response for the portion of the email that appears to provide a request for a response.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	4 May 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
2.		The decision logic used for the SWMU 8 proposed cleanup standard for DDT is unclear. It appears that two cleanup levels are proposed, 47 ug/kg based on protection of human health and 103 ug/kg based on DI WET results. In addition, the comparison between DDT and DDX is confusing. For example, Table 4-3 on Page 4-5 for DDT states that the residual soil concentration is 47 ug/kg and then proceeds to use the DDX risk-based cleanup standard of 30,000 ug/kg as justification for protection of human health. The text in Section 4.3.6 on Page 4-11 uses an exposure point concentration of 800 ug/kg for DDT as the justification for protection of human health. Please clarify the text and table to clearly state what the new proposed cleanup standards are and clearly outline the decision process and rationale used to revise the standards. In addition, it would be helpful to the reader if the new cleanup standards for dieldrin and DDT were stated in text and/or summarized in tabular form in the conclusion portions of this document. Please state the new cleanup standard concentrations in the conclusion portion of Table 4-3, and in the text in Sections 4.2.4 and 4.3.9.	(A) It will be clarified that the DDT cleanup standard is 47 µg/kg. (N) The comparison between DDT and DDX will be retained because it was used in both the baseline risk assessment and the ROD. The ROD provided a risk-based cleanup level for total DDX instead of individual risk-based cleanup levels for DDT, DDE, and DDD. (A)The text in paragraph 4.3.6 will be clarified to indicate that 800 µg/kg is not a cleanup standard. The revised cleanup standards will be added to the conclusions section. It will also be added to Table 4-3 and Sections 4.2.4 and 4.3.9.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE 4 May 2004
NAME Xuan-Mai Tran, U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		**New Specific Comments** **Response to Specific Comment 7, Section 5.2.1 (dated December 8, 2003):** The response to comment omits the language from Section 5.2.3 of the ESD which states that "Residual contamination includes TPH under Building 10 and TCE below Building 10 and in the vicinity of 5th Street between Buildings 10 and 26." This will help to clarify why DDJC proposes to collect soil gas samples between buildings 10 and 26 to better determine the concentrations of residual TCE at SWMU 20. Please add the language from Section 5.2.3 to the response.	(A) This clarification will be made to U.S. EPA Specific Comment 7 in the 8 December 2003 comments on the draft ESD. The revised comment is printed below. The SVE system was included in the selected remedy to satisfy the first remedial action objective in Paragraph 7.5.5.1 of the ROD (prevent the migration of TCE, ethylbenzene, and xylenes). Section 9.7.5.7 in the ROD targets TCE contamination as the focus for the SVE effort. A soil gas cleanup standard established by the RWQCB is also provided for the SVE effort (see paragraph 9.7.5.8 of the ROD). Bioventing is not applicable to chlorinated VOC contamination. Although residual TPH contamination is present at the site above the original ROD cleanup standards, most of this contamination has been excavated. The residual contamination is confined to the soil underneath Building 10. The new LUCs proposed in the ESD would address this contamination. The TCE to be addressed by the SVE system is independent of the TPH issue. **Residual contamination includes TPH under Building 10 and TCE below Building 10 and in the vicinity of 5th Street between Buildings 10 and 26**. DDJC proposes to collect soil gas samples between Buildings 10 and 26 to better determine the (continued)

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

Project: Review of the Response to Comments on the Draft Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision and Review of Draft Final ESD, DDJC-Tracy, April 2004

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	4 May 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.	(cont'd)		concentrations of residual TCE at SWMU 20. It will then be possible to assess if additional SVE is the most cost effective approach for the site (unlikely because historical groundwater monitoring results indicate that TCE concentrations are already decreasing in the vicinity of SWMU 20).
2.		**Section 6.2.4, Page 6-5:** The text states that "The grass area is inaccessible to grading equipment, and a warning sign will be installed to discourage dust-generating activities" in the area of DSERTS 67 that wasn't covered with gravel, and that this will protect human health, but it is unclear whether the uncovered area presents a threat to the environment. Please revise the section to include a statement about protection of the environment.	(A) A statement regarding environmental protection will be added to Section 6.2.4 as indicated.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: Response to 5 February U.S. EPA Comments, Draft DDJC-Tracy ESD to the Tracy Comprehensive ROD

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	3 March 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	Xuan-Mai Tran, U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		Response to General Comment 4 on Appendix E: This response appears to address the comment. However, the cover page of the Data Validation Report (DVR) for sample delivery group (SDG) 02-5942 Method 8081A, pesticides, still contains the statement, "It was noted that sample S0146-SO-323 was requested for validation. However, this sample was not analyzed by the laboratory." Please ensure that this statement is removed from the next version of the DVR or clarified to be consistent with the response.	(A) The CD in Appendix E contains text that has been manually crossed out, dated, and initialed on the first page of the Level IV Data Validation Reports and Worksheets bookmark on the CD. The top of this page is labeled "Data Validation Report Carbamate and Urea Pesticides."

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT& UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW: Response to 5 February Comments
DATE: February 2004
NAME: U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		General Comments:	
1.		**Response to General Comment 4**: The response does not completely address the comment. It is unclear why preliminary remediation goals (PRGs) are used as a justification for the protection of human health when the use of PRGs for determining the protection of human health is inconsistent with ROD standards. The original baseline risk assessment (BRA) calculated a carcinogenic risk for Solid Waste Management Unit (SWMU) 8 between 1 x 10^{-4} and 1 x10^{-6} and a hazard quotient greater than 1 for the construction worker scenario. In addition, the threat to groundwater quality was also used in determining that remediation was necessary at this site. While the results of the groundwater modeling and DI-WET analysis after remediation showed that the threat to groundwater quality has been removed and will potentially be supported by future groundwater monitoring, the protection of human health with contamination left in place has not been clearly demonstrated. Please provide an explanation consistent with ROD standards on why the contamination left in place does not pose a threat to human health and how the uncertainty in the amount of contamination left in place effects the human health risk evaluation. Alternatively, add to the ESD that an institutional control of "no digging" will be required in the northern portion of SWMU 8 due to the uncertainty in the amount of residual contamination left in place.	(A) Based on the summary of the baseline risk assessment for SWMU 8 presented in Subsection 6.3.7.5 of the *Comprehensive Remedial Investigation /Feasibility Study*, Dieldrin, DDD, and DDE are present at higher concentrations at SWMU 8 and " . . . could pose a cancer risk between 1 x 10^{-6} and 1 x 10^{-4} for a construction worker." Chlordane, benzo(a)pyrene and beryllium, the major contributors to the cancer risk at exposure unit (EU) 10, are present in lower concentrations at SWMU 8 " . . . and are not expected to pose a cancer risk in excess of 1 x 10^{-6} at SWMU 8." Manganese, with a hazard quotient (HQ) of 7.7, is the principal contributor (89%) to the hazard index (HI) of 9 at EU 10. However, the manganese concentrations detected in EU 10 and SWMU 8 soil samples " . . . are similar to manganese concentrations in soil throughout the western United States (Shacklette and Boerngen, 1984)." Manganese, therefore, was not considered to pose a public health threat at SWMU 8. Consequently, Dieldrin and total 4,4′-DDT or DDX (including 4,4′-DDE and 4,4′-DDD, contaminants or breakdown products of commercial 4,4′-DDT preparations) were the only contaminants of potential concern (COPCs) identified for SWMU 8 for which risk-based cleanup standards were calculated and included in Table 10-11 of the ROD.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS

