SDMS DOCID# 1106888

INSTALLATION RESTORATION PROGRAM

BASEWIDE RECORD OF DECISION

FORMER NORTON AIR FORCE BASE
SAN BERNARDINO, CALIFORNIA

SEPTEMBER 2005

FINAL

Prepared by
EARTH TECH, INC.
1461 E. COOLEY DRIVE, SUITE 100
COLTON, CA 92324

CONTRACT NO. FY1624-00-D-8023
DELIVERY ORDER NO. 004

Prepared for
AIR FORCE REAL PROPERTY AGENCY
NORTON OPERATING LOCATION
MCCLELLAN, CALIFORNIA

Jerry Bingham
CONTRACTING OFFICER'S REPRESENTATIVE
UNITED STATES AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
ENVIRONMENTAL RESTORATION DIVISION
BROOKS CITY-BASE, TX 78235-5363

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LIST OF ACRONYMS AND ABBREVIATIONS

ADD	average daily dose
AFB	Air Force Base
AM	Action Memorandum
AOC	Area of Concern
ARAR	applicable or relevant and appropriate requirement
BCT	BRAC Cleanup Team
BFI	Browning Ferris Industries
bgs	below ground surface
BMO	Ballistic Missile Organization
BRAC	Base Realignment and Closure
BTEX	benzene, toluene, ethylbenzene, and xylenes
BWFS	Basewide Feasibility Study
BWPP	Basewide Proposed Plan
CBA	Central Base Area
CCR	California Code of Regulations
CDM	CDM Federal Programs Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMP	Conservation Management Plan
CRP	Community Relations Plan
COC	contaminant of concern
CS	confirmation study
DCB	dichlorobenzene
DCE	dichloroethene
°	degree
DTSC	Department of Toxic Substances Control
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
ERA	ecological risk assessment
ESI	expanded source investigation
FAA	Federal Aviation Administration
F	Fahrenheit
FFA	Federal Facility Agreement
GCA	Golf Course Area
HHRA	human health risk assessment
HI	hazard index
HQ	hazard quotient
IC	institutional control
IRIS	integrated risk information system
IRP	Installation Restoration Program
IVDA	Inland Valley Development Agency
IWL	Industrial Waste Line
IWTP	industrial waste treatment plant
LADD	lifetime average daily dose

LUCIP	Land Use Control Implementation Plan
MCL	maximum contaminant level
µg/dL	micrograms per deciliter
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
NBA	Northeast Base Area
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	no further action
ng/kg	nanograms per kilogram
NPL	National Priorities List
O&M	operation and maintenance
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/g	picoCuries per gram
PEF	potency equivalency factor
PRG	preliminary remediation goal
RA	remedial action
RAB	Restoration Advisory Board
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RfD	reference dose
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SAR	small arms range
SARA	Superfund Amendments and Reauthorization Act
SBIAA	San Bernardino International Airport Authority
SF	slope factor
SLUC	State Land Use Covenant
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TBC	to be considered
TCA	trichloroethane
TCE	trichloroethylene
TCDD	tetrachlorodibenzo-p-dioxin
TEF	toxic equivalency factor
TMV	toxicity, mobility, or volume
UCL^{95}	95% upper confidence limit
USAF	United States Air Force
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound

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1.0 DECLARATION

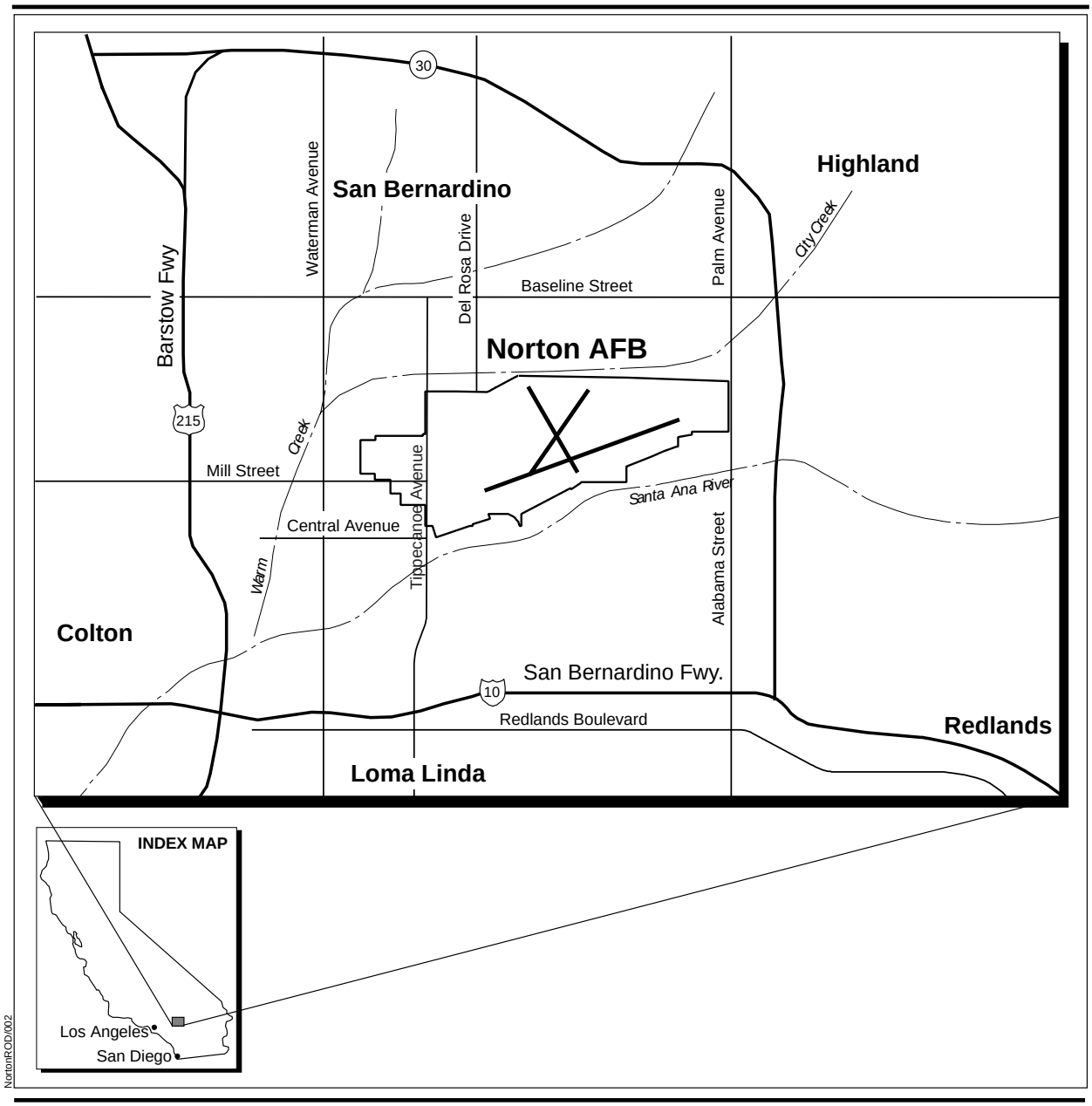
Site Name and Location

Former Norton Air Force Base (AFB), San Bernardino, California (Figure 1-1)
U.S. Environmental Protection Agency (EPA) identification: CA4570024345.

Statement of Basis and Purpose

This Basewide Operable Unit (OU) Record of Decision (ROD) presents the selected remedies for 21 of the 22 Installation Restoration Program (IRP) sites, all of the 73 Areas of Concern (AOCs), the small arms range (SAR), Building 752, and groundwater contamination in the Northeast Base Area (NBA), former Norton AFB, San Bernardino County, California (see Figures 1-1 and 1-2). The selected remedies presented in this ROD were chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The remedial decisions are based on the findings of the *Basewide Feasibility Study* (BWFS) (CDM Federal Programs Corporation [CDM], 2003) and other associated documentation included in the Norton AFB Administrative Record. The Administrative Record index is provided in Appendix A. The Air Force and the U.S. EPA are selecting these remedies with the concurrence of the State of California, including the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB).

This ROD addresses remedies for the IRP sites, but does not complete Resource Conservation and Recovery Act (RCRA) corrective action termination. Sites 7 and 17 and AOCs 33 and 70 are addressed herein, and corrective action termination will be addressed separately under RCRA. Groundwater contamination (i.e., the Norton tricloroethylene [TCE] plume) was addressed in the Central Base Area (CBA) OU ROD (U.S. Air Force [USAF], 1993a), which included soil sources that contributed to the plume, as well as Site 9, and is not part of this ROD. The Basewide OU ROD will not further discuss the sites addressed in the CBA OU ROD.



Location of Norton AFB

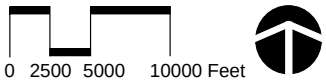
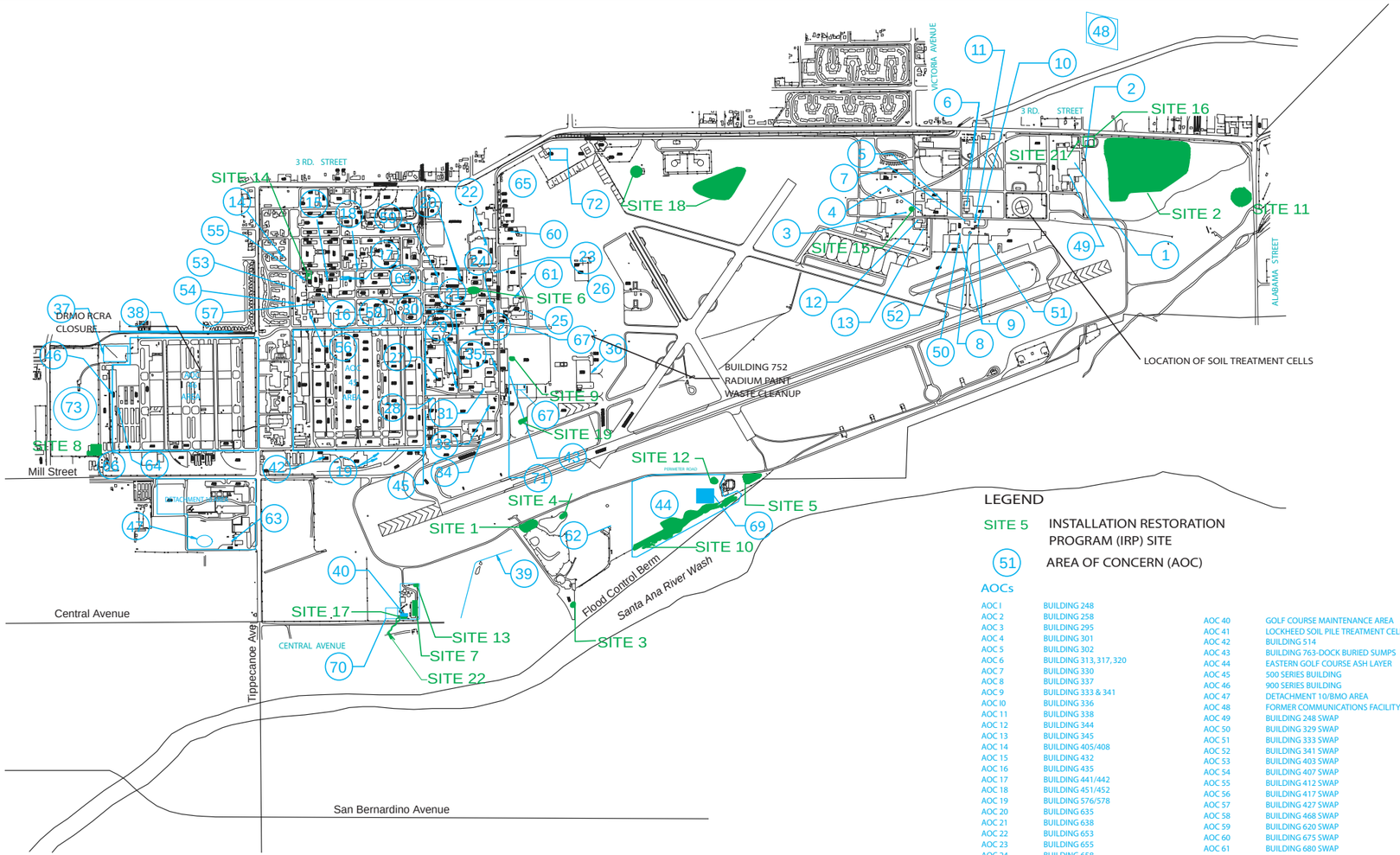


Figure 1-1



LEGEND

SITE 5 INSTALLATION RESTORATION PROGRAM (IRP) SITE

51 AREA OF CONCERN (AOC)

AOCs

AOC 1	BUILDING 248
AOC 2	BUILDING 258
AOC 3	BUILDING 295
AOC 4	BUILDING 301
AOC 5	BUILDING 302
AOC 6	BUILDING 313, 317, 320
AOC 7	BUILDING 330
AOC 8	BUILDING 337
AOC 9	BUILDING 333 & 341
AOC 10	BUILDING 336
AOC 11	BUILDING 338
AOC 12	BUILDING 344
AOC 13	BUILDING 345
AOC 14	BUILDING 405/408
AOC 15	BUILDING 432
AOC 16	BUILDING 435
AOC 17	BUILDING 441/442
AOC 18	BUILDING 451/452
AOC 19	BUILDING 576/578
AOC 20	BUILDING 635
AOC 21	BUILDING 638
AOC 22	BUILDING 653
AOC 23	BUILDING 655
AOC 24	BUILDING 658
AOC 25	BUILDING 678
AOC 26	BUILDING 695
AOC 27	BUILDING 705
AOC 28	BUILDING 707
AOC 29	BUILDING 723/724/725
AOC 30	BUILDING 726
AOC 31	BUILDING 736
AOC 32	BUILDING 741
AOC 33	BUILDING 747
AOC 34	BUILDING 749
AOC 35	BUILDING 755
AOC 36	BUILDING 795
AOC 37	REFUSE DUMP AREA
AOC 38	C STREET OUTFALL
AOC 39	GOLF COURSE STORM DRAIN OUTFALL AREA
AOC 40	GOLF COURSE MAINTENANCE AREA
AOC 41	LOCKHEED SOIL PILE TREATMENT CELL
AOC 42	BUILDING 514
AOC 43	BUILDING 763-DOCK BURIED SUMPS
AOC 44	EASTERN GOLF COURSE ASH LAYER
AOC 45	500 SERIES BUILDING
AOC 46	900 SERIES BUILDING
AOC 47	DETACHMENT 10/BMO AREA
AOC 48	FORMER COMMUNICATIONS FACILITY
AOC 49	BUILDING 248 SWAP
AOC 50	BUILDING 329 SWAP
AOC 51	BUILDING 333 SWAP
AOC 52	BUILDING 341 SWAP
AOC 53	BUILDING 403 SWAP
AOC 54	BUILDING 407 SWAP
AOC 55	BUILDING 412 SWAP
AOC 56	BUILDING 417 SWAP
AOC 57	BUILDING 427 SWAP
AOC 58	BUILDING 468 SWAP
AOC 59	BUILDING 620 SWAP
AOC 60	BUILDING 675 SWAP
AOC 61	BUILDING 680 SWAP
AOC 62	BUILDING 825 SWAP
AOC 63	BUILDING 950 SWAP
AOC 64	BUILDING 976 SWAP
AOC 65	DELTA 7 SWAP
AOC 66	GATE 10 SWAP
AOC 67	GASOLINE DUMP PITS
AOC 68	BUILDING 620 CAR WASH
AOC 69	CHEMICAL WARFARE TRAINING AREA
AOC 70	IWTP EFFLUENT PERCOLATION POND
AOC 71	IRP SITE 9 AIR DUCTS
AOC 72	FORMER PARK AND WASH AREA FOR AIRCRAFT FUELING VEHICLES
AOC 73	EXPLOSIVE ORDNANCE PROFICENCY TRAINING RANGE

IRP SITES

SITE 1	INDUSTRIAL WASTE LAGOONS
SITE 2	LANDFILL No. 2
SITE 3	WASTE PIT No. 2
SITE 4	WASTE PIT No. 1
SITE 5	FORMER FIRE TRAINING AREA No. 2
SITE 6	FORMER UNDERGROUND WASTE OIL TANK
SITE 7	IWTP SLUDGE DRYING BEDS
SITE 8	PCB SPILL AREA
SITE 9	ELECTROPLATING SHOP
SITE 10	LANDFILL No. 1
SITE 11	FUEL SLUDGE DRYING BEDS
SITE 12	WASTE PIT No. 3
SITE 13	IWTP SLUDGE DISPOSAL AREA
SITE 14	WASTE PIT NO. 4
SITE 15	S-290 TANK
SITE 16	AAVS EVAPORATION BASIN
SITE 17	DRUMMED WASTE STORAGE AREA WASTE FUEL AND SOLVENT SUMP
SITE 18	AVGAS SPILL AREA
SITE 19	DRUM STORAGE AREA No. 1
SITE 20	LOW LEVEL RADIOACTIVE WASTE BURIAL SITE
SITE 21	AAVS UNDERGROUND FERRICYANIDE TANK
SITE 22	IWTP DISCHARGE DITCH & OUTFALL AREA

N

900 0 1800

CDM Federal Programs Corporation
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LOCATION OF IRP SITES AND AOCs
FORMER NORTON AIR FORCE BASE
SAN BERNARDINO, CALIFORNIA

Figure 1-2

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Assessment of the Sites

The response actions selected in this ROD are necessary to protect human health and welfare or the environment from actual or threatened releases of hazardous substances and pollutants or contaminants as defined in NCP Section 300.5.