PROJECT Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒	SITE DEV & GEO	☐	MECHANICAL	☐	SAFETY	☐	SYSTEMS ENG
☐	ENVIR PROT& UTIL	☐	MFG TECHNOLOGY	☐	ADV TECH	☐	VALUE ENG
☐	ARCHITECTURAL	☐	ELECTRICAL	☐	ESTIMATING	☐	OTHER
☐	STRUCTURAL	☐	INST & CONTROLS	☐	SPECIFICATIONS		

REVIEW Response to 5 February Comments
DATE February 2004
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1. (cont'd			According to Table C-38 in the baseline risk assessment, with an exposure point concentration of 34 µg/kg for Dieldrin, the increased cancer risk is 5.4×10^{-8} and the HQ is 4.7×10^{-3} for EU 10 (includes SWMU 8) using the construction worker scenario. According to Paragraph 5.2.9.4 of the baseline risk assessment, for the construction worker scenario, " . . . potential risks from Dieldrin at SWMU 8 were obscured by averaging over the entire Exposure Unit." Therefore, the ROD identified a risk-based concentration (RBC) of 600 µg/kg Dieldrin in Table 10-11 for SWMU 8 to ensure the increased cancer risk will not exceed 1×10^{-6} for the construction worker scenario. The remedial action at SWMU 8 reduced the maximum concentration of Dieldrin at SWMU 8 from 2,640 µg/kg to 4 µg/kg. This concentration is over two orders of magnitude below the RBC in Table 10-11 and well below the exposure point concentration used to characterize the risk throughout EU 10 in the baseline risk assessment that suggested Dieldrin was not a significant threat to human health in this exposure unit. Therefore, raising the cleanup standard for Dieldrin to 4 µg/kg (representing an estimated cancer risk of 6.1×10^{-9} and an HQ of 5.5×10^{-4}) is protective of human health.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1. (cont'd)			Table C-38 in the risk assessment also shows that for 4,4′-DDT, an exposure point concentration of 800 µg/kg corresponds to an increased cancer risk of 2.7×10^{-8} and an HQ of 1.1×10^{-2} for the construction worker scenario. Table 10-11 of the ROD identifies an RBC of 30,000 µg/kg of total DDX to reduce the increased cancer risk to 1×10^{-6}. The highest residual concentration of total DDX is 89.4 µg/kg at SSO146 (which represents an estimated cancer risk of 3.0×10^{-9}). Furthermore, the highest concentration of 4,4′-DDT is 47 µg/kg, well below the exposure point concentration used in Table C-38 of the risk assessment that showed no significant risk throughout the exposure unit under the construction worker scenario. Therefore, raising the cleanup standard for 4,4′-DDT to 47 µg/kg (which represents an estimated cancer risk of 1.6×10^{-9} and an HQ of 6.5×10^{-4}) is protective of human health. In summary, both the risk assessment and the ROD support the conclusion that the proposed modifications to the cleanup standards for Dieldrin and 4,4′-DDT will not threaten human health. Paragraph 6.1.1.1 in the baseline risk assessment concluded that most of the depot, including SWMU 8, does not provide any significant habitat for wildlife. Therefore, the remedy at SWMU 8 is protective of human health and the environment and institutional controls restricting digging are not warranted.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW: Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE: February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME: U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Specific Comments:	
1.		**Response to Specific Comment 2:** The response does not completely address the comment because it does not explain why PRGs are being used as a justification for protection of human health. A discussion of the current risk at the site related to the original BRA should be included in the text, including how the unknown amount of contamination left in place affects the uncertainties in the risk assessment. Please include a discussion of the current carcinogenic risk and hazard quotient compared to the original BRA, all uncertainties associated with the risk assessment, how the results of the current risk assessment support no land use controls (LUCs) at SWMU 8, and remove all references to PRGs supporting protection of human health.	(A) See response to General Comment 1 above. The rationale in the response to General Comment 1 will replace the emphasis on PRGs. Because the ROD included RBCs protective of human health that have been achieved by the remedial action, a full update to the risk assessment does not appear warranted. However, because the ROD includes the PRGs (see Table 10-11) as a reference value during the development of cleanup standards, it is recommended that the references to PRGs not be completely eliminated from the ESD.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
2.		**Response to Specific Comment 5:** The response states that the need to backfill SWMU 8 was discussed with the Remedial Project Managers (RPMs) prior to beginning backfilling. However, based on the DDJC-Tracy RPM Meeting Minutes from November 19, 2002, the RPMs only agreed to the backfilling of the "bottom of the excavation to prevent rain accumulation". The request made by Shaw at the time was to backfill the deepest areas of the excavation, from 14 to 20 feet below ground surface (bgs). The RPMs did not agree to completely backfill the entire excavation, which is what occurred. In addition, it was also stated that the plan was "to continue to excavate evidence of contamination on the benches". This did not occur, and contamination above ROD cleanup standards was left in place at 5 to 10 feet bgs. Please clarify the text on what decisions were agreed upon, why the excavation was completely backfilled, and why continued excavation of the benches did not occur.	(N) After the RPM meeting of 19 November 2002, a visit to the SWMU 8 excavation site was held with the regulatory agency representatives. During the visit, it was agreed that the excavation had grown significantly from that directed in the ROD. The remedial contractor was performing additional overexcavation and additional soil confirmation sampling; however, it was inferred at the time that there was apparently no end to low level detections of pesticides in areal soil and the budget for excavation, transportation, and disposal had been expended. Another round of overexcavation and confirmation sampling on 21 November 2002, resulted in continued low level detections of pesticides above cleanup standards. Further excavation was stopped, and the site was backfilled in advance of winter rains and due to the apparent unlikelihood of meeting the pesticide cleanup standards at the site. Further discussion of this issue will be moot once the site cleanup standards are revised.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.		**Response to Specific Comment 6:** The response does not address the comment. It is unclear why PRGs are being used instead of a BRA for the protection of human health. The BRA presented in the ROD calculated a carcinogenic risk and hazard index for SWMU 8, and also used the threat to groundwater quality as justification for remediation. While it has been shown through groundwater modeling and DI-WET analysis that the remedial action at SWMU 8 is most likely protective of groundwater quality, potentially supported by future groundwater monitoring results, the protection of human health has not been sufficiently documented. The use of PRGs to show protection of human health is inconsistent with ROD standards. Please provide a new human health risk evaluation with a discussion of how the uncertainties effect the results. Alternatively, add to the text that an institutional control of "no digging" in the northern portion of the site will be required at SWMU 8 due to the uncertainty in the amount and concentrations of contamination left in place.	(A) The rationale provided in our response to Item 1 under General Comments will be used to bolster our rationale consistent with ROD standards. However, Table 10-11 in the ROD cites PRGs and deleting them entirely would result in a failure to completely "close the loop" with the ROD.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW: Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE: February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME: U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Review of SWMU 8 DQ Validation Documentation, Supplemental Appendix E of the Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, November 2003 **General Comments:**	