Description of Selected Remedies

This ROD addresses remedies for IRP sites but does not complete corrective action termination of the RCRA sites that are part of the RCRA interim status facility. The Basewide ROD-selected remedies are designed to protect human health and the environment. Contaminants present in the soil and groundwater are the result of historical operations at Norton AFB, primarily activities associated with aircraft maintenance. The Basewide ROD sites and previous removal actions, preferred alternatives, and selected remedies are listed in Table 1-1. Selected remedies specified in this ROD are described below:

- No Further Action (NFA) Sites (14 IRP sites, 72 AOCs, and the NBA Tetrachloroethene [PCE] Plume)

  Contaminants were not detected at levels that pose an unacceptable risk to human health or the environment, or cleanup has been completed, and confirmation sampling results indicate that contaminants are not present at levels that constitute unacceptable risk to human health or the environment. The Air Force and the U.S. EPA, with concurrence from the State of California, have concluded that no action is necessary to protect human health or the environment. These sites allow unrestricted land use, which means that the property can be used for any type of development, including residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children.

  Residual contamination at AOC 4 exceeds unrestricted use levels. Restrictions are included in the Federal Aviation Administration (FAA) transfer document, and in city zoning provisions. In addition, State Land Use Covenant (SLUC) regulation 22 California Code of Regulations (CCR) 67391.1(b), which has been identified as an applicable or relevant and appropriate requirement (ARAR), specifies the execution of an SLUC, which provides DTSC with an enforcement mechanism to assure compliance with the restriction on residential and sensitive uses. The Finding of Suitability to Transfer for this property was signed on September 11, 1997, and the property was transferred to the San Bernardino International Airport Authority (SBIAA) by the Air Force on April 1, 2001. The 5-year review will also ensure that the land-use controls remain effective.

Table 1-1

Basewide ROD Site List

Page 1 of 3

Site Name	Completed Removal Action	Preferred Alternative[1]	Selected Remedy
IRP Site 1	Excavation and off-site disposal	NFA	NFA
IRP Site 2	Landfill capping	ICs, continuing operation, maintenance, and monitoring of existing containment systems	ICs, continuing operation, maintenance, and monitoring of existing containment systems
IRP Site 3	None	NFA	NFA
IRP Site 4	None	NFA	NFA
IRP Site 5	SVE, excavation and stabilization, and/or on-/off-site disposal	ICs	ICs
IRP Site 6	Excavation, bioremediation, and on-/off-site disposal	NFA	NFA
IRP Site 7	None	Excavation and off-site disposal	Excavation and off-site disposal
IRP Site 8	Excavation and on-site disposal	NFA	NFA
IRP Site 9			Addressed in CBA OU
IRP Site 10	Excavation and on-/off-site disposal	Excavation and off-site disposal	Excavation and off-site disposal
IRP Site 11	None	NFA	NFA
IRP Site 12	Excavation and off-site disposal	Excavation and off-site disposal	NFA[3]
IRP Site 13	Excavation and on-site disposal	NFA	NFA
IRP Site 14	Excavation and on-site/off-site disposal	NFA	NFA
IRP Site 15	None	NFA	NFA
IRP Site 16	Excavation and off-site disposal	NFA	NFA
IRP Site 17	Groundwater monitoring	Excavation and off-site disposal	Excavation and off-site disposal
IRP Site 18	None	NFA	NFA
IRP Site 19	None	ICs	ICs
IRP Site 20	None	NFA	NFA
IRP Site 21	Excavation and off-site disposal	NFA	NFA
IRP Site 22	None	NFA	NFA
AOC 1	None	NFA	NFA
AOC 2	None	NFA	NFA
AOC 3	None	NFA	NFA
AOC 4	None	NFA	NFA
AOC 5	None	NFA	NFA
AOC 6	None	NFA	NFA
AOC 7	None	NFA	NFA
AOC 8	None	NFA	NFA
AOC 9	None	NFA	NFA
AOC 10	None	NFA	NFA
AOC 11	None	NFA	NFA
AOC 12	None	NFA	NFA
AOC 13	None	NFA	NFA
AOC 14	None	NFA	NFA

Table 1-1

Basewide ROD Site List

Site Name	Completed Removal Action	Preferred Alternative[1]	Selected Remedy
AOC 15	None	NFA	NFA
AOC 16	None	NFA	NFA
AOC 17	None	NFA	NFA
AOC 18	None	NFA	NFA
AOC 19	None	NFA	NFA
AOC 20	None	NFA	NFA
AOC 21	None	NFA	NFA
AOC 22	None	NFA	NFA
AOC 23	None	NFA	NFA
AOC 24	Excavation and on-site treatment[2]	NFA	NFA
AOC 25	None	NFA	NFA
AOC 26	None	NFA	NFA
AOC 27	None	NFA	NFA
AOC 28	None	NFA	NFA
AOC 29	None	NFA	NFA
AOC 30	None	NFA	NFA
AOC 31	None	NFA	NFA
AOC 32	None	NFA	NFA
AOC 33	None	Excavation and off-site disposal	Excavation and off-site disposal
AOC 34	None	NFA	NFA
AOC 35	None	NFA	NFA
AOC 36	None	NFA	NFA
AOC 37	Excavation and on-site disposal	NFA	NFA
AOC 38	Excavation and on-/off-site disposal	NFA	NFA
AOC 39	None	NFA	NFA
AOC 40	Excavation and off-site disposal	Excavation and off-site disposal	NFA[3]
AOC 41	None	NFA	NFA
AOC 42	None	NFA	NFA
AOC 43	None	NFA	NFA
AOC 44	None	NFA	NFA
AOC 45	None	NFA	NFA
AOC 46	None	NFA	NFA
AOC 47	None	NFA	NFA
AOC 48	None	NFA	NFA
AOC 49	None	NFA	NFA
AOC 50	None	NFA	NFA
AOC 51	None	NFA	NFA
AOC 52	None	NFA	NFA
AOC 53	None	NFA	NFA
AOC 54	None	NFA	NFA
AOC 55	None	NFA	NFA
AOC 56	None	NFA	NFA
AOC 57	None	NFA	NFA

Table 1-1

Basewide ROD Site List

Site Name	Completed Removal Action	Preferred Alternative[1]	Selected Remedy
AOC 58	None	NFA	NFA
AOC 59	None	NFA	NFA
AOC 60	None	NFA	NFA
AOC 61	None	NFA	NFA
AOC 62	None	NFA	NFA
AOC 63	None	NFA	NFA
AOC 64	None	NFA	NFA
AOC 65	None	NFA	NFA
AOC 66	None	NFA	NFA
AOC 67	None	NFA	NFA
AOC 68	None	NFA	NFA
AOC 69	None	NFA	NFA
AOC 70	Excavation and on-site disposal	NFA	NFA
AOC 71	Duct removal and off-site disposal	NFA	NFA
AOC 72	None	NFA	NFA
AOC 73	Excavation and off-site disposal	NFA	NFA
Small Arms Range	Projectile removal; impact berm buried in Site 5 excavation, excavation and on-/off-site disposal	ICs	ICs
Building 752	Excavation and off-site disposal	Excavation and off-site disposal	Excavation and off-site disposal
NBA PCE Plume	None	NFA	NFA

Notes:
Remedies for Sites 7 and 17 and AOCs 33 and 70, are addressed in this ROD; these sites will also be addressed for the corrective action termination of the RCRA Interim Status Facility.

[1] Preferred alternative specified in the Basewide Proposed Plan (Earth Tech, 2004c).

[2] Excavation and treatment of contaminated soil from AOC 24 (Building 658) were performed as a component of the CBA OU selected remedy documented in the CBA OU ROD.

[3] Excavation and off-site disposal for Site 12 and AOC 40 were completed and closure reports were finalized in October and December 2004, respectively.

AOC = Area of Concern
CBA = Central Base Area
EPA = Environmental Protection Agency
IC = Institutional Control
IRP = Installation Restoration Program
NBA = Northeast Base Area
NFA = No Further Action
PCE = tetrachloroethene
SVE = soil vapor extraction

- Institutional Control (IC) Sites (IRP sites 2, 5, and 19 and the SAR)

  Contaminants are present in the soil at levels that do not allow for unrestricted land use. In order to protect human health and the environment, the Air Force will include land use restrictions that run with the land to prohibit activities that may result in unacceptable exposure to residual contamination or may facilitate contaminant migration.

- Removal Sites (IRP sites 7, 10, and 17; AOC 33; and Building 752)

  Soil contamination will be excavated and disposed at an approved off-site facility. Soil samples will be collected from the excavation to confirm removal of contaminants posing an adverse risk to human health or the environment. The excavation will be backfilled and compacted with clean materials, and the site will be restored to its prior condition. Excavation is an economical, permanent, and relatively swift means of removing contaminants from shallow soils.

Statutory Determinations

The selected remedies included in the Basewide ROD attain the mandates of CERCLA Section 121 and the NCP. The selected remedies protect human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, are cost-effective, and to the extent practicable, utilize permanent solutions. The excavation remedy is a permanent solution. ICs are a permanent solution, but do not satisfy the statutory preference for treatment as a principal element of the selected remedy.

Implementation of the selected remedies will result, in some cases, in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unrestricted land use. Therefore, a statutory review will be conducted in these cases within 5 years after initiation of the remedial action to ensure that the remedies are, or will be, protective of human health and the environment.

ROD Data Certification Checklist

The following information is included in Section 2.0, the Decision Summary of this ROD.

- Contaminants of Concern (COCs) and their respective concentrations
- Baseline risk represented by the COCs
- Cleanup levels established for COCs and the basis for these levels

- Current and potential future land and groundwater use assumed by the human health risk assessment (HHRA)
- Potential future land and groundwater use available as a result of the selected remedies
- Cost estimates for selected remedies
- Criteria for remedy selection.

Additional supporting information can be found in the Administrative Record for Norton AFB, the index for which is provided in Appendix A.

Authorizing Signatures

Signature sheet for the Basewide ROD for the former Norton AFB, California. The U.S. EPA and the State of California EPA DTSC had an opportunity to review and comment on the Basewide ROD, and their concerns were addressed.

Kathryn M. Halvorson
Director, Air Force Real Property Agency
U.S. Air Force

29 Sep 05
Date

Kathleen H. Johnson
Chief, Federal Facilities and Site Cleanup Branch
Region IX, U.S. Environmental Protection Agency

29 Sept 05
Date

John Scandura
Branch Chief, Southern California Operations
Office of Military Facilities
California Department of Toxic Substances Control

Date

Gerard J. Thibeault
Executive Officer
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Date

_____ _____

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Region IX, U.S. Environmental Protection Agency

Date

_____ _____

John Scandura
Branch Chief, Southern California Operations
Office of Military Facilities
California Department of Toxic Substances Control

Date

_____ 9/30/05

Gerard J. Thibeault
Executive Officer
California Regional Water Quality Control Board

Date

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2.0 DECISION SUMMARY

This decision summary presents an overview of site characteristics for the former Norton AFB and the Basewide ROD sites, the risk analyses performed during the BWFS, the alternatives evaluated for remedial action, and the identification of the selected remedies and the associated statutory determinations.

2.1 SITE NAME, LOCATION, AND DESCRIPTION

2.1.1 History of Norton Air Force Base

The former Norton AFB property is located in the city of San Bernardino in San Bernardino County, California (see Figure 1-1). The base was commissioned in 1942 during World War II to provide aircraft maintenance support and was formally closed in 1994. The 2,105-acre base is bordered by the Santa Ana River wash to the south and light industrial and residential areas to the north, east, and west. Cities located near the base include Redlands, Rialto, Fontana, Highland, Loma Linda, Riverside, Grand Terrace, and Colton. The population of San Bernardino County is 2,099,810 based on the 2000 United States Census.

This ROD addresses remedies for IRP sites subject to the provisions of CERCLA and does not complete the corrective action termination for RCRA interim status facilities. The base was officially added to the U.S. EPA National Priorities List (NPL) on July 22, 1987 (52 Federal Register 27620), and has been assigned U.S. EPA identification CA3570024551. The U.S. EPA, California DTSC, and the U.S. Air Force signed an interagency agreement, known as the Norton AFB Federal Facility Agreement (FFA) on June 29, 1989, which governs the conduct of environmental investigation and cleanup activities. The Air Force, U.S. EPA, DTSC, and the RWQCB Santa Ana Region comprise the Base Realignment and Closure (BRAC) Cleanup Team (BCT), with the Air Force serving as lead agency.

The base has been subdivided into six separate areas for purposes of investigation and description of base activities (Figure 2-1). Since closure and redevelopment of portions of the base, many streets have been renamed.

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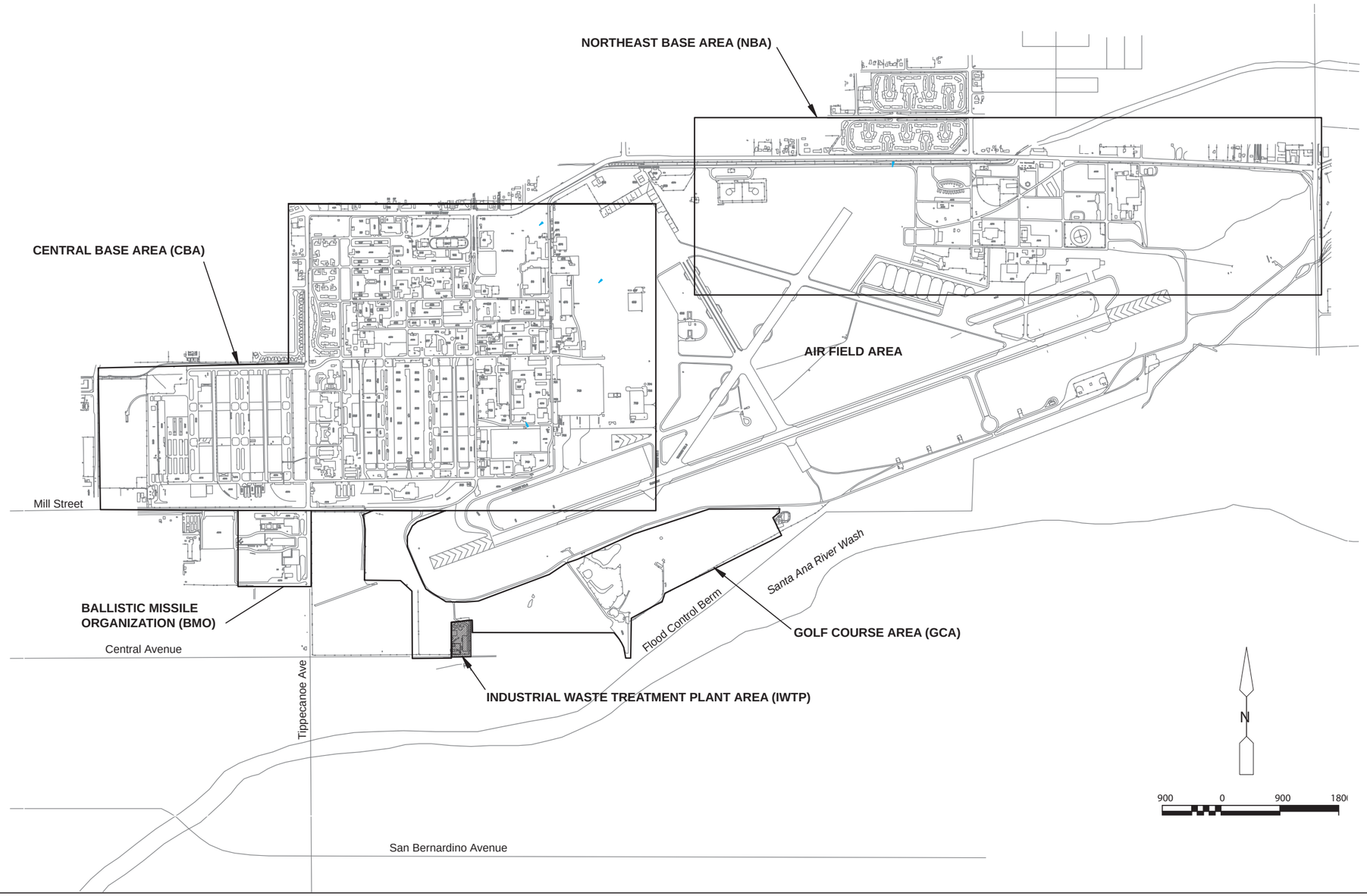

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GENERAL AREAS OF FORMER NORTON AIR FORCE BASE
SAN BERNARDINO, CALIFORNIA

Figure 2-1

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- The CBA, which reflects the western one-third of the former base, was the most developed portion of the base and included the majority of offices, warehouses, on-base housing, engineering yards, and aircraft repair facilities.