1.		**General Comment 4:** The response appears to partially address the comment. It appears from Table 5-1, Final Confirmation Sample Results, that sample SS0146-SO-323 was analyzed for pesticides. However, the data validation report (DVR) for pesticides sample delivery group (SDG) 02-05942, states that sample SS0146-SO-323 was not analyzed by the laboratory. Therefore, it is still unclear if this sample was validated as part of SDG 02-5942. This is critical because sample SS0146-SO-323 was the sample with the maximum contamination left in place at SWMU 8. Please revise the DVR to address this apparent discrepancy.	(A) During excavation, samples were initially analyzed for pesticides (considered the remediation driver) with determination of the remaining fractions put on hold pending the pesticide results. The data validation reports (DVRs) referred to in this comment pertain to those remaining fractions. Sample SS0146-SO-323 was collected and analyzed for pesticides only. The pesticide results were validated as part of submission 02-05942. The sample was collected during overexcavation of a step-out from previous sample location SS0125-SO-299. Analyses of previous sample location SS0125-SO-299 resulted in pesticide detections above cleanup standards. Further analyses of that sample was halted and overexcavation was performed at location SS0125 as directed by the RPM team. Sample SS0146-SO-323 was collected after overexcavation at this location. Pesticide concentrations remained greater than cleanup standards in this sample. At that point the limits of the excavation extended beyond the ROD-estimated limits, the remediation budget limit had been reached, and no further analyses of the sample or further overexcavation in the area was performed.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW: Response to 5 February Comments
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE: February 2004
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME: U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Specific Comments:	
1.		**Specific Comment 3, DVR SDG 02-5623, Method SW8270C, Section IV:** The response does not appear to address the comment. It is understood that if a continuing calibration verification (CCV) has a percent difference (%D) above + 20 % that only positive results will be qualified. However, the CCVs from 10/29/02 and 12/2/02 have a %D of +26% and +21%, but the qualifiers are listed as "J/UJ" indicating positive results and non-detected results will be qualified. Please revise the DVR to ensure the correct qualifiers are used for CCV exceedances on 10/29/02 and 12/2/02.	(A) The reviewer is correct. Section IV of the DVR for calibration dates 10/29/02 and 12/2/02 incorrectly indicates that the data were to be flagged J/UJ rather than J/None. The data have been reviewed and flagged as appropriate in a revised DQA.
2.		**Specific Comment 9, DVR SDG 02-6075, Carbamate and Urea Pesticides by Method SW8321:** The response appears to address the comment. However, it is unclear why the sampling and analysis plan (SAP) from August 1999 is different from the QAPP from February 2001. If it was known in 1999 that only linuron and methiocarb were needed for pesticides, it is unclear why the QAPP specifies a longer list of compounds. Please clarify why the SAP differs from the QAPP in the compounds listed for pesticide analysis.	(N) The sampling and analysis plan (SAP) was a project-specific plan to provide guidance for sampling and analyses of only those compounds presented in the ROD relevant to remediation of SWMU 8. The quality assurance project plan (QAPP) is a program-level document which provides general guidance for sampling and analyses at all of the DDJC-Sharpe and DDJC-Tracy sites. Various sites may, as does SWMU 8, require a subset of the QAPP-specified analytes. During SWMU 8 remediation, the project-specific SAP was the appropriate guidance document related to target analytes.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U.S. ARMY ENGINEER SACRAMENTO DISTRICT CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		General Comments:	
1.		U.S. EPA concurs with the decision to document changes in cleanup levels and remedies at Solid Waste Management Units (SWMUs) 6, 8, and 20, and DSERTS 67 in this Explanation of Significant Differences (ESD) to the Site-Wide Comprehensive Record of Decision (ROD) for DDJC-Tracy.	(A) No response required.
2.		The recommended revised cleanup standard for dieldrin at SWMU 6 is 161 micrograms per kilogram (ug/kg), but it is not clear that this cleanup level will be protective of human health and the environment. The ROD stated that the Baseline Risk Assessment (BRA) showed no potential human health or ecological risks for SWMU 6. However, the BRA was based on a maximum dieldrin concentration of 24.9 ug/kg, well below the 110 ug/kg industrial preliminary remediation goal (PRG). The new proposed cleanup standard is greater than the industrial PRG and greater than the maximum concentration used in the BRA for SWMU 6. Please explain how the new cleanup standard of 161 ug/kg is protective of human health and the environment.	(A) The Explanation of Significant Differences did not recommend a cleanup standard of 161 µg/kg for Dieldrin (note Section 3.3.2 in the ESD). Soil is left in place at SWMU 6 with a concentration that exceeds the industrial PRG (110 µg/kg) and may pose a risk to future construction workers. Rather than changing the cleanup standard and requiring no further action, the ESD instead amends the ROD remedy with land use controls that were not previously required at SWMU 6 (see Section 3.3.2). The combination of excavation performed to date and new land use controls is protective of human health and the environment.
3.		The Response to Comments on the Draft DDJC-Tracy Post ROD Remedial Action Status Review for DSERTS 67 and SWMUs 6 and 8, dated August 15, 2003, stated that the validated data for SWMU 8 will be included as an appendix to this ESD, but there was no appendix of SWMU 8 data in the Draft ESD. It was agreed at the November 5, 2003 Remedial Project Managers meeting that the data would be provided as an Addendum to the ESD as soon as possible, since the data were used as the basis for modeling that supports the proposed cleanup levels. The validated data for SWMU 8 as Appendix E to this ESD was provided for review. The review comments on Appendix E were also included in this review. Please include the data in future versions of the ESD. ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	(A) Appendix E will be included with all future ESD submittals.