- The former Ballistic Missile Organization (BMO) complex is located south of the CBA and across Mill Street. The former BMO complex has been deeded to the Inland Valley Development Agency and a portion is occupied by the Defense Finance and Accounting Service.

- The airfield includes the runways, ramps, aircraft parking, and hangars used for aircraft repair. The airfield covers the eastern two-thirds of the former base.

- The NBA is located north of the airfield and represents the portion of the base with the oldest buildings. The original aircraft hangars and repair facilities are located within the NBA, as well as the former base Landfill No. 2.

- The Golf Course Area (GCA) is located south of the airfield and is the current site of the Palm Meadows Golf Course. Prior to construction of the golf course, the GCA was used as a landfill (IRP Site 10), liquid waste disposal (IRP Site 1), a quartermaster's salvage yard, and chemical warfare training area, among other activities.

- The former industrial waste treatment plant (IWTP) facility is located south of the GCA and was used for the treatment of liquid wastes generated as part of aircraft maintenance and repainting.

2.1.2 Physical Setting

The physical setting is summarized in the following paragraphs. Details regarding the physical setting of former Norton AFB are included in the BWFS (CDM, 2003) and other documents available in the Administrative Record/Information Repository (see Appendix A).

Topography. The natural ground surface at the former Norton AFB is generally flat with a slight gradient to the west.

Geological Setting. Former Norton AFB is located in a valley between the San Gabriel Mountains to the northwest; the San Bernardino Mountains to the north/northeast; and the Crafton Hills, the Badlands, and the Box Spring mountains to the south. The San Bernardino valley has developed into a gently sloping alluvial plain. The former base lies above more than 1,000 feet of Pleistocene and Recent age alluvium composed of granitic and gneissic detritus.

Hydrogeologic Setting. The former base is located within the Bunker Hill hydrologic basin. Three water-bearing zones (the upper, middle, and lower) and three confining members (the upper, middle, and lower) have been defined in the Bunker Hill basin and are within the uppermost 1,000 feet of unconsolidated deposits below the San Bernardino valley. Below the upper confining member is the upper aquifer, which extends to greater than 500 feet below ground surface (bgs). Below the upper aquifer are the middle and lower confining members, also low permeability zones. Both of these confining members overlie a water-bearing zone (the middle and lower zones, respectively).

The uppermost hydrogeologic unit within the Bunker Hill basin, the upper confining member and aquifer, are beneath the former base. Localized perched zones also occur above the upper confining member within the western one-third of the base. The confining layer that creates the perched zone is comprised of silt and clay soil material found between 20 and 30 feet bgs. The perched zones are not continuous and undergo seasonal drying unless recharged through surface irrigation, as is observed in the GCA. The perched confining zone does not underlie the eastern two-thirds of the base.

The upper aquifer currently extends from depths of approximately 90 to 160 feet bgs to greater than 500 feet (the lower extent of the upper aquifer at Norton AFB has not been defined). In April 2004, depth to groundwater was approximately 115 feet bgs in the western portion of the base and 160 feet bgs in the eastern portion.

The groundwater flow direction in the NBA is westerly and gradually shifts to a southerly direction at the southwest base boundary. Groundwater flow direction along the southwest base boundary varies seasonally and is affected by the production well field south of the base from which significant quantities of groundwater are extracted to meet local water supply demands during the late spring, summer, and early fall.

Surface Water. The main surface water features in the vicinity of the former base are the Santa Ana River and City Creek. The Santa Ana River forms the southern base boundary along the eastern half of the airfield and flows towards the southwest. The river typically flows during the winter, particularly following rainfall events; during the summer, the river is dry or exhibits a

very narrow flow. City Creek flows southwest toward the northern base boundary in the northeast portion of the base, and then parallels the base boundary as it flows west. Flow from City Creek eventually empties into the Santa Ana River west of the base. As a result of completion of the Seven Oaks Dam upstream of Norton AFB, the southern edge of the base is no longer within the 100-year floodplain of the Santa Ana River (U.S. Army Corps of Engineers, 1991).

Climatology. The San Bernardino valley is characterized as a semi-arid environment. The average yearly temperatures range from 49 degrees Fahrenheit (^{o}F) to 78 ^{o}F. Temperatures in June, July, and August often exceed 100°F. December and January are the coldest months, with average highs of 65°F and 64°F, respectively, and average lows of 37°F. Norton AFB experiences occasional sub-freezing nights during the winter. Rainfall in the San Bernardino area is sparse. The rainy season occurs between November and March with an average rainfall of 16 inches per year. Prevailing winds in southern California are from the northwest. A combination of persistent marine and land air layers often creates a temperature inversion that contributes to poor air quality in this region. Prevailing winds at Norton AFB reflect regional wind patterns. Annual average wind speed from the west is 3 knots. The maximum recorded wind speed is 69 knots.

2.1.3 Sensitive Ecosystems

An ecological risk assessment, including a habitat assessment (CDM, 1998a), has been performed at Norton AFB. Sensitive habitats for the base have been mapped. The federally and/or state-listed animal species that are present on the base include the burrowing owl (state-sensitive), San Bernardino Merriam's kangaroo rat (*Dipodomys merriami* spp. *parvus*, federally listed), and the loggerhead shrike (state-sensitive, federal-candidate). The Santa Ana River woolly star (*Eriastrum densiflorum* spp. *sanctorum*), a plant species endemic to the San Bernardino area, inhabits the floodplain of the Santa Ana River. Regional habitat destruction not associated with Air Force activities has limited the habitat of this plant species; however, maintenance of the clear zone of the runways of the base allows a population of the species to thrive. The Air Force has established a Conservation Management Plan (CMP) for the woolly star and San Bernardino Merriam's kangaroo rat in support of the airfield property transfer (Earth Tech, 2001a). The Air

Force has completed its work with the United States Fish and Wildlife Service (USFWS) regarding Endangered Species Act Consultations. On August 5, 2003, the USFWS issued Norton's base disposal biological opinion (*Formal Section 7 Consultation for Disposal and Reuse of the Former Norton Air Force Base, San Bernardino County, California*), which covers all of Norton AFB except IRP Site 10 and the former BMO property. The opinion concluded: "The disposal of remaining approximately 507 acres of former Norton AFB property will not result in direct effects to the woolly star or San Bernardino kangaroo rat or its critical habitat. Indirect effects due to future development by local reuse authorities are reasonably certain to occur" (USFWS, 2003). Woolly star plants occur on CMP property and along portions of the runway on the 753-acre parcel A (i.e., the runway and taxiway areas). The 268-acre CMP was developed by the Air Force to manage listed and sensitive species on the former base. Biological opinion 1-6-95-F-6 was issued to the FAA on January 3, 1995, concluding that the San Bernardino International Airport runway improvement program would not jeopardize the woolly star, and subsequent runway projects have been resolved informally with the FAA and SBIAA. In 1996, the USFWS issued 1-6-96-F-10, concluding that remediation of the Site 2 landfill would not jeopardize the woolly star.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.2.1 Summary of Previous Investigations

Several investigations were conducted from 1982 to date. The results of these investigations are referred to in the discussions for each IRP site or AOC to support conclusions in this ROD. The 1982 to 1988 investigations resulted in identification of 22 IRP sites (Engineering Science, 1982; Ecology and Environment, Inc., 1987, 1989). During closure of the base, additional records investigations resulted in identification of 73 AOCs (CDM, 1993a; U.S. Army Corps of Engineers, 1994). Contamination at the SAR and the pipeline excavation at Building 752 was identified during cleanup actions performed at these sites. Table 1-1 lists all of the IRP sites, the AOCs, the SAR, Building 752, and the NBA PCE plume. Their locations are shown on Figure 1-2. This ROD addresses 21 of the 22 IRP sites, all 73 AOCs, the SAR, Building 752, and the NBA PCE plume. The groundwater contamination (i.e., the Norton TCE plume) was addressed in the CBA OU ROD (USAF, 1993a), which includes soil sources that contributed to

the plume, as well as Site 9. The Basewide OU ROD does not further discuss the sites addressed in the CBA OU ROD (USAF 1993a).

2.2.2 Sites Closed by Previous Investigations

Table 2-1 summarizes the IRP sites and AOCs that were identified for NFA during the investigation phase of study at Norton AFB. These studies included the remedial investigation (RI) study, the basewide confirmation study (CS), expanded source investigation (ESI), the CS addendum No. 1, CS addendum No. 2, the ESI Addendum No. 1, and other related documents. The IRP and AOC sites identified in this table exhibited no soil contamination at levels that would prevent unrestricted land use and, therefore, required no remedial action (RA). Interim removal actions conducted at a few sites removed contamination to levels that permitted unrestricted land use. Table 2-1 identifies the site, provides a site description, and summarizes the activities conducted at the site and the conclusions reached at the end of the studies. These NFA sites are appropriate for unrestricted land use, and NFA is required to protect human health and the environment. These sites will not be addressed further in the Basewide ROD. NFA site locations are shown, along with all sites/AOCs, on Figure 1-2.

2.3 BASEWIDE FEASIBILITY STUDY

2.3.1 Human Health Risk Assessment

As part of the BWFS, the former Norton AFB IRP sites, AOCs, and groundwater were assessed for potential risk to human health and the environment. The potential risk to human health was evaluated according to the U.S. EPA's 1998 *Risk Assessment Guidance for Superfund: Volume 1 Human Health Evaluation Manual, Part D.* The conceptual site model for Norton AFB, depicting contaminant sources, release mechanisms, exposure pathways, and potential receptors, is shown graphically on Figure 2-2. The HHRA performed during the BWFS is summarized in the following subsections.

The baseline HHRA estimates what risks the sites pose if no action were taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the RA. This section of the ROD summarizes the results of the baseline HHRA for

Table 2-1

Description of IRP Sites and Areas of Concern Identified for No Further Action

Page 1 of 27

Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 3 – Waste Pit No. 2	Site 3 was identified during the 1982 records search as a waste pit used for disposal of industrial waste and sludges from IRP Site 1 between 1957 and 1958. The records search indicated that the waste pit was located southeast of the current golf course club house. This area is currently covered by the parking lot for the golf course.	IRP investigators attempted to locate the site through the use of a GPR survey. No anomalies indicative of a waste pit were identified. IRP investigators also drilled a soil boring and collected soil gas data. No contaminants indicative of a waste pit were detected. Additional borings were drilled during the 1991-1993 RI. Chemicals indicative of a waste pit were not encountered. Additional sampling was performed during the 1994 CS involving soil gas sampling throughout the Site 3 area, but no COCs indicative of waste were observed. Based on the findings of these three investigations, the Air Force concluded that there was no release of contamination[1], and no further action is required for Site 3.	IRP Phase II Stage 2 (Ecology and Environment, Inc., 1987); IRP Stage 3 (Ecology and Environment, Inc., 1989); RI, 15 IRP Sites OU (CDM, 1993b); BW CS Results (CDM, 1995); DD to Support NFRAP Sites 3 and 4 (CDM, 1996l)
IRP Site 4 – Waste Pit No. 1	Site 4 was identified as a waste pit used for the disposal of drummed waste. This site was reported to be located south of the airfield perimeter road, beneath what is now the east end of the cement-lined golf course irrigation reservoir.	IRP investigators attempted to locate the site through the use of a GPR survey. No anomaly indicative of a drum waste burial site was identified. During the 1991-1993 RI, soil borings were drilled adjacent to the site; no waste material was encountered. During the 1994 CS, borings were drilled through the reservoir bottom in an attempt to locate buried wastes. Results from the samples collected beneath the reservoir were not indicative of a waste pit. Based on the findings of these three investigations, the Air Force concluded that there was no release of contamination, and no further action is required for Site 4.	IRP Phase II Stage 2 (Ecology and Environment, Inc., 1987); IRP Stage 3 (Ecology and Environment, Inc., 1989); RI, 15 IRP Sites OU (CDM, 1993b); BW CS Results (CDM, 1995); DD to Support NFRAP Sites 3 and 4 (CDM, 1996l)

Table 2-1

Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 6 – Former Underground Waste Oil Tank	Site 6 was the location of six USTs used for fuel storage. It was also reported that the USTs were used for waste product storage. The tanks were removed by 1982 when the site was converted to a military vehicle service station.	Fuels were detected in soil samples collected at this site. Because Site 6 was adjacent to the Building 647 UST site, cleanup of the site was performed under the basewide UST program. Petroleum-contaminated soil was excavated from Site 6 and the adjacent Building 647 site. Soil excavation occurred to about 40 feet bgs addressing residential soil cleanup standards and the Norton AFB petroleum cleanup standards developed under the UST program. The site has been regraded to become a portion of the parking lot for the San Bernardino International Airport. The Air Force received approval from the RWQCB for the removal action. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination[2], and no further action is required for Site 6.	Summary UST Removal Program (Bechtel, 1997a); Closure Report, Former UST B647 (Bechtel, 1996)
IRP Site 8 – PCB Spill Area	Site 8 was a 1.5-acre yard once used for storing transformers and drums containing PCB fluids. In May 1982, a spill of approximately 20 to 30 gallons of fluid resulted in excavation and removal of 600 cubic yards of soil.	The site was investigated during the IRP, and during the 1991-1993 RI. It was determined that PCBs remained above industrial soil PRGs. Site evaluation was performed under an EE/CA and documented in an AM. Removal of contaminated soil was completed in November 1996. Cleanup achieved residential soil PRGs for the site area. The Air Force concluded that all contamination in excess of PRGs was addressed by the removal action, which removed the contamination, and no further action is required for IRP Site 8.	IRP Stage 3 (Ecology and Environment, Inc., 1989); RI, 15 IRP Sites OU (CDM, 1993b); EE/CA Parcel I-3 (CDM, 1996h); AM Parcel I-3 (USAF, 1996d); Closure Report IRP Site 8, AOCs 3, 23, 37, 38, and Heating Oil Line (Bechtel, 1997c)
IRP Site 11 – Fuel Sludge Drying Beds	Site 11 was used from 1958 to the mid-1970s as a disposal site for fuel sludges taken from airplane fuel tanks. The site is located on the east base boundary east of the Site 2 landfill. There is no evidence of this area being used for waste disposal purposes, either at present or in historical aerial photographs. Apparently all sludges had been removed from the location prior to initiation of the IRP in 1982.	During the RI, soil samples were collected from soil pits to identify the presence of sludge waste. Sludge material was not observed in any of the pits, and no COCs were detected above residential PRGs. Thus, the risk assessment indicated no adverse risk for the site. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use)[3], and no further action is required for Site 11.	RI, 15 IRP Sites OU (CDM, 1993b; DD NFRAP Sites 7, 11, 15, and 18 (USAF, 1996e); BWFS (CDM, 2003)