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
4.		The recommendation that land use controls (LUCs) are not necessary for SWMU 8 seems premature at this time and requires further justification. Considering the size of the original source area and the wide range of contaminants of concern, it would seem more prudent to evaluate the groundwater monitoring data collected from wells around the site for a few more years prior to removing land use controls, especially considering that the Defense Logistics Agency (DLA) no longer proposes to perform any soil gas sampling and the extent of contamination was not fully defined during excavation. The maximum concentrations of DDT and dieldrin left in place were found in sample SS0146-SO-323, which was a sidewall sample at 7 feet below ground surface (bgs) from the northwestern portion of the excavation. This allows for considerable uncertainty in determining how much contamination was left in place. Therefore, LUCs should be recommended for SWMU 8, or further justification provided as to how the revised remedy is protective of human health and the environment, given the level of uncertainty at SWMU 8.	(N) The ROD already requires groundwater monitoring at SWMU 8 (note Section 4.2.4.2 of the ESD). No additional monitoring appears necessary. Land use controls would not be effective for protecting the environment at SWMU 8 because there is no existing impervious cover at the site. LUCs are used at other sites where they are effective for controlling exposure pathways for human and ecologic receptors. They are also used at sites to ensure maintenance of existing impervious surfaces. However, for SWMU 8, adding LUCs would not protect groundwater because there is no existing structure or pavement to provide an impervious barrier. Because the concentrations left in place are substantially below residential PRGs (the residential PRGs for DDT and dieldrin are 1,700 µg/kg and 30 µg/kg, respectively, and the concentrations at SSO146-SO-323 are 47 µg/kg and 4 µg/kg, respectively), LUCs are not needed to control exposure pathways. LUCs do not address the remedial objectives at SWMU 8 and are not recommended for this site.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1.		**Specific Comments:** **Section 2.2.1, Page 2-1:** The text presents three bullets that explain the basis for changes and clarifications needed for the LUCs. However, it is unclear why SWMU 8 and DSERTS 67 are not discussed here. Please provide an explanation why these two sites are not included in the discussion, or add them to the text.	(A) DSERTS 67 is included in Table 2-1 on Page 2-7. LUCs are appropriate for this location because they can be used to control the potential exposure pathway to construction workers and to document the requirements in the event of a change of land use. Soil concentrations left in place at SWMU 8 are below residential PRGs. No exposure pathways are apparent, with the exception of a potential threat to groundwater quality (see Section 4.2.2 of the ESD for a discussion of limited potential for groundwater impacts at this site). The potential threat to groundwater quality is already addressed in the ROD requirement for groundwater monitoring. LUCs would not provide any additional protection of human health or the environment at this site.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
2.		**Section 2.3.0.2, Page 2-1:** The text states that LUCs are required for contaminated soil left in place, but does not include SWMU 8 in the list of sites. Please add SWMU 8 to the discussion since uncharacterized contamination remains at the site.	(N) As noted in Section 2.3.0.2, LUCs are appropriate for sites with concentrations that do not allow unrestricted reuse. Numerous confirmation soil samples were collected at SWMU 8, and all residual concentrations were below residential PRGs. The only lingering question regarding "uncharacterized contamination" at SWMU 8 is the potential presence of chlorinated VOCs. Paragraph 9.7.4.6 of the ROD required soil gas sampling at SWMU 8. The ESD proposes deleting this sampling requirement because of the overexcavation of soil at SWMU 8 and the results of the groundwater monitoring program since the ROD was signed. VOCs have not exceeded aquifer cleanup standards in the monitoring well samples collected downgradient from SWMU 8. There is no record of disposal of VOCs at SWMU 8. For these reasons it is appropriate for the RPMs to reconsider if soil gas sampling at SWMU 8 is still warranted.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	December 2003
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.		**Section 3.3.2, Page 3-7:** The following statements indicate that the DLA proposes to alter the soil cleanup standards for 2,4,5-T and Lindane at SWMU 6 as follows: "Based on the DI-WET result, the cleanup standard for 2,4,5-T is revised from 5 ug/kg to 13 ug/kg. The results from SESOIL and VLEACH modeling that indicate concentrations reaching groundwater would not exceed beneficial use limits support revision of the cleanup standard for Lindane from 1.7 ug/kg to 5 ug/kg." To support these revisions, more information needs to be included in this section. This information includes the following: (1) an indication if these revised cleanup standards will alter any of the land use controls for this site, (2) a more detailed discussion of how the DI-WET result was used (including supporting calculations) to justify raising the cleanup standard for 2,4,5-T, (3) a more detailed discussion of how the VLEACH modeling results were used to justify raising the cleanup standard for Lindane, (4) a discussion of the pros and cons of using different rationale (DI-WET vs modeling) to raise the cleanup standard depending on the compound being evaluated and (5) a detailed discussion of the uncertainties in the information provided.	(A) The comment requests additional information for the ESD. Responses to specific requests are as follows: (1) The ROD does not currently require any land use controls for SWMU 6. In accordance with Section 3.3.2, land use controls are being added for this site. The addition of LUCs is independent of the proposed changes to cleanup standards and instead is a result of the risk from Dieldrin. (2) No 2,4,5-T was detected in the DI-WET extract (see paragraph 3.2.2.1). Because 2,4,5-T was not detected in the extract, it was not initially included in the VLEACH modeling. The DI-WET results are analytical results and not calculated or modeled values. There are supporting calculations for Lindane because it was detected in the extract and, therefore, its transport was modeled. This will be clarified in the text. (3) The discussion of the VLEACH analysis for Lindane in Section 3.2.2.4 will be clarified. (4) A discussion of the use of models and DI-WET analysis will be added. In general, demonstrating that a chemical is not leached from the soil using the DI-WET analysis is the strongest evidence of no potential impact to groundwater. If the chemical does leach, then subsequent fate and transport modeling is required to determine its eventual impact on the aquifer. (5) A discussion of the uncertainties will be added.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.	(cont'd)	Also, there are two sections numbered "3.3.2". The second section should be Section 3.3.3., or the two combined. In the second Section 3.3.2, please include an explanation of the basis for and the threat to human health and the environment from raising the cleanup standards for 2,4,5-T and Lindane.	The paragraph numbering will be corrected as indicated in the comment. We will add a discussion (in a subsequent paragraph 3.3.3) assessing the impact to human health and the environment.
4.		**Section 4.0, SWMU 8:** This section proposes changes to the originally proposed remedy that need additional supporting information and rationale, including raising the DDT cleanup standard for soil from 7 ug/kg to 103 ug/kg and raising the Dieldrin cleanup standard from 2 ug/kg to 5 ug/kg. Similar to the comment on SWMU 6, the proposal to raise the cleanup standards for DDT and Dieldrin needs to include supporting calculations for the DI-WET results, more detailed rationale for the proposed changes, and an uncertainty discussion.	(A) The DDT and Dieldrin DI-WET results are not calculations. They are the analytical results from the DI-WET test procedure. Additional discussion of the rationale for the proposed changes and the uncertainties will be added.
5.		**Section 4.1.2.2, Page 4-2:** It is unclear why additional step-out excavations were not performed after the final round of sampling showed concentrations of contaminants exceeding cleanup standards. The Remedial Action Objective (RAO) for SWMU 8 based on the ROD was to "remove all known soil with contaminant concentrations above cleanup standards", which is therefore protective of human health and the environment. The text does not provide an explanation on why the excavation was backfilled prior to removing all known contamination. Please provide an explanation on why additional step-out excavations were not conducted and why the excavation was backfilled prior to defining the lateral extent of contamination.	(A) As indicated in Section 4.1.2.4, the excavation at SWMU 8 was approximately double the volume of the effort anticipated in the ROD. The available funding was exhausted. The need to backfill was discussed with the RPMs prior to beginning backfilling. This will be clarified in a new paragraph 4.1.2.5.
6.		**Section 4.2, Page 4-2:** There is no discussion of the remaining threat to human health from the pesticides left in the soil above ROD cleanup levels. Please add a new section to explain why it is protective of human health.	(N) Paragraph 4.2.4.1 notes that all residual contaminant concentrations are below U.S. EPA Region 9 PRGs for residential use. This supports the conclusion in this paragraph that the residual concentration does not pose a threat to human health.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
7.		**Section 5.2.1, Page 5-2:** The following statements are not entirely correct and should be reworded: "A Soil Vapor Extraction (SVE) well would preferentially draw vapor from the "looser" backfill material, rather than the native material originally targeted in the ROD. It should be noted that the only contaminant reported above ROD cleanup standards during final excavation confirmation sampling would not be remediated by SVE." First, the text needs to acknowledge that a sheet piling or other subsurface structure could be installed to reduce possible preferential flow from the fill material during SVE operation. Second, bioventing, at reduced flow rate compared to traditional SVE, might be effective in treating the total petroleum hydrocarbon (TPH) contaminated area without affecting the excavation area. Also, the text needs to acknowledge that a laboratory TPH measurement actually represents many petroleum hydrocarbons. Some of the petroleum hydrocarbons that are included in a TPH scan are volatile enough to be removed by SVE, others are not. Overall, the proposal to remove SVE from the proposed remedy does not include enough supporting rationale. This section needs to describe the nature and extent of contamination left in place, including a discussion of the uncertainties in the data set and explore the possibility of using bioventing instead of traditional SVE to address the TPH contamination. Bioventing could enhance bacterial activity in the site soils, potentially breaking down some of the longer chain hydrocarbons that cannot be removed by traditional SVE. ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	(A) The SVE system was included in the selected remedy to satisfy the first remedial action objective in Paragraph 7.5.5.1 of the ROD (prevent the migration of TCE, ethylbenzene, and xylenes). Section 9.7.5.7 in the ROD targets TCE contamination as the focus for the SVE effort. A soil gas cleanup standard established by the RWQCB is also provided for the SVE effort (see paragraph 9.7.5.8 of the ROD). Bioventing is not applicable to chlorinated VOC contamination. Although residual TPH contamination is present at the site above the original ROD cleanup standards, most of this contamination has been excavated. The residual contamination is confined to the soil underneath Building 10. The new LUCs proposed in the ESD would address this contamination. The TCE to be addressed by the SVE system is independent of the TPH issue. Residual contamination includes TPH under Building 10 and TCE below Building 10 and in the vicinity of 5th Street between Buildings 10 and 26. DDJC proposes to collect soil gas samples between Buildings 10 and 26 to better determine the concentrations of residual TCE at SWMU 20. It will then be possible to assess if additional SVE is the most cost effective approach for the site (unlikely because historical groundwater monitoring results indicate that TCE concentrations are already decreasing in the vicinity of SWMU 20).

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
8.		**Section 6.2.4, Page 6-2:** The text does not provide an explanation of why the grass area in the northwestern portion of DSERTS 67 was not covered with gravel. It appears that the majority of the site (approximately 88%) is covered, but does not explain why the remaining grass areas were not covered with the AB cover or gravel. Please provide an explanation in the text on when and why it was decided not to cover the grass areas.	(A) The remaining grass area was not covered–which was in accordance with the approved Remedial Action Plan (*Remedial Action Documents, Volume 1 of 2, Remedial Design Performance Specifications, SWMU 8 Large Excavation Site and Northern Depot Area [DSERTS 67] Cover Installation, DDJC-Tracy, Revision 1 [IT, 2001]*). Section 4.2.5 of the referenced final document stated that *the limits of the cover have been modified from those approximated in the ROD based on the DDCE [Design Data Collection Effort] results and existing site conditions (see Figure 3-2).* Section 6.2.4 of the ESD has been revised to include a reference to this remedial action design decision document.
		Minor Comments:	
1.		**Table 1-1, Page 1-9:** The table states that the Amendment to the Sitewide Comprehensive ROD is Final. However, the latest version is a Revised Draft Final, dated September 26, 2003. Please correct the table.	(A) The table will be corrected to reflect the most current status of the Amendment to the Sitewide Comprehensive ROD.
2.		**Figure 2-1, Page 2-9:** SWMU 8 is not shown on this figure. Please add the location of SWMU 8 to the figure.	(N) SWMU 8 is not included because we are not proposing LUCs for SWMU 8.
3.		**Section 4.2.2.2, Page 4-4:** The text refers the reader to Figure 4-2. Figure 4-2 is not included in this document and is not included in the list of figures at the beginning of the document. Please provide Figure 4-2 in the next version of this document or correct the reference.	(A) This statement should be a reference to Figure 4-1.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW	
☐ ENVIR PROT & UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE	December 2003
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME	U.S. EPA
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS			

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Review of SWMU 8 DQ Validation Documentation, Supplemental Appendix E of the Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, November 2003	
		General Comments:	
1.		It appears that the data quality assessment (DQA) does not discuss all of the samples analyzed for this project. For example, although Table 5-2, Summary of Samples Collected, lists samples as being tested for metals, the DQA does not discuss the metals results or the qualifiers listed in the metals data validation reports (DVRs). Also, not all samples listed on Table 5-2 appear in Table 5-1, Final Confirmation Sample Results, even though they were analyzed and underwent data verification/validation (e.g., SS-0098, SS-0099, etc). Please revise the DQA to provide a discussion on all samples involved in this project. Also, include all of the samples analyzed in Table 5-1, or explain why certain samples are missing from this table.	(N) The samples listed in Table 5-1 represent soil that contains at least one target analyte reported above the method detection limit. Table 5-1 contains only those samples used to represent final confirmation sampling after remedial over-excavation. Table 5-2 is an inventory of all confirmation and waste characterization samples collected. The discussion of qualified data addresses qualifiers associated with results from confirmation samples only. Metals analyses were performed for waste characterization.
2.		Section 5.4.1 of the DQA appears to indicate that sample compounds that exceed QC criteria were qualified as estimated (UJ). However, it is unclear if positive results were also qualified as "UJ" or if no positive results were reported. Please revise Appendix E to clarify how both positive and non-detected sample results will be qualified due to QC exceedances.	(N) Section 5.4.1 states that data were qualified as estimated when QC requirements were not met. This statement applies to both positive results and quantitation limits. Where appropriate, non-positive qualified results are flagged as "UJ" and positive qualified results are flagged as "J."