Table 2-1

Description of IRP Sites and Areas of Concern Identified for No Further Action

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 12 – Waste Pit No. 3	Site 12 was identified during the 1982 records search as being a waste pit. The site was suspected to be at the eastern edge of the golf course, west of the former Small Arms Range. Chemical and construction debris were reportedly disposed and burned at the site. The specific period of use is not known, but it is suspected to be in 1959 prior to construction of the golf course.	Site 12 was investigated numerous times between 1984 and 2003. Because of its close proximity to IRP Site 10, several investigations covered both sites. During the RI investigations GPR surveys were performed and soil borings were drilled. Soil samples were collected and analyzed for metals, PAHs, PCBs, pesticides, and dioxins. Although ash material was observed in the vicinity of the suspected waste pit, no anomalies or materials indicative of a waste pit were located. Cadmium, lead, and nickel exceeded residential PRGs in samples collected from 5 feet bgs in two soil borings. Dioxins were also detected in excess of residential PRGs. Removal and disposal of metals-contaminated soil were completed in March 2004. The Air Force concluded that all contamination in excess of residential PRGs was addressed in the removal action completed in 2004, which removed the contamination, and no further action is required at Site 12.	RI, 15 IRP Sites OU (CDM, 1993b); ESI (CDM, 1995); AM (CDM 1997d); Additional Soil Characterization (CDM, 2000d); BWFS (CDM, 2003); AM (Earth Tech, 2003); Closure Report (Earth Tech, 2004a.)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 13 – IWTP Sludge Disposal Area	Site 13 is located in the northeast corner of the IWTP, between the former IWTP facility and the golf course. IRP investigators indicated that sludge from the IWTP was disposed at the site from 1957 to 1966. Sludge deposits were reported to be 5 to 10 feet thick and covered an area of approximately 200 square feet. It is not known when the Air Force removed the sludge from the site location.	IRP investigators drilled four soil borings and collected subsurface samples. Concentrations of arsenic, cadmium, chromium, copper, lead, nickel, and zinc above industrial soil PRGs were reported for samples collected at 5 feet bgs. Surface soil samples collected during the RI confirmed metals and PCB contamination at the site. The need for a removal action was assessed in an EE/CA, and the decision to perform a soil removal was documented in an AM. Additional data were collected to assess the treatment of the waste. The contaminated soil was removed. Excavated soil was taken to the Site 2 landfill for use as a sub-base for the final cover. The removal action is documented in a closure report. Some residual contamination above residential PRGs was detected in confirmation samples, i.e., thallium. Thallium concentrations were not elevated in pre-removal action samples, nor is the thallium a COC for other areas of the base. The elevated thallium concentrations are likely an analytical laboratory artifact and not related to the site. BWFS concluded that the residual contamination does not pose a risk to human health. The Air Force concluded that all contamination in excess of residential PRGs was addressed in the 1996 removal action, which removed the contamination, and no further action is required at Site 13.	IRP Stage 3 (Ecology and Environment, 1989); RI, 15 IRP Sites OU (CDM, 1993b); EE/CA Sites 13, 14, 22 (Ogden, 1996a); AM Sites 13, 14, 22 (USAF, 1996b); Site 13 Bench-Scale Plan and SAP (Ogden, 1996b); Closure Report Sites 13 and 14 (Ogden, 1997); BWFS (CDM, 2003)
IRP Site 14 – Waste Pit No. 4	Site 14 was part of the Civil Engineering compound adjacent to Building 412. It was the location of two pits used for disposal of waste paints and thinners. The pits were filled with gravel that was periodically removed and replaced. Use of the pits had ceased by 1986.	Soil samples collected during the 1991-1993 RI indicated the presence of paint waste. Although the results of the risk assessment indicated no significant health threat due to the depth of the contamination, the recommendation was made for a cosmetic cleanup. Site cleanup options were assessed in an EE/CA and documented in an AM. Soil was excavated and disposed at the Laidlaw facility in Westmorland, California. Minor paint waste remains below 18 feet bgs. Because the original risk was acceptable, the Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for Site 14.	RI, 15 IRP Sites OU (CDM, 1993b); EE/CA Sites 13, 14, 22 (Ogden, 1996a); AM Sites 13, 14, 22 (USAF, 1996b); Closure Report Sites 13 and 14 (Ogden, 1997)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 15 – S-290 Tank	Site 15 is the location of a former 12,000-gallon UST near the corner of 102nd and 'U' Street in the northeast base area. The UST was originally part of a base service station that existed from the mid-1940s to the early 1970s. Beginning in 1975, the tank was used for the storage of waste petroleum, oils, and lubricants. The tank was removed in late 1986/early 1987.	IRP investigators collected soil gas and subsurface soil samples at the site. No compounds indicative of fuels, oils, or grease were detected. During the RI, soil borings were drilled, and soil samples were analyzed for metals and fuels. No detections exceeded residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 15.	IRP Stage 3 (Ecology and Environment, Inc., 1989); RI, 15 IRP Sites OU (CDM, 1993b); DD NFRAP Sites 7, 11, 15, and 18 (USAF, 1996e); BWFS (CDM, 2003)
IRP Site 16 – ACCS Evaporation Basins	Site 16 consisted of two evaporation basins that had been used for disposal of photographic liquid waste generated in the adjacent ACCS (formerly AAVS) building. One of the basins was used for the disposal of ammonium and sodium thiosulfate waste; the other was used for disposal of brine solutions from the AAVS power plant. The evaporation basins were constructed in 1976 and removed in 1996. The basins were located immediately east of the ACCS building and immediately west of the Site 2 landfill.	IRP investigators installed monitoring wells and sampled soil from the well boreholes. Cyanide was the only COC detected in the soil samples. During the RI, slant borings were drilled beneath the basins, and soil gas samples were collected. No chemicals indicative of photographic waste were detected in the soil or soil gas samples. The ACCS waste treatment facility was operated under an RCRA permit with the State of California. Closure of the ACCS facility involved removal of the evaporation basins. The removal action, which addressed CERCLA soil cleanup criteria, was performed during 1996. As part of the closure, the Air Force was requested to perform additional groundwater monitoring. The Air Force completed its obligations for groundwater sampling, and the site was approved by RCRA for closure without controls. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for Site 16.	IRP Stage 3 (Ecology and Environment, Inc., 1989); RCRA Closure Plan Phase II, ACCS (Morrison-Knudsen Corporation, 1996a); ACCS Closure Certification Report (Morrison-Knudsen Corporation, 1996b); RI, 15 IRP Sites OU (CDM, 1993b); WP and Field SAP Installation MW298 and Sampling ACCS Wells (CDM, 1996m); Summary Report Installation of MW298 and Sampling ACCS Wells (CDM, 1996i); Partial Closure Certification Acceptance for Hazardous Waste Management Units, ACCS (DTSC, 2002)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 18 – AVGAS Spill Areas	Site 18 was the location of fuel and oil spills related to the former fuel storage distribution facilities that included two 55,000-barrel aboveground JP-4 fuel tanks. The fuel system was removed in 1996.	During the RI, surface soil samples were collected. PAHs and lead were detected at average concentrations below the residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 18.	RI, 15 IRP Sites OU (CDM, 1993b); DD NFRAP Sites 7, 11, 15, and 18 (USAF, 1996e); BWFS (CDM, 2003)
IRP Site 20 – Low Level Radioactive Waste Burial Site	Site 20 was reported in the 1982 records search as a burial location for paints and paint materials that were used for painting of luminescent aircraft dials with radium-based paints. Verbal reports indicated that the waste was buried within a cement-filled steel pipe. There are no written reports of the waste burial activity. The location of the site was reported to be near the second tee of the golf course.	GPR investigations performed to locate the concrete bunker initiated during the IRP were repeated in 1992, and again in 1995 under the basewide radiological investigation. The 1995 investigation included excavation of geophysical anomalies at the golf course. A cement-filled structure was never encountered. The 1995 investigation report recommended no further action related to the alleged bunker. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 20.	IRP Stage 3 (Ecology and Environment, Inc., 1989); Investigation of Site 20 (Chem-Nuclear, Inc., 1992); Site 20 Bunker Investigation WP (IT Corporation, 1994); Soil Characterization Basewide Radionuclide Characterization (IT Corporation, 1996); (BWFS, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 21 – ACCS Underground Ferricyanide Tank	The Site 21 underground ferricyanide tank was one of four waste collection sumps that comprised a portion of the ACCS's photographic waste treatment process. The sump was constructed of metal and was 5 feet in diameter and 12 feet deep. The sump was taken out of service by 1991, and was removed as part of the closure of the ACCS waste treatment facility in 1996.	Soil gas and soil samples were collected during the IRP. No chemicals were detected above residential PRGs. The waste treatment tanks were removed as part of the RCRA closure of the ACCS waste treatment facility. As part of the closure, the Air Force was requested to perform additional groundwater monitoring of the site location. Cyanide was detected below the MCL during groundwater sampling and was the only chemical not related to the adjacent Site 2 landfill. Groundwater sampling for cyanide ceased in October 2000, and the site was approved for closure without controls by RCRA. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for Site 21 under CERCLA.	IRP Stage 3 (Ecology and Environment, Inc., 1989); RCRA Closure Plan Phase II, ACCS Morrison-Knudsen, 1996a; ACCS Closure Certification Report (Morrison-Knudsen Corporation, 1996b); WP and Field SAP Installation MW298 and Sampling ACCS Wells (CDM, 1996m); Summary Report Installation of MW298 and Sampling ACCS Wells (CDM, 1996i); April 1997 Groundwater Sampling Results and Data Trends for MWs, ACCS (CDM, 1997c); October 2000 Groundwater Sampling Results (Earth Tech, 2001c); Partial Closure Certification Acceptance for Hazardous Waste Management Units, ACCS (DTSC, 2002)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
IRP Site 22 – IWTP Discharge Ditch and Outfall Area	Site 22 was located along the south boundary of the base south of the IWTP facility. The site was identified by IRP investigators in 1987. Site 22 was described as the historical outfall of treated water from the IWTP. Between 1960 and 1987, treated water was discharged into a ditch leading to the Santa Ana River. Due to the sandy soils and intermittent flows of the river, the discharge did not always reach the river. In 1987, the discharge was redirected onto the base and into a seepage pond (AOC 70) west of the IWTP facility and golf course. Following closure of the base, Central Avenue (renamed Palm Meadows Drive) was extended over Site 22 to provide public access to the golf course, and the majority of the site now lies beneath a paved portion of this roadway.	During the IRP, one sediment sample was collected; the location was not specified. During the RI, surface samples were collected from nine locations; five were at the outfall location (now Palm Meadows Drive). Arsenic, cadmium, and chromium exceeded 1994 residential PRGs in samples collected from the outfall area. Prior to paving Palm Meadows Drive, which became the new off-base access to the golf course, the area was graded using standard construction practices to develop the roadway sub-base, thus mixing the Site 22 soil with the surrounding soil. The need to remediate the site was addressed in an EE/CA, and the AM identified NFA for Site 22. The NFA was based on the average exposure point concentration of arsenic (the only COC detected), which was below U.S. EPA accepted background average of 5 mg/kg. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for IRP Site 22.	EE/CA Sites 13, 14, 22 (Ogden, 1996a); AM Sites 13, 14, 22 (USAF, 1996b)
AOC 1 – Building 248	Building 248 was a radar installation for computer-tracking and early warning detection of aircraft and missiles from 1958 to 1968. After 1968, the building housed the ACCS (formerly AAVS) facility until base closure. Operations included the use, storage, and disposal of solvents, paints, cyanide, potassium, and sodium thiosulfate, and other film development-related chemicals that were treated in the waste treatment plant. Also associated with the building is a dry well that may have received waste. The concern for the AOC was the presence of waste in the dry well. The Building 248 waste treatment facility was investigated and closed under a state-led RCRA closure action.	During the CS, lead and copper were detected above residential soil PRGs in a soil sample collected from the base of the dry well. The CS recommended further evaluation under the ESI. Twelve soil samples were collected during the ESI, and residential soil PRGs were not exceeded for the AOC 1 area overall. Based on the ESI, the Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 1.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 2 – Building 258	Building 258 was used as the hazardous materials storage location for Building 248. The building consisted of a flammable materials room and an acid room. Each contained floor drains connected to two sumps. The concern for the AOC was the disposal of chemicals in the drains, sumps, and soil beneath the building.	During the CS, contents of the sumps were sampled and soil borings were drilled adjacent to the sumps. Metals, cyanide, and PAHs were reported in the sump and soil samples, but at concentrations typically below residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 2.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 3 – Building 295	Building 295 was used as an automotive repair facility and vehicle wash rack from the early 1940s until the late 1960s/early 1970s. The wash rack drained to a sump. A dirt lot now occupies the site for the former structure. The concern for the CS was to determine whether vehicle repair/washing activities had impacted soils at the location.	During the CS, soil gas samples were collected at nine locations throughout the area of the former vehicle repair/washing facilities. A sediment sample was collected from the sump, and a soil boring was drilled adjacent to the sump. No COCs were detected in the soil gas samples, and no COCs were detected above residential soil PRGs. Based on these results, the CS recommended cleaning of the sump, and no further investigation of AOC 3. The sump was cleaned out as part of a series of basewide cleanup actions. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 3.	BW CS Results (CDM, 1995); Closure Report Site 8, AOCs 3, 23, 37, 38, and the Heating Oil Line (Bechtel, 1997c); BWFS (CDM, 2003)
AOC 5 – Building 302	Building 302 was used for aircraft or vehicle maintenance throughout the history of Norton AFB. Prior to base closure, the facility was used by civilians as an auto maintenance shop, hobby shop, printing shop, photo lab, and woodworking shop. The concern for the AOC was maintenance chemicals, fuels, solvents, and oil/grease in soils.	During the CS, 17 soil gas samples were collected beneath the floor of the building. Soil borings were drilled near hydraulic lifts. No COCs were detected in any of the soil gas or soil samples. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 5.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 6 – Buildings 313, 317, 320	Building 313, which was built in the 1940s, was originally used as a warehouse. By 1962, the facility had become an automotive maintenance facility. Former Buildings 317 and 320 were located north of Building 313. Building 317 was used as an inspection/grease rack, and Building 320 was used in the 1950s and 1960s as a hobby and paint shop. The concern for the AOC was the presence of automotive chemicals, fuels, solvents, and paints in soils.	During the CS, soil and soil gas samples were analyzed for solvent and fuel chemicals. No COCs were detected in excess of residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 6.	BW CS Results (CDM, 1995; BWFS (CDM, 2003)
AOC 7 – Building 330	Building 330 was used as a warehouse from the 1940s to the 1960s. Sometime in the 1970s, the building was converted into an auto body and paint shop, including vehicle stripping, sanding, and painting. The concern for the AOC was the possibility of paint waste being disposed in soils near the building.	During the CS, soil samples were collected from suspected waste disposal locations. Metals and compounds indicative of oil and grease were detected but not in excess of residential PRGs. However, the CS recommended further investigation under the ESI. During the ESI, six additional soil borings were drilled, and samples were analyzed for metals only. Metals in some samples exceeded background levels but did not exceed residential soil PRGs overall. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 7.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c); BWFS (CDM, 2003)
AOC 8 - Building 337	Building 337 was used as an aircraft, vehicle, and equipment wash rack from the 1940s until base closure. The facility included an oil-water separator that was removed under the Norton AFB UST program. The concern for the AOC was aircraft and automotive chemical waste in soils.	During the CS, 12 soil gas samples were analyzed for AOC 8. Volatile COCs were not detected in any of the samples. Two soil borings were drilled at the oil-water separator area. PAHs and metals were detected below residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 8.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 9 - Buildings 333 and 341	Buildings 333 and 341 were used as aircraft maintenance hangars from the early 1940s to the mid-1960s, when they were converted into automotive maintenance facilities. Waste oil was drained into a 1,000-gallon UST. The concern for the AOC was maintenance waste in soils, including hydraulic fluids.	During the CS, soil and soil gas samples were collected, and no COCs were detected above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 9.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 10 – Building 336	Building 336 was a vehicle washing facility from 1973 to the late 1980s. The wastewater collection system associated with the building included two trench drains, a junction box, and a sand and grease trap. Hazardous materials were stored in a structure located to the west of the washing facility. The concern for the AOC was the presence of vehicle waste (fuels, oil/grease, metals) in soils.	During the CS, five soil gas samples were collected, and no COCs were detected above residential PRGs. A sediment sample collected from the grease trap contained benzene above the residential PRG. A soil boring was drilled next to the trap, but fuel chemicals were not detected. The grease trap was cleaned as part of general housekeeping, and the contents properly disposed. The Air Force concluded that there was no release of contamination at the site, and no further action is required for AOC 10.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 11 – Building 338	Building 338 was constructed in the 1940s and used for sanitary latrine purposes during the 1950s and 1960s. The building was later used as a battery shop until late 1991. The concern for the AOC was the disposal of battery acid waste into soils at the AOC.	During the CS, four soil borings were drilled beneath the building and analyzed for metals, pH, and nitrates. All metals detected were within background range, and the soil pH was in the neutral range. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 11.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 12 – Building 344	Building 344 was used as a film library in the 1940s and as a warehouse during the 1950s and early 1960s. In 1964, the building was converted to a dry cleaning and laundry facility. The building contained a concrete vault and trench drains. A buried drum was identified adjacent to the building. The concern at this AOC was the presence of dry cleaning solvents in soils beneath and adjacent to the building.	During the CS, five soil gas samples were collected, and two soil borings were drilled. Although no COCs were detected above residential PRGs, 7 soil and 38 soil gas samples were collected from the Building 344 vicinity during the ESI. No COCs were detected in the soil samples. TCA and PCE were detected in soil gas samples. Therefore, due to potential indoor air risk, the AOC was evaluated in the BWFS. The BWFS concluded that AOC 12 does not pose adverse risk due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required.	BWFS (CDM, 2003)
AOC 13 – Building 345	Building 345 was a civilian vehicle washing facility installed in the mid-1980s. The facility includes a wash water collection system connected to a sand/grease trap. The concern for the AOC was automotive waste (fuels, oil/grease, and metals) in soils.	Soil and soil gas samples were collected from Building 345 during the CS and ESI. No COCs were detected above residential PRGs in soil. Because of the proximity of AOCs 12 and 13, AOC 13 was evaluated for indoor air risk in the BWFS. TCA and PCE were detected but at concentrations less than those detected at AOC 12. The BWFS concluded that AOC 13 does not pose adverse risk due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required.	BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 14 – Buildings 405 and 408	Building 405 was a gasoline storage facility, and Building 408 was a motor pool shed during the 1950s and 1960s before the location of the buildings was redeveloped as officer's housing. There is a 1967 record of a UST associated with the site, but no record of a UST removal.	Soil gas surveys were conducted, and no COCs were identified. A GPR survey was conducted to locate any remaining USTs. A subsurface anomaly was reported, and the location of the anomaly was excavated. The anomaly was found to be an 8-foot-long, 4-inch-diameter cast iron pipe and a 4-inch-diameter plastic pipe. Both pipes had been filled with concrete. No UST was found at the site of the AOC. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 14.	BW CS Results (CDM, 1995); Soil Characterization, Basewide Radionuclide Characterization (IT Corporation, 1996)
AOC 15 – Building 432	Building 432 was the site of an automotive maintenance facility constructed in 1942 and removed in the late 1960s before being paved as a dormitory parking lot. The concern of the AOC was residual automotive waste in soils.	During the CS, seven soil gas samples and one soil sample were collected at AOC 15. Extremely low fuel and solvent chemicals were reported from one soil gas sample. No COCs were detected in the soil sample. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 15.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 16 – Building 435	Building 435 was the site of an engine testing and automotive maintenance facility constructed in 1942 and removed by the early 1970s before being paved as a dormitory parking lot. The concern for the AOC was residual automotive waste.	During the CS, seven soil gas samples were collected. No COCs were detected in the samples. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 16.	BW CS Results (CDM, 1995)
AOC 17 – Buildings 441 and 442	Buildings 441 and 442 were former vehicle and equipment wash rack facilities constructed in 1942 and removed by the early 1970s before being paved for a dormitory parking lot and driveway. The concern for the AOC was residual vehicle waste.	During the CS, ten soil gas samples were collected. No COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 17.	BW CS Results (CDM, 1995)
AOC 19 – Buildings 576 and 578	Buildings 576 and 578 were a former automotive repair shop and wash rack that was in operation from 1943 through the late 1960s. At the time of the CS, only the concrete foundations of the buildings remained. The concern for the AOC was the presence of automotive repair waste chemicals in soils.	During the CS, seven soil gas samples were collected and one soil sample was analyzed for fuel and solvent chemicals. One of the soil gas samples contained low levels of fuel chemicals. The soil sample did not contain detectable fuel or solvent chemicals. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 19 (CDM, 1995).	BW CS Results CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 20 - Building 635	Building 635 was a chemical and salvage warehouse that stored flammable and inflammable chemicals, poisons, and acids from 1942 to 1968. In 1968, half of the building was converted to vehicle maintenance; the other half to offices. The concern for the AOC was the presence of chemicals from the time it was used for chemical storage and for the presence of automotive repair chemical waste in soils.	During the CS, 14 soil gas samples and 4 soil samples were analyzed. Fuel and solvent chemicals were reported at low levels in one of the soil gas samples. No COCs were detected in the soil samples above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 20.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 21 – Building 638	Building 638 housed radio repair, electronics, and armament repair shops. Constructed in 1942, it was occupied by the communications squadron at the time of base closure. Because the building contained a paint spray booth, the concern for the AOC was waste paint, PCBs, and solvents used to clean electronics.	During the CS, COCs were not detected in the five soil gas samples or two soil samples collected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 21.	BW CS Results (CDM, 1995)
AOC 22 – Building 653	Building 653 housed a fueling system that stored No. 1 aircraft gasoline. The building was constructed in 1942, and its associated USTs were removed in the early 1980s. The concern for the AOC was the presence of fuel chemicals in soils.	Ten soil gas samples were analyzed during the CS. Toluene and TCE were detected at very low concentrations in one sample. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 22.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 23 – Building 655	Building 655 housed an aircraft reclamation facility and repair shop depot from 1942 to the late 1960s. Chemical use and disposal activities were reported for this building. The concern for the AOC was the presence of solvents in soils.	During the CS, 14 soil gas samples were collected, and 4 soil borings were drilled. TCE was detected, and diesel was reported for one soil sample. Based on these findings, additional investigation was performed under the ESI. A total of 52 additional soil gas samples, collected from depths between 5 and 20 feet bgs, were analyzed, with the maximum TCE concentration found beneath the central portion of the building at a depth of 20 feet bgs. Eleven soil borings were drilled, and no COCs were detected above residential PRGs. Due to indoor air risk concerns, AOC 23 was evaluated in the BWFS. The BWFS concluded that AOC 23 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 23.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 24 – Building 658	Building 658 was used as an equipment maintenance facility from 1942 to the 1960s, and later for storage, offices, and the base's printing and reproduction operations until base closure. A sump in the north portion of the building was identified as a TCE source location during the CBA TCE source investigation. Because chemical use was known to occur in this building, the concern for the AOC was the removal of TCE-contaminated soils and identification of TCE in soil beneath the southern half of the building.	As part of the TCE source remedial action for the CBA OU ROD, a sump and TCE-contaminated soil were removed in 1995, immediately north of Building 658. During the CS, TCE was detected in soil gas samples but not in any of the five soil samples. Based on the soil gas results, the study concluded that the source of TCE in soil gas had been remediated as part of the sump removal. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, and no further action is required for AOC 24.	Earth Tech, 1996a; BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 25 – Building 678	Building 678 was an armament repair facility constructed in 1943 and razed early in the 1970s. Air Force records indicate that solvents (TCE), lube oil, and carbon removers were used in the building. The concern for the AOC was the presence of solvents and petroleum hydrocarbons in soils beneath the building's former footprint.	During the CS, 12 soil gas samples were collected, and 1 soil boring was drilled. PCE was detected in one of the soil gas samples. No COCs were detected in the soil samples. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 25.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 26 – Building 695	Building 695 was used as an aircraft fuels maintenance hangar from 1942 until base closure. Fuel tanks were cleaned at the facility, and waste was discharged to an oil-water separator. The concern for the AOC was fuels in soils.	During the CS, 12 soil gas samples were collected at this AOC. COCs were not detected in any of the samples. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 26.	BW CS Results (CDM, 1995)
AOC 27 – Building 705	Building 705 was used as an engine processing facility from the 1940s to the mid-1960s when it was converted to a motor pool storage facility. Significant chemical use in the repair of aircraft engines was reported for the facility. The concern for the AOC was solvent and fuel waste remaining in soils.	During the CS, 19 soil gas samples were collected, and no COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 27.	BW CS Results (CDM, 1995)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 28 – Building 707	Building 707 was used as a rubber reclamation and repair facility from 1944 to the mid-1960s and later as a printing and publications operation until base closure. Base records indicate significant chemical use including solvents, TCE, oil, and carbon removers for the building. The concern for the AOC was the presence of solvents in soils.	During the CS, four soil gas samples were collected, and four soil borings were drilled. TCE was detected at low concentrations in soil gas, and diesel was detected in soil samples. Additional investigation of Building 707 was performed during the ESI, but no significant contamination was reported. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 28.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 29 – Buildings 723, 724, 725	Building 723 was an engine testing facility from early 1942 to the early 1980s. It was connected via pipelines to Buildings 724 and 725 that housed large USTs containing fuels. The concern for the AOC was to determine whether the USTs were present and had impacted the soil due to fuel leakage.	During the CS, a GPR survey determined that the USTs had been removed. Eleven soil gas samples were collected from the Building 724 and 725 area, and no COCs were detected. Eleven soil gas samples were collected in the Building 723 area, and low levels of benzene, toluene, and xylene were detected. Additional soil gas and soil sampling was performed during the ESI. No significant fuel contamination was reported. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 29.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c); BWFS (CDM, 2003)
AOC 30 – Building 726	Building 726 was used as an engine testing cell from the late 1940s until 1992. The building was connected to USTs for fueling engines during static testing. The concern for this AOC was the presence of fuels in soils beneath the building.	During the CS, 17 soil gas samples were analyzed for fuel chemicals. Low concentrations of fuel chemicals were detected in one sample. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use, and no further action is required for AOC 30.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 31 – Building 736	Building 736 was a hazardous test and fuels accessory facility from 1950 to the late 1960s when it was converted to a plastics shop, battery shop, mechanical equipment room, and refrigeration shop. The building included a sump and UST farm. The concern for the AOC was the leakage of chemicals and battery waste.	During the CS, TCE was reported in a soil gas sample, which warranted additional investigation of AOC 31. During the ESI, 37 soil gas samples were analyzed, and TCE was reported at a depth of 10 feet bgs. Based on an indoor air risk concern, AOC 31 was evaluated further in the BWFS. The BWFS concluded that AOC 31 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use, and no further action is required.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 32 – Building 741	Building 741 was used as a dry cleaning plant and an electronics overhaul facility from the mid-1940s through the late 1960s. The concern for this AOC was solvents in subsurface soils.	During the CS, six soil samples were analyzed for solvents and fuel chemicals. There were no detections of solvents or fuels. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 32.	BW CS Results (CDM, 1995)
AOC 34 – Building 749	Building 749 was constructed in 1944 for use in aircraft overhaul and repair. In the mid-1960s, it was converted to a warehouse and for aircraft latrine services. The concern for the AOC was solvents and fuel chemicals in subsurface soils.	During the CS, 22 soil gas samples were analyzed for solvent and fuel chemicals. Low levels of VOCs were reported in two of the samples. Eight soil borings were drilled during the CS and ESI, and low concentrations of fuel chemicals (diesel) were detected. Based on an indoor air risk concern, AOC 34 was evaluated further in the BWFS. The BWFS concluded that AOC 34 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 34.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 35 – Building 755	Building 755 was a blacksmith shop and foundry from the 1940s through the late 1960s. Metal plating operations were reported for the building. The concern for this AOC was solvents and metals in subsurface soils.	During the CS, 11 soil gas samples were analyzed for VOCs of which 8 had detectable TCE. Soil borings identified a single detection of lead in excess of the residential PRG. During the ESI, 61 soil gas samples, collected from depths ranging between 11 and 20 feet bgs, were analyzed, and TCE was found at a depth of 20 feet bgs. Eight soil borings were drilled, and all detections were below residential PRGs. Based on an indoor air risk concern, AOC 35 was evaluated further in the BWFS. The BWFS concluded that AOC 35 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 35.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 36 – Building 795	Building 795 has been used as an aircraft hangar since 1942. Various types of aircraft were repaired in the building over the course of its history. The concern for the AOC was the presence of solvents and fuels in soils beneath the hangar.	During the CS, 17 soil gas samples were collected, and one soil boring was drilled at the AOC. TCE was detected in the soil gas samples. No COCs were detected in the soil samples. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 36.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 37 – Refuse Dump Area	The Refuse Dump area was used as a collection point for general refuse and debris. It also contained a washing pad where street sweepers were cleaned. The concern for this AOC was oils, grease, fuels, hydraulic fluids, and metals from waste handling and vehicle washing.	During the CS, four surface soil and three sediment samples were collected, and two soil borings were drilled. The samples contained fuel and grease compounds and PCBs. The extent of contamination was defined during the ESI by drilling 35 soil borings. The ESI recommended removal of soil containing PCBs and petroleum chemicals above residential soil PRGs. Cleanup options were assessed in an EE/CA and documented in an AM. The soil removal action was conducted during October through December 1996. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for AOC 37.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c), EE/CA Parcel I-3 (CDM, 1996h); AM, Parcel I-3 (USAF, 1996d); Closure Report, IRP Site 8, AOCs 3, 23, 37, 38 and the Heating Oil Line (Bechtel, 1997c)
AOC 38 – C Street Outfall	The C Street Outfall represents the storm water discharge point of storm water collected in the northern CBA and northern airfield and flight line. Chemical use, aircraft cleaning, and aircraft fueling activities occurred in the area of surface water collection that discharged at the outfall. The concern for this AOC was fuels, hydraulic oils, and oil and grease in sediment in the outfall area.	During the CS, sediment, surface, and subsurface soil samples were collected. Diesel, oil, and grease and PCB compounds were detected. During the ESI, 15 soil borings were drilled to define the extent of contamination. The ESI recommended removal of soil containing petroleum and PCB chemicals above residential soil PRGs. Cleanup options were assessed in an EE/CA and documented in an AM. The soil removal action was conducted during October through December 1996. The soil removal action achieved unrestricted land use criteria. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for AOC 38.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c); EE/CA Parcel I-3 (CDM, 1996h); AM, Parcel I-3 (USAF, 1996d); Closure Report, IRP Site 8, AOCs 3, 23, 37, 38 and the Heating Oil Line (Bechtel, 1997c)