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.		Not all of the sample qualifiers listed in the DVRs appear in Table 5-5, Qualified Sample Results, and the Sharpe/Tracy Qualified Results tables included with the DVRs. For example, the DVR on Method SW8081A for sample delivery group (SDG) 02-5623 indicates samples should be qualified as J/UJ for toxaphene due to a continuing calibration verification (CCV) % difference (%D) exceeding quality control criteria. However, samples SS0095, SS0096, SS0097, SS0100 and SS0101 are not listed as being qualified for toxaphene on Table 5-5 or the Sharpe/Tracy Qualified Results table. Please revise the tables to include all sample compounds that need qualification.	(A) The qualification flags for toxaphene in the cited samples were inadvertently omitted from the database. Toxaphene results have been qualified in accordance with the Data Validation Report. In addition, all Data Validation Reports were reviewed, and additional qualification flags have been added to revised tables.
4.		It appears that the DVRs indicate that sample SS0146-SO-323 was not analyzed despite being listed on the chain of custodies and being requested for validation. According to Table 5-2, this sample was collected. Please clarify why this sample was not tested for the all of the analytes listed on the chain of custody.	(A) Sample SS0146-SO-323 was collected and analyzed for pesticides only. The sample was validated as part of submission 02-05942. The sample was collected during over-excavation of a step-out from previous sample location SS0125-SO-299. Analyses of previous sample location SS0125-SO-299 resulted in pesticide detections above cleanup standards. Further analyses of that sample was halted and over-excavation was performed as directed by the RPM team. The over-excavation was sampled at location SS0146-SO-323 – which also resulted in pesticide detections above cleanup standards. At that point the excavation was far beyond the ROD-estimated limits, the remediation budget limit had been reached, and no further analyses of the sample or further over-excavation in the area were performed.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
5.		The DVRs indicate no surrogate was analyzed for Method SW-846 (SW) 8321. However, it appears that a surrogate is required by the method and the Comprehensive Field Work Plan, Quality Assurance Project Plan, Volume 2 of 2, Version 3.0 (QAPP). Please revise the appropriate DVRs to include how the data is affected by this apparent discrepancy and explain why a surrogate was not used.	(A) Although the QAPP provides QC criteria for a surrogate, a specific surrogate is not identified. Ideally, a surrogate would have been included. However, after the samples had been collected and shipped, the original subcontract laboratory could not meet the required turnaround times, and a second laboratory had to be procured on very short notice. The laboratory that ultimately performed the analysis does not routinely use a surrogate as it is not required by the method.
6.		The DQA indicates that for Methods SW8081A, SW8141A and SW8270C the percent recoveries (%R) for CCVs exceeded the QC criteria. However, it was the %D that exceeded the QC criteria. Revise Appendix E to indicate the %D exceeded QC criteria on the CCV for all affected methods.	(A) The text has been revised to discuss the outliers in terms of percent difference, not percent recovery.
7.		It is indicated in some of the DVRs (e.g., chlorinated herbicides by Method SW8151A) that there appear to be instances of linear regressions and quadratic equations being forced through the origin. However, the QAPP states that this is not allowed. Please revise Appendix E to indicate what affect this will have on the data, and clarify why these results do not appear to be qualified.	(A) Agreed. Linear regression lines should not be forced through the origin, and this is a laboratory noncompliance. There is no anticipated effect on quantitation limits. With regard to EPA Method 8141, all results were non-detect, so the calibration model used has no effect on the outcome of the analysis. For EPA Method 8151A, there were two analytes detected, dinoseb and 2,4-D. For these two analytes, the laboratory used the average response factor from the 5-point calibration curve, not a linear regression curve, and the results are not affected.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
8.		Field Work Variance (FWV) 70559-009R1 was referenced in Appendix E. However this document was not provided for review. Therefore, these comments were based on the assumption that data validation methods in the EPA guidance and the QAPP were followed.	(A) Comment noted.
		Specific Comments:	
1.		**Section 5.4.2.1, Page 5-5:** This section indicates that "in cases where one of the results is below the project quantitation limit (PQL), pairs of field duplicate results are considered in agreement if the absolute value of the difference between the result and the PQL is greater than the PQL". This statement appears incorrect. It appears the statement should read that if the absolute value of the difference is less than the PQL then the results are acceptable. Furthermore, Table 8-1 of the QAPP states that if an analyte is detected in one sample but not the duplicate then results should be qualified as J/UJ respectively. In addition, it appears that qualifiers for field duplicates that exceed QC criteria have not been listed in Table 5-1. Please revise Appendix E to clarify these discrepancies, to correctly qualify field duplicate results as per the QAPP and ensure result qualifiers appear in Table 5-1.	(A) Agreed. The text has been corrected to indicate that "… the difference between the result and the PQL is less than the PQL". Qualifications based on field duplicate outliers have been added to the results. The additional flags are reflected in the text and the appropriate tables.
2.		**Section 5.4.3, Page 5-5:** This section discusses instances where the laboratory PQL exceeded the cleanup goals. This section appears to incorrectly state that dieldrin PQLs were exceeded due to moisture content. According to the laboratory sample reports, it appears that the laboratory PQL, before moisture correction, is 3.0 micrograms per kilogram (ug/kg). However, according to Table 5-1, the cleanup goal is 2.0 ug/kg. Also, Table 5-8 appears to indicate that the cleanup goal was exceeded on one sample for dichlorophenoxyacetic acid. However, this is not discussed in Section 5.4.3. Please revise Appendix E to resolve these discrepancies.	(A) The text has been revised to remove the reference to moisture correction. In fact, the QAPP-required reporting limit for Dieldrin is 3 ug/kg, and this was the required reporting limit presented in the approved SAP. Dichlorophenoxyacetic acid is listed in Table 5-8 and referred to in Section 5.4.3 as 2,4-D. All positive results are reported to the MDL, and the MDLs are below the Cleanup Goals in all cases.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.		**DVR SDG 02-5942, Method SW8081, Section XII:** This section indicates that column confirmations were within +/- 50%. However, according to Method SW8081 and the QAPP, the column confirmation requirement is +/- 40%. Please revise Appendix E to resolve this discrepancy, and ensure data is qualified appropriately.	(N) The reference to a >40% difference between results on two dissimilar columns in EPA Method 8000, Section 7.10.4.1, is presented as a guidance, not as a fixed requirement. Shaw is unable to locate the 40 percent criteria in the QAPP. For the positive results in SDG 02-05942, the percent difference between positive results on the 2 analytical columns used met the 40 percent required except for 4,4'-DDD in sample SS0140-SO-316, 4,4'DDE in sample SS0144-SO-321, and Dieldrin in samples SS0149-SO-326 and SS0147-SO-324. In these samples, the results were well below the reporting limit, and the large percent differences are due to quantitative uncertainties incurred as the limit of detection is approached. All of the results reported below the practical quantitation limits have been qualified as estimated (i.e., quantitatively uncertain) and no additional qualification is considered necessary.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
4.		**DVR SDG 02-5623, Method SW8270C, Section IV:** The table in this section appears to inconsistently qualify samples due to CCV exceedances. For example, the 10/29/02 benzoic acid qualifiers are listed as J/UJ. However, the 11/26/02 benzoic acid qualifiers are listed as J/None. Please revise the DVR to address this apparent discrepancy, and ensure all data are qualified appropriately.	(N) The data have been flagged as appropriate. When there is a negative percent difference recorded in the data validation report, the continuing calibration response factor is less than the initial calibration response factor. Therefore, when the percent difference is greater than -20%, the data are flagged J/UJ to account for a potential drop in sensitivity. When the percent difference is greater than +20%, the continuing calibration response factor is greater than the ICAL response factor, and only positive results are flagged as estimated since a higher CCAL RF indicates a potential increase in sensitivity, and the reported quantitation limit is considered valid.
5.		**DVR SDG 02-5623, Method SW8270C, Section XI:** This section indicates that internal standard recoveries were low for three samples for the compound perylene-D12. It is unclear why these results were qualified as estimated "UJ" instead of being rejected. Please revise the DVR to clarify why compounds were not rejected due to the low internal standard recovery.	(N) According to the National Functional Guidelines, qualification of results associated with noncompliant internal standard recoveries is based on professional judgment. In this case, the low recoveries did not appear to be the result of any systematic problem with instrument performance or overwhelming matrix interferences. For these samples, flagging the results as estimated was considered sufficient.
		ACTION CODES W – WITHDRAWN A – ACCEPTED/CONCUR N – NON-CONCUR D – ACTION DEFERRED VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
6.		**DVR SDG 02-5623, Diesel Range Organics by Method SW8015, Section V:** This section states that sample SS0100-SO-266 should be qualified for diesel range organics due to a surrogate exceeding QC criteria. It is unclear if this sample has been qualified correctly. The laboratory sample report appears to indicate that this sample was diluted ten times. It is unclear in the DVR if the cause of the surrogate exceedance is due to the dilution factor. Also, although the "J" qualifier has been hand written on the laboratory sample report, no qualifier appears on this sample in either Table 5-1, or the Sharpe/Tracy Qualified Results table. Please revise the DVR to address this apparent discrepancy.	(A) The cause of the surrogate recovery outlier was not the dilution factor, but interference in the chromatogram from components of the TPH present in the sample. The qualifier was inadvertently omitted from the database. The text and appropriate tables have been modified to correct this omission. (See response to General Comment 3.)
7.		**DVR SDG 02-5623, Gasoline Range Organics by Method SW8015, Section IV:** This section indicates that target analytes were found in many of the method blanks. However, from the information presented, it cannot be determined if the affected samples listed in the DVR were qualified correctly. For example, Table 5-1 lists the result for sample SS0164 as 0.03J mg/kg. However, the method blank associated with this sample had a concentration of 0.2 mg/kg. Using the 5x rule, it would appear that this sample should be reported as undetected at the contract required quantitation limit (CRQL)/blank level or sample result. Section IV of the DVR indicates the result should be qualified as not detected "U" at the level of the CRQL. Please revise the DVR and the appropriate data tables to address this apparent discrepancy.	(A) The qualifications for blank contamination have been reviewed and the qualification added to the text and tables as appropriate. (See response to General Comment 3.)
		ACTION CODES A – ACCEPTED/CONCUR D – ACTION DEFERRED W – WITHDRAWN N – NON-CONCUR VE – VE POTENTIAL/VEP ATTACHED	

DESIGN REVIEW COMMENTS Project: Review of Draft ESD to the Sitewide Comprehensive ROD, DDJC-Tracy, October 2003

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT & UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE December 2003
NAME U.S. EPA

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
8.		**DVR SDG 02-6075, Semivolatile Organic Compounds by Method SW8270C, Section III**: This section indicates that although linear regression and/or quadratic equations were used, no supporting documentation was provided in the data package. It is unclear what documentation was not provided and if this was a requirement in the QAPP. Please revise the DVR to clarify which supporting documentation was not provided, if this was a requirement of the QAPP, and how data was affected.	(N) The referenced SDG, 02-6075, is a Level IV submittal. All of the raw data were available to reproduce the calibration results. The calibration results were verified by independent calculation for pyridine and phenol. The laboratory reports a correlation coefficient when the relative standard deviation criterion is not met, but does not provide the linear regression calculations on hard copy. All of the flags for initial calibration outliers were applied correctly.
9.		**DVR SDG 02-6075, Carbamate and Urea Pesticides by Method SW8321, Section VIII:** This section indicates that only the compounds linuron and methiocarb were reported for carbamate and urea pesticides. However, the QAPP specifies a longer list of compounds. Please revise Appendix E to address this apparent discrepancy.	(N) Based on the approved sample and analysis plan (ICF Kaiser Engineers, August 1999), the only target analyte identified for EPA Method 8321 was linuron. Subsequently, methiocarb was added as a target analyte.

ACTION CODES
A – ACCEPTED/CONCUR
D – ACTION DEFERRED
W – WITHDRAWN
N – NON-CONCUR
VE – VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Draft 2003 ESD to the Sitewide Comprehensive ROD, DDJC-Tracy

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT& UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE: 31 December 2003
NAME: Marcus Pierce, RWQCB