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Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 40 – Golf Course Maintenance Area	AOC 40 is located at the southern end of the former IWTP compound along the southern perimeter of the base and was used by the golf course maintenance group to store and mix a variety of pesticides, herbicides, and fungicides. Reported spills of fungicides occurred in sheds 7 and 8, and spills of arsenic-based chemicals reportedly occurred between sheds 4 and 5. Containers that had decayed because of improper storage and exposure to rain caused several spills. Additionally, a location near the southern end of Shed 7 may have been used for the disposal of waste oil.	AOC 40 was investigated under the CS and ESI. During the CS, cadmium was detected in two surface soil samples above the residential PRG, and chlordane was detected above the residential PRG in one surface soil sample. During the ESI, cadmium, chlordane, and PCBs were reported above residential soil PRG concentrations, and arsenic was detected above background at several surface and shallow (less than 5 feet bgs) subsurface soil sample locations. The overall area affected is 60,000 square feet. No groundwater contamination is associated with this site. RAs were evaluated in an EE/CA. Metal sheds, floors, foundations, and soils were removed and properly disposed off site in March 2004. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, and no further action is required for AOC 40.	BW CS Results (CDM, 1995); ESI Results (CDM, 1996c); AM (USAF, 1997a); Closure AOC 40 (Earth Tech, 2004)
AOC 41 – Lockheed Soil Pile Treatment Cell	In 1991, as part of the Building 763 refurbishing project that involved reconstruction of two hangar bays to support 747-sized aircraft, Lockheed Corporation rebuilt the hangar floors. The floor reconstruction project involved removal of the existing concrete floor and excavation of sufficient soil to pour a thicker concrete floor. The excavated soil contained the solvent TCE. Approximately 6,300 cubic yards of contaminated soil were taken to a soil treatment cell south of Mill Street and east of Tippecanoe Avenue. The concern for the AOC was residual TCE present in the soil pile and that TCE may have leached into underlying surface soils.	Prior to placement of the soil in the treatment cell, a plastic liner was placed on the ground, and perforated piping (used to aerate the soils) was laid on the plastic liner. A Lockheed Commercial Aircraft Center contractor sampled the soil prior to and after treatment to assess effectiveness of the treatment. The contractor reported finding no TCE. During the CS, six boreholes were drilled through the soil pile so that samples could be collected of the pile and underlying soils. TCE was not detected in any of the samples. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 41.	WP, Excavation and Vapor Extraction Treatment (McLaren-Hart, 1991a); Results Soil Characterization and Evaluation of Treatment and/or Disposal Options (McLaren-Hart, 1991b); Soil Treatment Cell Post Decommissioning Sampling Results (McLaren-Hart, 1992); BW CS Results (CDM, 1995)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 42 – Building 514	Building 514 was constructed in the mid-1950s for use as a chemical storage warehouse. During the period of use, the building contained acid storage rooms, a poison storage room, and a general chemical storage room. The concern for the building was the lack of available environmental data documenting no significant contamination.	During the CS, 16 soil gas samples were collected. Low levels of VOCs were detected in the soil gas samples. Four soil borings were drilled and sampled, and no COCs were detected above residential PRGs. Based on the low levels of VOCs detected, the CS recommended no further action. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 42.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 43 – Building 763 Dock, Buried Sumps	During reconstruction of the hangar bay 4 (Dock 4) floor in Building 763, Lockheed Commercial Aircraft uncovered two buried sumps that contained liquid. The sumps were covered by new pavement before their contents could be characterized. The concern for the AOC was the presence of liquid waste beneath the floor of the hangar.	During the CS, three soil borings were drilled and sampled at the locations of the sumps and analyzed for VOCs and fuels. TCE was detected in one sample, and no other COCs were detected. The TCE source area SVE remediation (as part of the CBA OU remedy) removed TCE from soil beneath Building 763, thus also removing contamination from AOC 43 where the level of contamination released was low. The CS recommended no further action. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 43.	BW CS Results (CDM, 1995); BWFS (CDM, 2003)
AOC 44 – Eastern Golf Course Ash Layer	AOC 44, in the southeastern portion of the GCA, encompasses Site 12 and is adjacent to Site 10. Air Force records indicate that, in the early 1960s, much of the area was vegetated by trees and brush, which were cut down and burned in place in order to construct the golf course. The concern for AOC 44 was to define the extent of the ash layer and to determine whether the ash was inert (i.e., indicative of burning of vegetative matter and not industrial or solid waste).	During the ESI, 144 hand-auger borings were drilled in a grid pattern throughout the eastern extent of the golf course to locate the presence of ash. Where encountered, ash was sampled for the presence of metals. Metals concentrations for the most part were within background levels for Norton AFB, indicating that the ash was from burning of vegetative matter and not waste. Elevated concentrations of metals were restricted to the areas of Sites 10 and 12 where wastes were burned. The Site 10 PAH/dioxin investigation in 2000 included portions of AOC 44. Dioxin contamination was determined to be present and was addressed in the BWFS as part of the Sites 10 and 12 evaluations. The BWFS identified no further action as the preferred alternative for AOC 44 based on the cleanup of IRP Site 10 (see Figure 2-7). The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 44.	ESI Results (CDM, 1996c); Site 10 and 12 Additional Soil Characterization (CDM, 2000e); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 45 – 500 Series Buildings	The 500-series buildings were located in the middle and south portions of the CBA. These buildings were used predominantly for supply and depot warehouses and administrative offices. There was little indication in base records that hazardous chemicals were used or disposed in these buildings. The concern for the AOC was the lack of available environmental data documenting no significant contamination.	During the CS Addendum, 126 soil gas samples were collected from the 500-series buildings area. Benzene and toluene were detected. Based on an indoor air risk concern, AOC 45 was evaluated further in the BWFS. The BWFS concluded that AOC 45 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 45.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 46 – 900 Series Buildings	The 900-series buildings were located in the westernmost edge of the CBA. These buildings were primarily used for supply and depot warehouses and administrative offices. The major exceptions were Buildings 922/942/945, Building 948 (the DRMO), and Building 976 (the entomology shop). Buildings 922/942/945 were used for the repair of Titan missiles involving small quantities of chemicals. The DRMO was the primary facility used by the base at the time of closure for the temporary storage of hazardous waste. The concern for the AOC was the lack of available environmental data documenting no significant contamination.	During the CS Addendum, 178 soil gas samples were collected from the 900-series building area. 1,1,1-TCA was detected. Two soil borings were drilled, and no solvents were detected. Based on the low level and infrequent detections of COCs, the CS Addendum recommended no further action. The DRMO facility was closed under an RCRA action, and the Air Force received closure without controls from DTSC for the DRMO facility. Building 976 was investigated as AOC 64, described below. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 46.	Results of CS Addendum No. 1 (CDM, 1996a); RCRA Closure of the DRMO Hazardous Material/Waste Storage Facility (USAF, 1996a); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 47 – Detachment 10, Ballistic Missile Organization	The Detachment 10/BMO area is located on a separate parcel of land south of the main portion of the CBA, bordered by Tippecanoe Avenue to the east and Mill Street to the north. The buildings comprising the BMO complex were constructed in the 1950s. The property was transferred to San Bernardino County in 1974 and reacquired by the Air Force in 1982. The property is currently occupied by the Defense Finance and Accounting Agency and is the only portion of Norton AFB to be retained by the military. The concern for the AOC was a former UST and a possible debris pit.	During the CS Addendum, 28 soil gas samples were collected from the BMO area. Four soil gas samples were collected, and three soil borings were drilled at the location of the former UST. No COCs were detected at the BMO or UST area. A debris pit was not encountered during exploratory soil boring. Soil gas samples collected from the vicinity of the suspected pit did not contain COCs. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 47.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 48 – Former Communication Facility	AOC 48 is a non-contiguous 30-acre parcel of land in the city of Highland, north of the northeastern boundary of Norton AFB. The property was used as a radio communications facility from 1957 to 1966 when it was decommissioned. A portion of the facility had been turned over to the city for a recreational field. The concern for the AOC was the presence of petroleum contamination in soils.	During the CS Addendum No. 1, 43 soil gas samples were collected and analyzed from the AOC 48 area. No COCs were detected. A geophysical survey was performed in the area of the former communications building to determine whether there was a UST associated with it. No UST was detected; however, the survey did identify a buried communications cable. The communications cable is to remain buried at AOC 48. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 48.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 49 - Building 248 SWAP	AOC 49 represents the SWAP associated with Building 248, the ACCS facility. The SWAP was used to store photochemicals used in the still and motion picture laboratories. The concern for the AOC was photochemical waste in soils.	During the CS Addendum No. 1, a soil boring was drilled at the SWAP to collect samples for VOC analyses. No VOCs were detected. The soil sample was analyzed for cyanide and soil pH only. Cyanide was not detected in the soil sample. The soil pH was below the neutral range for Norton AFB soils and above pH 2.0, but did not indicate contamination. The Air Force concluded that there was no release of contamination, and no further action is required at AOC 49.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 50 – Building 329 SWAP	AOC 50 is the SWAP associated with Building 329, a small metal building on a cement pad. The SWAP was used to store oil, antifreeze, and soap in 55-gallon drums. The concern for the AOC was waste chemicals in soils.	During the CS Addendum No. 1, a soil boring was drilled at the site. The sample was analyzed for solvents, fuels, petroleum compounds, PCBs, and metals. No COCs were detected above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOC 50.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 51 – Building 333 SWAP	AOC 51 is the SWAP associated with Building 333 (AOC 9) where contaminated fuel, antifreeze, waste paint, batteries, oil filters, and rags in 55-gallon drums were stored. A 30-gallon Safety-Kleen solvent tank and a flammable materials storage locker containing oils, grease, and brake fluid were also located within the SWAP. The concern for AOC 51 was petroleum, solvents, metals, and PCBs in soils.	During the CS Addendum No. 1, two soil gas samples were collected, and one soil boring was drilled at the SWAP. No COCs were detected above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 51.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 52 – Building 341 SWAP	AOC 52 was the SWAP associated with Building 341 (AOC 9). The Building 341 SWAP stored antifreeze, motor oil, transmission fluid, brake fluid, and R12 Freon. The concern for this AOC was petroleum products in soil.	During the CS Addendum No. 1, three soil gas samples were collected, and one soil boring was drilled. No COCs were detected above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 52.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 53 – Building 403 SWAP	Building 403 was used as a carpentry and paint shop by civil engineering from the 1940s to the 1990s. It contained an SWAP used for the temporary storage of mineral oils, PCBs, Freon, and oil filters in 55-gallon drums. The concern for the AOC was the presence of chemical waste in soils.	During the CS Addendum No. 1, three soil gas samples were analyzed, and a soil boring was drilled at this AOC. No COCs were detected. Based on these findings, the Air Force concluded that there was no release of contamination, and no further action is required for AOC 53.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 54 – Building 407 SWAP	Building 407 was used for the maintenance of liquid fuels equipment. The SWAP at this building stored rags, JP-4 aviation fuel, diesel, gasoline, oil, and grease in 55-gallon drums. The concern for the AOC was the presence of chemical waste in soils.	During the CS Addendum No. 1, one soil gas sample was analyzed, and one soil boring was drilled at this AOC. COCs were not detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 54.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 55 – Building 412 SWAP	Building 412 was used as a storage facility for paints and other related materials as well as a maintenance facility as part of civil engineering painting operations. Paints, acids, oils, grease, lighter fluid, lubricating oil, hydraulic oil, and sealers were stored at this SWAP. The concern for the AOC was the presence of chemical waste in soils.	During the CS Addendum No. 1, five soil gas samples were collected, and one soil boring was drilled. Acetone, methyl ethyl ketone, and PCE were reported at low concentrations in soil gas, but no COCs were detected in soil above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 55.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 56 – Building 417 SWAP	The Building 417 SWAP was used for storage of automotive waste, including Penetron, waste oil, absorbent, and batteries. The concern for the AOC was the presence of chemicals in soils.	During the CS Addendum No. 1, one soil gas sample was collected, and one soil boring was drilled. Acetone and methyl ethyl ketone were reported at low concentrations in soil gas, but no COCs were detected in soil. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 56.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 57 – Building 427 SWAP	Building 427 was used as a diesel locomotive storage shed and a fuels storage facility. Waste stored at the SWAP included mineral oil and PCBs in 55-gallon drums. The concern for the AOC was the presence of waste chemicals in soils.	During the CS Addendum No. 1, one soil boring was drilled. No COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 57.	Results of CS Addendum No. 1 (CDM, 1996a)
AOC 58 – Building 468 SWAP	Building 468 once housed a diesel-powered generator and UST. The SWAP was used for storage of compressed gas cylinders, hydraulic fluid, and spray wax. The concern for the AOC was the presence of waste chemicals in soils.	During the CS Addendum No. 1, three soil gas samples were analyzed. Acetone and methyl ethyl ketone were detected at low concentrations. Five soil borings were drilled, and a single detection of benzo(a) pyrene exceeded the residential PRG. The CS Addendum recommended additional characterization to define the extent of PAH contamination. AOC 58 was further evaluated during the ESI Addendum No. 1. Analysis of samples collected from five additional soil borings identified low levels of petroleum compounds. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 58.	Results of CS Addendum No. 1 (CDM, 1996a), Results of ESI Addendum No. 1 (CDM, 1996d); BWFS (CDM, 2003)
AOC 59 – Building 620 SWAP and AOC 68 - Building 620 Car Wash	AOC 59 was the former civilian service station and AOC 68 was the former car wash rack. The SWAP associated with the service station stored used solvents, used and drained oil filters, and used antifreeze. The car wash rack was used by personnel to clean personal vehicles. The concern for the AOC was the presence of petroleum and automotive waste chemicals in soils.	During the CS Addendum No. 1, eight soil gas samples were analyzed from the SWAP and washrack areas. Acetone and methyl ethyl ketone were reported at low concentrations. One soil boring was drilled; however, no automotive waste chemicals were detected. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOCs 59 and 68.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 60 – Building 675 SWAP	AOC 60 was the SWAP associated with Building 675, the aircraft ground equipment facility. The SWAP consisted of two small metal sheds. Materials stored at this location included hydraulic fluid, Pensolv solvent, paint waste, JP-4 fuel, diesel fuel, fuel filters, oil filters, antifreeze, and engine oil. The concern for the AOC was fuels, petroleum products, paint waste, and metals in soils.	During the CS Addendum, four soil gas samples were collected from a depth of 15 feet bgs, and five soil borings were drilled at the SWAP. TCE, ethylbenzene, and xylene were reported at low concentrations. Field instruments identified the presence of fuels in some of the soil samples. Based on the initial results, the CS Addendum recommended further investigation under the ESI Addendum field program. During the ESI Addendum, five additional soil gas samples were collected. No COCs were detected. Three additional soil borings were drilled; all detections were below residential soil PRGs. Due to indoor air risk concerns, AOC 60 was evaluated in the BWFS. The BWFS concluded that AOC 60 does not pose a risk to human health due to the inhalation pathway. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 60.	Results of CS Addendum No. 1 (CDM, 1996a); Results of ESI Addendum No. 1 (CDM, 1996d); BWFS (CDM, 2003)
AOC 61 – Building 680 SWAP	AOC 61 is the SWAP associated with the former Norton AFB fire department (Building 680). The SWAP consisted of an 8 by 8 foot area on the north side of the building. Materials stored at this location included household cleaning products, copier developer, transmission fluid, lubricants, absorbent materials containing waste oil, hydraulic fluid, diesel, and unleaded gasoline. The concern for AOC 61 was petroleum and fuel chemicals in soils.	During the CS Addendum No. 1, one soil gas sample was collected, and low levels of TCE were reported. One soil boring was drilled; however, no COCs were detected. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 61.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 62 – Building 825 SWAP	Building 825, a metal shed (approximately 32 by 27 feet in size) located behind the driving range of the golf course, is used for the storage of herbicides for golf course operations. The concern for AOC 62 was the presence of herbicide and pesticide chemicals in soils.	During the CS Addendum No. 1, two soil samples were collected. Several pesticides and herbicides were detected, but below residential PRGs. However, the CS Addendum recommended further investigation under the ESI Addendum field program. In addition to pesticides/ herbicides, soil samples were analyzed for metals and PCBs. No COCs were detected above residential soil PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 62.	Results of CS Addendum No. 1 (CDM, 1996a); Results of ESI Addendum No. 1 (CDM, 1996d); BWFS (CDM, 2003)