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		General Comments	
1.		The Draft 2003 ESD proposes to raise several site-specific soil cleanup levels, but it is unclear why these site-specific standards need to be raised. The CVRWQCB is unlikely to request additional soil excavation at these sites unless future groundwater monitoring indicates the residual soil contaminants are migrating to groundwater and causing an excursion above an applicable water quality objective. For most of the contaminants of concern, the Post-ROD (1998 to present) monitoring results suggest this is not going to happen. For SWMU 6 and SWMU 8, the Draft 2003 ESD is proposing to raise a soil cleanup standard to an arbitrary level of 1 µg/Kg above the highest concentration of the contaminant that remains at the site. DDJC should consider whether a formal change in site-specific soil cleanup standards is really necessary, and if so, how is an arbitrary standard justified?	(A) If the RPMs concur with the RWQCB position on additional soil excavation without a formal change in cleanup standards, then the proposed change in cleanup standards can be withdrawn. The proposed increases in cleanup standards will be retained until we receive EPA concurrence on the CVRWQCB approach. It should be noted that the proposed changes in cleanup standards were based on limited data, but is not arbitrary. DI WET results suggesting the soil left in place will not impact groundwater quality are provided in the respective discussion for SWMU 6 and SWMU 8. There is uncertainty regarding how much higher contaminant concentrations could be raised before an impact would be experienced.
2.		The Draft 2003 ESD relies too much on limited DI-WET data to support changes in soil cleanup standards for 2,4,5-T at SWMU 6 and DDT at SWMU 8. For SWMU 6, revising the soil cleanup level for 2,4,5-T from 5 µg/Kg to 13 µg/Kg is based on only one DI-WET result. The DI-WET results do not provide a convincing argument for revising the soil cleanup levels at these sites. Therefore, rationale such as Post-ROD groundwater monitoring, SESOIL/VLEACH modeling, and/or the residual mass estimates should be discussed in more detail to support these changes.	(A) Additional supporting rationale will be strengthened in the ESD as needed to support the Project Completion Report (Remedial Action Report).

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: Draft 2003 ESD to the Sitewide Comprehensive ROD, DDJC-Tracy

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE: 31 December 2003
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME: Marcus Pierce, RWQCB
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Specific Comments	
1.		Page 2-1, Section 2.3.0.6: This section indicates the annual reporting on land use controls (LUCs) will be included in DDJC-Tracy's Annual Monitoring Report. We concur with placing this information in the Annual Monitoring Report, but the last sentence in this section states this reporting "will not be subject to approval and/or revision by the U.S. EPA and the State." This statement undermines the ability of the regulatory team to ensure the remedies at LUC sites are maintained. Please delete this sentence.	(A) The LUC portion of the Annual Groundwater Monitoring report is considered a status report for a given period of time. However, the statement will be deleted as indicated.
2.		Page 4-4, Section 4.2.2.2: Change "Figure 4-2" to "Figure 4-1".	(A) The figure reference will be changed as indicated.
3.		Appendix C, Residual Mass Estimates for SWMU 6: Footnote 3 indicates the hypothetical mass of residual contamination extends 10 feet north and south of the present excavation boundaries and extends to a depth of 20 feet bgs. Based on the final confirmation soil sampling, the residual contamination actually extends east below Building 28 and west beneath the 48-inch storm sewer. Therefore, the hypothetical mass should extend 10 feet east and west of the present excavation. Please explain how this hypothetical mass calculation is appropriate for SWMU 6.	(A) The residual mass estimate will be revised and a sketch will be added to Appendix C that clarifies the location of residual contamination.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Revised Draft 2003 ESD to the Sitewide Comprehensive ROD, DDJC-Tracy

☐ SITE DEV & GEO ☐ MECHANICAL ☐ SAFETY ☐ SYSTEMS ENG
☐ ENVIR PROT& UTIL ☐ MFG TECHNOLOGY ☐ ADV TECH ☐ VALUE ENG
☐ ARCHITECTURAL ☐ ELECTRICAL ☐ ESTIMATING ☐ OTHER
☐ STRUCTURAL ☐ INST & CONTROLS ☐ SPECIFICATIONS

REVIEW
DATE 19 December 2003
NAME Peter MacNicholl, DTSC

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
		Comments	
1.		DTSC's new applicable or relevant and appropriate requirement (ARAR) in the Title 22, Division 4.5, Chapter 39, section 67391.1 of the California Code of Regulations requires that any site using a Land Use Controls (LUC) needs to have an enforcement and implementation plan (E&I) to facilitate the LUC. Specifically, the E&I plan should list who is responsible for conducting the inspections, what types of things are going to be observed, how often the inspections will be conducted, etc. DDJC-Tracy plans to include the Addendum to the Installation Master Plan (IMP) as an Appendix to the ESD as indicated in the response to comments for the Tracy-DDJC Amendment to the Record of Decision. The updated IMP Addendum attached to the ESD would eliminate the need for a separate E&I plan for sites with current LUCs. If in the future, land is transferred to a non-federal entity then Land Use Covenants would be required in the form of deed restrictions to the land until it is cleaned up to unrestricted use. Please include a copy of the Addendum to the Installation Master Plan as an appendix to the Revised Draft 2003 Explanation of Significant Differences to the Site-Wide Comprehensive Record of Decision, DDJC-Tracy.	(A) An appendix to the Installation Master Plan will be included in the draft final ESD.
2.		In the new ARAR there is an additional provision that calls for the "…responsible parties, facility owners, operators, or project proponents involved in land use covenants to pay all costs associated with the administration of such controls." The new provision will cover all of DTSC's costs associated with oversight of the land use controls well into the future until such time that the land is transferred to another party or cleaned up for unrestricted use. DTSC expects the Federal Facilities Agreement to be the controlling document for this requirement.	(N) DDJC will administer land use controls at DDJC Tracy as long as the depot is an operating facility and will provide DTSC with the status of all land use controls as part of the Annual Well Monitoring Report. The process for the lease or transfer of property, whether as a closing facility or non-closure transfer, will follow the procedures and policies discussed and referenced under Section 2.3.2 of the Draft ESD.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

K:\Wprocess\00352\Tracy\ESD\Draft Final\Comments\MacNicholl.doc

U. S. ARMY ENGINEER DIVISION HUNTSVILLE

CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT Draft 2003 ESD to the Sitewide Comprehensive ROD, DDJC-Tracy

☒ SITE DEV & GEO	☐ MECHANICAL	☐ SAFETY	☐ SYSTEMS ENG	REVIEW
☐ ENVIR PROT& UTIL	☐ MFG TECHNOLOGY	☐ ADV TECH	☐ VALUE ENG	DATE 19 December 2003
☐ ARCHITECTURAL	☐ ELECTRICAL	☐ ESTIMATING	☐ OTHER	NAME Peter MacNicholl, DTSC
☐ STRUCTURAL	☐ INST & CONTROLS	☐ SPECIFICATIONS		

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
3.		Pages 2-12, 2-13, sections 2.3.2.1, 2.3.2.5, 2.3.2.9; Please discuss DTSC's new regulation 67391.1 in these sections. Specifically, discuss how DTSC shall not consider property owned by the federal government to be suitable for transfer to nonfederal entities where hazardous materials, hazardous wastes/constituents/ substances, remain at the property at levels which are not suitable for unrestricted land use, unless an appropriate Land Use Covenants will be executed by DTSC and the federal government and recorded in the county where the land is located.	(A) The suitability of transfer of federal property to non-federal entities will be further discussed in Section 2.3.2.5, including the DTSC requirement for executing appropriate land use covenants before endorsing a property transfer to nonfederal entities.

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

K:\Wprocess\00352\Tracy\ESD\Draft Final\Comments\MacNicholl.doc