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Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 63 – Building 950 SWAP	AOC 63 was an SWAP associated with Building 950 located in the southeast corner of the BMO property. The SWAP consisted of three storage conex boxes each approximately 6 by 8 feet in size. The total area of the SWAP was 75 by 75 feet. Adhesives, lubricants, paints, refrigerants, waste Freon, used batteries, spent solvent, and waste oil was stored at the SWAP. The concern for the AOC was the presence of waste chemicals in soils.	During the CS Addendum No. 1, six soil gas samples were collected, and one soil boring was drilled. No COCs were detected above residential PRGs. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required at AOC 63.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 64 – Building 976 SWAP	Building 976 was the base's Entomology Shop where insecticides and herbicides were mixed and stored. The concern for the AOC was the presence of pesticides/herbicide chemicals in soils beneath the concrete slab that supported the building.	During the CS Addendum No. 1, 14 soil borings were drilled through the concrete foundation. Low levels of metals (arsenic above background in only 1 of 31 samples) and pesticides below residential PRGs were reported in the soil samples. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 64.	Results of CS Addendum No. 1 (CDM 1996a); BWFS (CDM, 2003)
AOC 65 – Delta 7 SWAP	The Delta 7 SWAP consisted of two sheds located at the northwest edge of the flight line. Materials stored at one shed included hydraulic fluid, engine oil, grease, and flammable materials; the second shed stored waste engine oil, waste hydraulic fluid, crushed cans, used batteries, and other items. The concern for the SWAP was fuels, petroleum chemicals, and metals in soils.	During the CS Addendum No. 1, four soil gas samples were collected from the vicinity of the SWAP. No COCs were detected in the samples. One soil boring was drilled; the sample collected from the surface to 1.5 feet bgs was analyzed for VOCs, SVOCs, metals, and PCBs. No VOCs or SVOCs were detected. Detected metals were within background range, and no PCBs were detected. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 65.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)
AOC 66 – Gate 10 SWAP	Gate 10 was the westernmost point of entry into Norton AFB. After this gate was no longer needed, its location was used for the storage of gasoline filters, oil, and antifreeze in 55-gallon drums. The concern for this AOC was petroleum products in soils.	During the CS Addendum No. 1 field program, one soil gas sample was analyzed, and PCE was detected. One soil boring was drilled, and the sample collected from the surface to 1.5 feet bgs was analyzed for VOCs, SVOCs, PCBs, and metals. No VOCs or SVOCs of concern were detected. Detected metals were within background range, and no PCBs were detected. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 66.	Results of CS Addendum No. 1 (CDM, 1996a); BWFS (CDM, 2003)

Table 2-1

Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 67 – Gasoline Dump Pits	AOC 67 comprised four gasoline dump pits that were reported to be associated with Building 763, two to the north of the hangar bays and two to the south of the hangar bays. The dump pits were identified in a 1944 aerial photograph; however, the history of their use is unknown.	During the CS Addendum No. 2 field program, 24 soil gas samples were collected from the location of the pits shown in aerial photographs. Several VOCs, including TCE, were detected at low concentrations. AOC 67 is adjacent to the Building 763 TCE source location, which was subjected to an SVE removal action. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is required for AOC 67.	Results of CS Addendum No. 2 (CDM, 1996b); BWFS (CDM, 2003)
AOC 68 – Building 620 Wash Pad	See AOC 59		
AOC 69 – Chemical Warfare Training Area	Early Norton AFB records indicate that chemical warfare training was conducted during the World War II era in an area that is now part of the eastern portion of the golf course. It is suspected that the area was used only during World War II because aerial photos taken during the early 1950s show no evidence of the training activity. The types and volumes of chemicals used for training are not known, but it is assumed that the chemicals were typical of the era. The concern for AOC 69 was residual chemical warfare agents in soils.	During the CS Addendum No. 2 field program, ten soil samples were collected from the former training area. The soil samples were analyzed for 16 chemicals related to warfare agents. Only two chemicals were detected: diisopropylmethylphosphonate and dimethylmethylphos-phonate. Concentrations of both chemicals were below levels of concern. The Air Force concluded that contamination does not exceed residential PRGs (unrestricted land use), and no further action is recommended for AOC 69.	Results of CS Addendum No. 2 (CDM, 1996b); BWFS (CDM, 2003)
AOC 71 – IRP Site 9 Air Ducts	AOC 71 represented the exhaust air ducts that ventilated the former electroplating room within Building 763. The Electroplating Shop, also termed IRP Site 9, was identified as a TCE source location in the CBA OU ROD. The removal action called for excavation of contaminated soils, but not ducts within the room. The concern for the AOC was the buildup of plating waste, particularly chromium, within the ventilation ducts of the building.	During the IRP Site 9 removal action, the ducts were inspected and found to contain a buildup of plating materials. As part of the Site 9 removal action, the ducts were demolished and taken to a licensed waste disposal facility. This removal action eliminated any health threat that the chemical buildup in the ducts could pose to future workers within the former plating room of Building 763. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed the contamination, and no further action is required for AOC 71.	Closure Building 658 and IRP Site 9 (Earth Tech, 1996a)

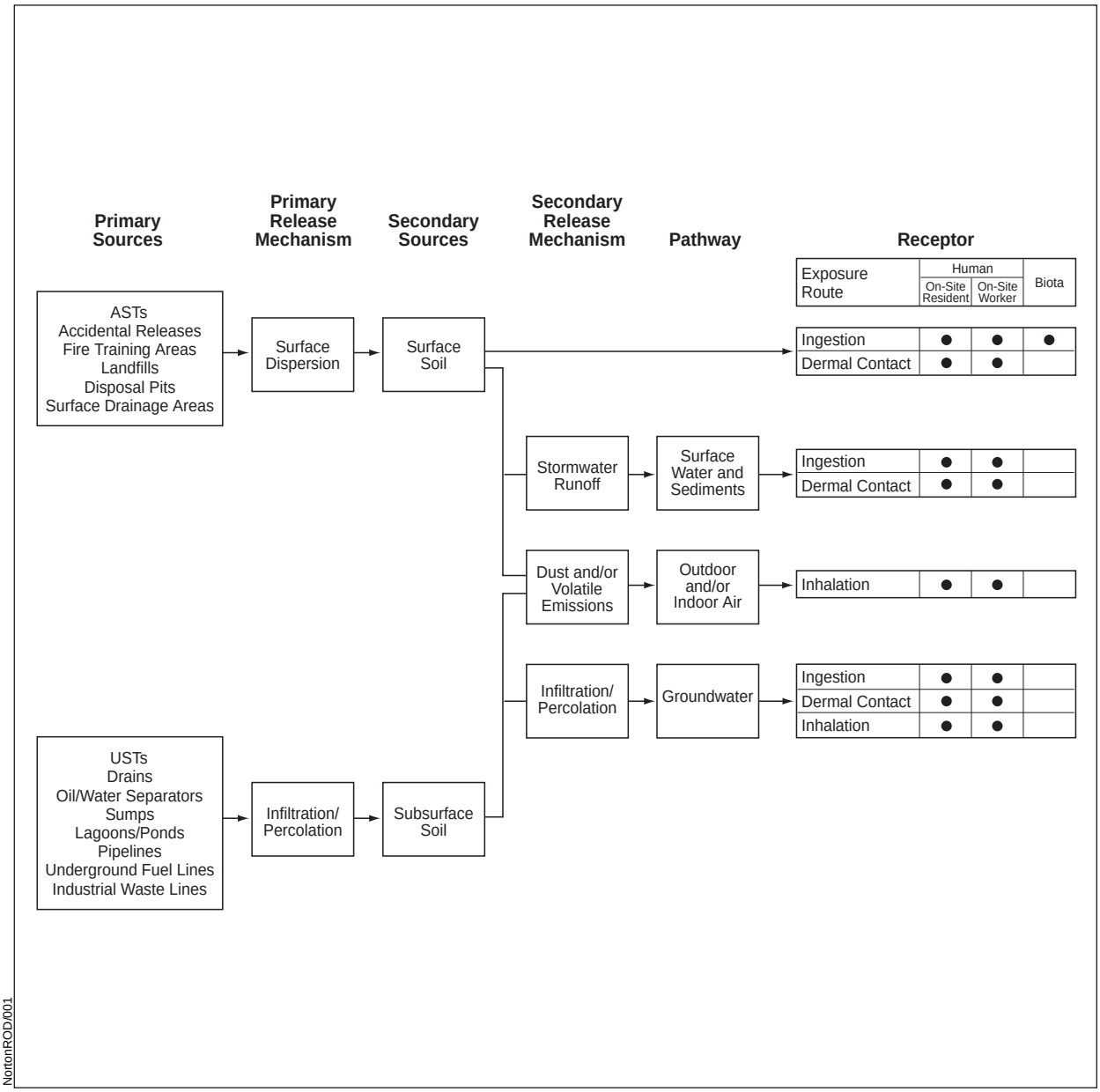
Table 2-1

Description of IRP Sites and Areas of Concern Identified for No Further Action

Site/AOC Name	Site Description	Site Activities and Conclusions	References
AOC 72 – Former Park and Wash Area for Aircraft Fueling Vehicles	AOC 72 was used for parking and washing of vehicles used to transport and transfer fuel to aircraft. Discoloration typical of a fuel spill was observed on the concrete pad of the washing facility. The concern for the AOC was the presence of fuel contamination in soil beneath the washing and storage areas.	During the CS Addendum No. 2 field program, ten soil gas samples were collected throughout the AOC 72 area. No COCs were detected. The Air Force concluded that there was no release of contamination, and no further action is required for AOC 72.	Results of CS Addendum No. 2 (CDM, 1996b)
AOC 73 – Explosive Ordnance Proficiency Training Range	AOC 73 was used for training exercises for individuals needing to maintain their military explosives handling certificates. Training exercises involved detonation of a small explosives device (less than 2.5 pounds) at a pit within a small circular sandbag barrier. The concern for the AOC was explosives waste in soils.	Because this AOC involved the investigation of explosives and explosives waste, the work was performed under the guidance of a separate work plan approved by the Air Force Safety Board. Fieldwork involved surveying the entire 600-foot-diameter range and the 10-foot-diameter demolition pit using geophysical equipment to locate buried metal debris. All metal debris was excavated to identify its origin. The majority of the metal objects were aircraft parts. No explosive waste material was identified. Soil samples from the demolition pit were collected and analyzed for explosive chemical residues. No chemicals were detected. Based on the results of the site clearance activities, the report for AOC 73 has been cleared. The Air Force concluded that all contamination in excess of residential PRGs was addressed by the removal action, which removed contamination, and no further action is required for AOC 73.	WP EOD Clearance, AOC 73 (CDM and Applied Technology Group, 1996); EOD Proficiency Training Range (AOC 73) Clearance Report (CDM and Applied Technology Group, 1997)

Notes: (1) No release of contamination = no contaminants of concern were detected.
(2) Removal action removed contamination = contamination was removed to below screening or background levels.
(3) Contamination does not exceed residential PRGs (unrestricted land use) = contamination was below screening or background levels.

AAVS	Air Force Audio Visual Services
ACCS	Air Combat Camera Services
AFB	Air Force Base
AM	Action Memorandum
AOC	Area of Concern
AVGAS	aviation gasoline
bgs	below ground surface
BMO	Ballistic Missile Organization
BWFS	Basewide Feasibility Study
CBA	Central Base Area
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	chemicals of concern
CS	confirmation study
DCB	dichlorobenzene
DD	decision document
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
EE/CA	engineering evaluation/cost analysis
ESI	expanded source investigation
GCA	Golf Course Area
GPR	ground-penetrating radar
ICs	institutional controls
IRP	Installation Restoration Program
IWTP	Industrial Waste Treatment Plant
JP	jet propulsion fuel
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
NFRAP	No Further Response Action Planned
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
pH	hydrogen ion concentration
PPL	priority pollutant list
PRG	preliminary remediation goal
RA	remedial action
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SBIAA	San Bernardino International Airport Authority
SVOC	semivolatile organic compound
SWAP	Satellite Waste Accumulation Point
SVE	soil vapor extraction
TCA	trichloroethane
TCE	trichloroethylene
UST	underground storage tank
VOC	volatile organic compound



Conceptual Site Model
Norton ROD

Figure 2-2

the former Norton AFB. The HHRA is based upon the data presented in the site summaries in Section 2.5. The HHRA was performed only for sites with residual soil contaminant concentrations in excess of residential preliminary remediation goals (PRGs) and for groundwater concentrations in excess of the maximum contaminant level (MCL). The sites included in the HHRA are IRP Sites 1, 5, 7, 10, 12, 13, and 19; AOCs 4, 18, 33, 39, 40, and 70; the SAR; and the Building 752 exterior. Human health risks associated with indoor air inhalation at AOCs 12/13, 18, 23, 31, 33, 34, 35, 45, and 60 were also evaluated.

2.3.1.1 Identification of Chemicals of Concern

The BWFS used the U.S. EPA Region IX 2000 residential PRGs as a screening tool to determine whether a site requires a risk evaluation and to identify COCs at each site. U.S. EPA Region IX 2000 residential PRGs are listed on Table 2-2 for the Norton AFB COCs. Site-specific COCs, the range of detected concentrations, and the frequency of detection for each COC are provided in the site summaries in Section 2.5. Sites addressed in the HHRA have at least one chemical present at a concentration that exceeds a residential PRG, or exceeds the established background concentration in the case of metals. Background concentrations of metals for Norton AFB are listed on Table 2-3, and a detailed discussion of the criteria used to establish them are included in the RI. If no chemical exceeded a residential PRG (or background for metals) at a site, then the site was determined not to pose an adverse risk to human health and was eliminated from consideration in the risk assessment. If any chemical was detected above residential PRGs at a site, then all chemicals with a detected concentration within 1/100th of their respective PRGs were designated as COCs. The exception to this consideration is for metals. Any metal detected at a concentration below background is not considered to be a COC.

2.3.1.2 Exposure Assessment

Exposure assessment is the determination of the magnitude, frequency, duration, and route of exposure. Populations that currently or potentially may contact chemicals at Norton AFB were identified along with potential routes of exposure (contact with a chemical). Magnitude is determined by estimating the amount, or concentration, of the chemical at the point of contact over a specified time period, or exposure duration, as well as intake, or dose, of the chemical.

Table 2-2

Former Norton AFB BWFS Contaminants of Concern and Soil Preliminary Remediation Goals[1] Unrestricted Land Use Scenario

Contaminant of Concern[2]	Residential Soil Preliminary Remediation Goal (mg/kg)	Contaminant of Concern[2]	Residential Soil Preliminary Remediation Goal (mg/kg)
Benzene	0.65	PCBs	0.022
Chlorobenzene	150	Dioxins/Furans	0.0000039
1,2-Dichlorobenzene	370	Chlordane	1.6
1,4-Dichlorobenzene	3.4	Antimony	31
cis-1,2-Dichloroethylene	43	Arsenic	1.53
trans-1,2-Dichloroethylene	63	Beryllium	150
Ethylbenzene	230	Cadmium	9.0
Toluene	520	Total Chromium	210
Tetrachloroethylene	5.7	Copper	2,900
Trichloroethylene	2.8	Lead	400
Xylene	210	Mercury	23
Benzo(a)pyrene	0.062	Nickel	150
Benz(a)anthracene	0.62	Selenium	390
Benzo(b)fluoranthene	0.62	Silver	390
Benzo(k)fluoranthene	0.61	Thallium	5.2
Chrysene	6.1	Zinc	23,000
Indeno(1,2,3-CD)pyrene	0.62	Cyanide	11
Naphthalene	56	Radium-226	0.193 pCi/g

Notes:

[1]U.S. EPA, Region IX PRGs, 2000, except for Radium-226 that is from OSWER No. 9355.01-83A

[2]As determined through the evaluation of IRP sites and AOCs included in the BWFS

[3]Norton AFB soil background concentration

mg/kg = milligram per kilogram

PCB = polychlorinated biphenyl

pCi/g = picoCuries per gram

Table 2-3

Background Concentrations of Metals in Norton AFB Surface and Subsurface Soils

Element	Range in Surface Soil	95% UCL of the Mean	Range in Subsurface Soil	95% UCL
Antimony	9.6UN-10.3UN[1]	5.2[2]	2.1U-12.1U	6.4[2]
Arsenic	0.24B-1.8B	1.5	0.20U-1.2U	1.0
Beryllium	0.3B-0.64B	0.7	0.16U-1.1B	0.7
Cadmium	0.39U-2.4	2.0	0.39U-1.1B	1.0
Chromium	8.3-41.2	33.1	1.8-44.6	32.9
Copper	7.2-17.9	17.4	0.85U-28.7	21.0
Lead	11-87.8	104.0	0.93-29.4	14.3
Mercury	0.1U-0.33	0.3	0.08U-1.0U	0.5[2]
Nickel	4.4B-18.9	16.3	0.75U-23.3	21.4
Selenium	0.19U-0.21U	0.4[2]	0.16U-1.1U	0.6[2]
Silver	0.58U-0.62U	0.6[2]	0.59U-1.1U	0.5[2]
Thallium	0.39UW-0.4U	0.2[2]	0.14U-1.0U	0.4[2]
Zinc	51.4-125	115.0	10.2-102	82.0

Notes:

[1] Data Qualifiers: B – Reported value was obtained from a reading that was less than the Contract Required Reporting limit, but greater than or equal to the instrument detection limit.
N – Spiked sample recovery was not within control limits.
U – Element was analyzed for, but not detected. The numerical value is the detection limit.
W – Post-digestion spike for Furnace Atomic Absorption analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.

[2] Developed from 50% of detection limit values.

UCL = upper confidence limit

All concentrations are milligrams per kilogram (mg/kg)

The exposure scenarios addressed in the BWFS HHRA include current land use as commercial/industrial, future land use as commercial/industrial, and future land use as unrestricted. The potential receptors evaluated for each site include hypothetical future residents and current and future commercial/industrial workers. The potential receptors were selected based on the anticipated current and future land uses. While the anticipated current and future land uses at Norton AFB are commercial and/or industrial, the BWFS evaluated the unrestricted land-use scenario to assess whether restrictions to land usage are necessary. Receptors such as visitors (golfers), utility workers, or other short-term construction workers were not evaluated because they would only be present intermittently. The residual soil concentrations do not pose an acute exposure risk, and the visitors will not have a higher degree of exposure than current workers, future industrial workers, or future residents.

For an exposure pathway to be complete, a source, a mechanism of contaminant release, a transport medium, a potential receptor, and an exposure route must be present. Potential exposure to soils was considered within a conservative depth range of 0 to 2 feet bgs for surface soils, and 0 to 20 feet bgs for sites with subsurface soil contamination. The exposure pathways that were considered in the BWFS HHRA were incidental soil ingestion, dermal contact with contaminants in soil, inhalation of soil particulates, inhalation of volatiles emitted from soil, ingestion of groundwater, dermal adsorption of groundwater during bathing, and inhalation of volatiles during household uses of groundwater.

The exposure point concentration is defined as the average concentration contacted at the exposure point(s) over the duration of the exposure period. Exposure point concentrations for soil were designated based upon the 95 percent upper confidence limit (UCL^{95}) of the mean concentration for each COC, consistent with the U.S. EPA's 1998 *Risk Assessment Guidance for Superfund*. Groundwater exposure point concentrations were calculated using the maximum concentration of each COC reported in April 1998.

Dose estimates were calculated for each COC and exposure pathway using exposure factors associated with the reasonable maximum exposure scenario. Dose is defined as the average amount of chemical systemically absorbed by the body over a given period of time. For noncarcinogenic effects, the dose is averaged over the period of exposure and is referred to as the

average daily dose (ADD). For carcinogenic effects, the dose is averaged over a 70-year lifetime and is referred to as the lifetime average daily dose (LADD).

Details regarding the computation of exposure point concentrations and dose estimates are provided in the BWFS HHRA.

2.3.1.3 Toxicity Assessment

The dose-response (i.e., toxicity) assessment is the process of characterizing the relationship between the dose of a chemical and the anticipated incidence of adverse health effect (i.e., response) in an exposed population. U.S. EPA uses dose-response data to establish "maximally acceptable" levels of daily human exposure for noncarcinogenic chemicals. Carcinogenic potency is a measure of the relationship between dose and cancer incidence. The following sections discuss the noncarcinogenic and carcinogenic risk criteria for the COCs.

Reference Dose (Noncarcinogenic Effects)

Oral and inhalation reference doses (RfDs) are derived from human or animal studies in which a threshold effect or no-effect level has been identified. An RfD is an average daily dose that is not expected to cause adverse health effects in even the most sensitive of individuals. U.S. EPA's, and where more restrictive DTSC's, RfDs were used to evaluate the noncarcinogenic health hazards. The RfDs used were taken from the U.S. EPA's *Integrated Risk Information System* (IRIS) and California EPA's *Cancer Potency Values* (2001) and *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (2002). For values not found in IRIS or DTSC's website, data from the *Health Effects Assessment Summary Tables FY97 Update* (U.S. EPA 540-097-036) were used. For the BWFS HHRA and consistent with U.S. EPA guidance, the oral RfD was used to represent the dermal RfD. Where inhalation toxicity criteria were not available, oral toxicity criteria were used. The non-cancer toxicity data used in the risk assessment for soil and groundwater oral/dermal exposure and inhalation are presented in Tables 2-4 and 2-5, respectively. Because carcinogens also commonly evoke noncarcinogenic effects, RfDs are sought for all chemicals carried through the risk assessment, including carcinogens. When RfDs were not available, surrogate values were used as appropriate.

Table 2-4

Non-Cancer Toxicity Data – Oral/Dermal

Chemical	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor[1]	Adjusted Dermal RfD[2]	Units	Primary Target Organ/Critical Effect	Combined Uncertainty/ Modifying Factors	Sources of RfD[2]	Dates of RfD (MM/YY)
ORGANICS										
1,1,1-Trichloroethane	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,1-Dichloroethene	Chronic	9.0E-03	mg/kg-day	N/A	9.0E-03	mg/kg-day	Liver lesions	1000	IRIS	02/02
1,2-Dichlorobenzene	Chronic	9.0E-02	mg/kg-day	N/A	9.0E-02	mg/kg-day	NOEL	1000	IRIS	02/02
1,2-Dichloroethane	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,2-Dichloroethene (cis)	Chronic	1.0E-02	mg/kg-day	N/A	1.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,2-Dichloropropane	Chronic	1.1E-03	mg/kg-day	N/A	1.1E-03	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,4-Dichlorobenzene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
Aldrin	Chronic	3.0E-05	mg/kg-day	N/A	3.0E-05	mg/kg-day	Liver toxicity	1000	IRIS	02/02
Anthracene	Chronic	3.0E-01	mg/kg-day	N/A	3.0E-01	mg/kg-day	NOEL	3000	IRIS	02/02
Aroclor-1232	Chronic	2.0E-05	mg/kg-day	N/A	2.0E-05	mg/kg-day			RfD for 1254 used as surrogate	
Aroclor-1248	Chronic	2.0E-05	mg/kg-day	N/A	2.0E-05	mg/kg-day			RfD for 1254 used as surrogate	
Aroclor-1254	Chronic	2.0E-05	mg/kg-day	N/A	2.0E-05	mg/kg-day	Eye, Meibomian glands, nails and immune system	300	IRIS	02/02
Aroclor-1260	Chronic	2.0E-05	mg/kg-day	N/A	2.0E-05	mg/kg-day			RfD for 1254 used as surrogate	
Benzene	Chronic	3.0E-03	mg/kg-day	N/A	3.0E-03	mg/kg-day			Region IX PRGs	11/00
Benzo(a)anthracene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(a)pyrene (cPAHs)	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(b)fluoranthene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(k)fluoranthene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Bromodichloromethane	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Kidney (cytomegaly)	1000	IRIS	02/02
Carbazole	Chronic	N/A	mg/kg-day	N/A	N/A	mg/kg-day			N/A	N/A
Carbon tetrachloride	Chronic	7.0E-04	mg/kg-day	N/A	7.0E-04	mg/kg-day	Liver	1000	IRIS	03/02
Chlordane	Chronic	5.0E-04	mg/kg-day	N/A	5.0E-04	mg/kg-day	Liver necrosis	300	IRIS	02/02
Chlorobenzene	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Histopathologic changes in liver	1000	IRIS	02/02
Chlorobenzilate	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Weight loss	300	IRIS	02/02

Table 2-4

Non-Cancer Toxicity Data – Oral/Dermal

Table 2 of 3

Chemical	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor[1]	Adjusted Dermal RfD[2]	Units	Primary Target Organ/Critical Effect	Combined Uncertainty/ Modifying Factors	Sources of RfD[2]	Dates of RfD (MM/YY)
Chrysene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
DDD	Chronic	N/A	mg/kg-day	N/A	N/A	mg/kg-day	N/A	N/A	IRIS	02/02
DDT	Chronic	5.0E-04	mg/kg-day	N/A	5.0E-04	mg/kg-day	Liver	100	IRIS	02/02
Dibenzo(a,h)anthracene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Dibromochloromethane	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Liver lesions	1000	IRIS	02/02
Dieldrin	Chronic	5.0E-05	mg/kg-day	N/A	5.0E-05	mg/kg-day	Liver lesions	100	IRIS	02/02
Dioxins (2,3,7,8-TCDD)	Chronic	1.0E-08	mg/kg-day	N/A	1.0E-08	mg/kg-day	N/A	N/A	CalEPA	03/02
Ethylbenzene	Chronic	1.0E-01	mg/kg-day	N/A	1.0E-01	mg/kg-day	Liver and kidney	1000	IRIS	02/02
Fluoranthene	Chronic	4.0E-02	mg/kg-day	N/A	4.0E-02	mg/kg-day	Liver, blood, and kidney	3000	IRIS	02/02
B-HCH	Chronic	3.0E-04	mg/kg-day	N/A	3.0E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Hexachlorobenzene	Chronic	8.0E-04	mg/kg-day	N/A	8.0E-04	mg/kg-day	Liver lesions	100	IRIS	02/02
Indeno(1,2,3-cd)pyrene	Chronic	3.0E-02	mg/kg-day	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Methyl-tert butyl ether	Chronic	N/A	mg/kg-day	N/A	N/A	N/A	N/A	N/A	IRIS	02/02
Naphthalene	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Decreased body weight	3000	IRIS	02/02
Tetrachloroethene	Chronic	1.0E-02	mg/kg-day	N/A	1.0E-02	mg/kg-day	Liver and weight loss	1000	IRIS	02/02
Toluene	Chronic	2.0E-01	mg/kg-day	N/A	2.0E-01	mg/kg-day	Liver and kidney	1000	IRIS	02/02
Trichloroethene	Chronic	6.0E-03	mg/kg-day	N/A	6.0E-03	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
Trichlorofluoromethane	Chronic	3.0E-01	mg/kg-day	N/A	3.0E-01	mg/kg-day	N/A	1000	IRIS	02/02
Vinyl Chloride	Chronic	3.0E-03	mg/kg-day	N/A	3.0E-03	mg/kg-day	Liver	30	IRIS	02/02
Xylene (total)	Chronic	2.0E+00	mg/kg-day	N/A	2.0E+00	mg/kg-day	Hyperactivity, longevity, and weight loss	100	IRIS	02/02
METALS/ INORGANICS										
Antimony	Chronic	4.0E-04	mg/kg-day	N/A	4.0E-04	mg/kg-day	Longevity, blood glucose and cholesterol levels	1000	IRIS	02/02
Arsenic	Chronic	3.0E-04	mg/kg-day	N/A	3.0E-04	mg/kg-day	Skin, hyperpigmentation and keratosis	3	IRIS	02/02

Table 2-4

Non-Cancer Toxicity Data – Oral/Dermal

Table 3 of 3

Chemical	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor[1]	Adjusted Dermal RfD[2]	Units	Primary Target Organ/Critical Effect	Combined Uncertainty/ Modifying Factors	Sources of RfD[2]	Dates of RfD (MM/YY)
Barium	Chronic	7.0E-02	mg/kg-day	N/A	7.0E-02	mg/kg-day	Kidney	3	IRIS	02/02
Beryllium	Chronic	2.0E-03	mg/kg-day	N/A	2.0E-03	mg/kg-day	Small intestinal lesions	300	IRIS	02/02
Cadmium	Chronic	5.0E-04	mg/kg-day	N/A	5.0E-04	mg/kg-day	Proteinuria	10	IRIS	02/02
Chromium	Chronic	1.5E+00	mg/kg-day	N/A	1.5E+00	mg/kg-day	NOEL	1000	IRIS	02/02
Copper	Chronic	3.7E-02	mg/kg-day	N/A	3.7E-02	mg/kg-day			Region IX PRGs	11/00
Cyanide	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Weight loss, thyroid effects, and myelin degeneration	N/A	IRIS	02/02
Mercury	Chronic	3.0E-04	mg/kg-day	N/A	3.0E-04	mg/kg-day	Autoimmune effects	1000	IRIS	02/02
Nickel	Chronic	2.0E-02	mg/kg-day	N/A	2.0E-02	mg/kg-day	Decreased body and organ weight	300	IRIS	02/02
Selenium	Chronic	5.0E-03	mg/kg-day	N/A	5.0E-03	mg/kg-day	Selenosis-effects to blood, skin, nails, CNS, liver, teeth	3	IRIS	02/02
Silver	Chronic	5.0E-03	mg/kg-day	N/A	5.0E-03	mg/kg-day	skin, argyria	3	IRIS	02/02
Thallium	Chronic	8.0E-05	mg/kg-day	N/A	8.0E-05	mg/kg-day	Increased levels of LDH and SGOT in blood	3000	IRIS	02/02
Vanadium	Chronic	7.0E-03	mg/kg-day	N/A	7.0E-03	mg/kg-day	N/A	100	HEAST	07/97
Zinc	Chronic	3.0E-01	mg/kg-day	N/A	3.0E-01	mg/kg-day	Decrease in erythrocyte superoxide dismutase	3	IRIS	02/02

Notes:
(1) Refer to RAGS, Part A
(2) RfD is for mercuric chloride

N/A = not available
Cal EPA = California EPA
cPAHs = carcinogenic PAHs
HEAST = Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System
mg/kg = milligrams per kilogram
NOEL = no observed effect level
Region IX PRGs = EPA Region IX preliminary remediation goal table for 2000

Table 2-5

Non-Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units[1]	Adjusted Inhalation RfD	Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfC:RfD	Dates (MM/YY)
ORGANICS									
1,1,1-Trichloroethane	Chronic	1.0E+00	mg/cu.m	2.9E-01	mg/kg-day	N/A	N/A	CalEPA	03/02
1,1-Dichloroethene	Chronic	7.0E-02	mg/cu.m	2.0E-02	mg/kg-day	N/A	N/A	CalEPA	03/02
1,2-Dichlorobenzene	Chronic	2.0E-01	mg/cu.m	5.7E-02	mg/kg-day	Weight loss	1000	HEAST	07/97
1,2-Dichloroethane	Chronic	N/A	N/A	1.4E-03	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,2-Dichloroethene (cis)	Chronic	N/A	N/A	1.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,2-Dichloroethene (trans)	Chronic	N/A	N/A	2.0E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
1,2-Dichloropropane	Chronic	4.0E-03	mg/cu.m	1.1E-03	mg/kg-day	Nasal mucosa	300	IRIS	02/02
1,4-Dichlorobenzene	Chronic	8.0E-01	mg/cu.m	2.3E-01	mg/kg-day	Liver	100	IRIS	02/02
Aldrin	Chronic	N/A	N/A	3.0E-05	mg/kg-day			Oral RfD	
Anthracene	Chronic	N/A	N/A	3.0E-01	mg/kg-day			Oral RfD	
Aroclor-1232	Chronic	1.2E-03	mg/cu.m	3.4E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Aroclor-1248	Chronic	1.2E-03	mg/cu.m	3.4E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Aroclor-1254	Chronic	1.2E-03	mg/cu.m	3.4E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Aroclor-1260	Chronic	1.2E-03	mg/cu.m	3.4E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Benzene	Chronic	6.0E-02	mg/cu.m	1.7E-02	mg/kg-day	N/A	N/A	CalEPA	03/02
Benzo(a)anthracene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(a)pyrene (cPAHs)	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(b)fluoranthene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Benzo(k)fluoranthene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Bromodichloromethane	Chronic	N/A	N/A	2.0E-02	mg/kg-day			Oral RfD	
Carbazole	Chronic	N/A	N/A	N/A	mg/kg-day	N/A	N/A	N/A	
Carbon tetrachloride	Chronic	4.0E-02	mg/cu.m	1.1E-02	mg/kg-day	N/A	N/A	CalEPA	03/02
Chlordane	Chronic	7.0E-04	mg/cu.m	2.0E-04	mg/kg-day	Liver	1000	IRIS	02/02
Chlorobenzene	Chronic	N/A	N/A	1.7E-02	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
Chrysene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	

Table 2-5

Non-Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units[1]	Adjusted Inhalation RfD	Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfC:RfD	Dates (MM/YY)
DDD	Chronic	N/A	N/A	N/A	mg/kg-day	N/A	N/A	N/A	
DDT	Chronic	N/A	N/A	5.0E-04	mg/kg-day			Oral RfD	
ibenzo(a,h)anthracene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Dibromochloromethane	Chronic	N/A	N/A	2.0E-02	mg/kg-day			Oral RfD	
Dioxins (2,3,7,8-TCDD)	Chronic	4.0E-08	mg/cu.m	1.1E-08	mg/kg-day	N/A	N/A	CalEPA	03/02
Ethylbenzene	Chronic	1.0E+00	mg/cu.m	2.9E-01	mg/kg-day	dev toxicity	300	IRIS	02/02
Fluoranthene	Chronic	N/A	N/A	4.0E-02	mg/kg-day			Oral RfD	
B-HCH (beta-BHC)	Chronic	1.0E-03	mg/cu.m	3.0E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Hexachlorobenzene	Chronic	2.8E-03	mg/cu.m	8.0E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Indeno(1,2,3-cd)pyrene	Chronic	N/A	N/A	3.0E-02	mg/kg-day			RfD for pyrene used as surrogate	
Methyl-tert butyl ether	Chronic	3.0E+00	mg/cu.m	8.6E-01	mg/kg-day	Liver, kidney, eye	100	IRIS	02/02
Naphthalene	Chronic	3.0E-03	mg/cu.m	8.6E-04	mg/kg-day	Nasal effects	3000	IRIS	02/02
Tetrachloroethene	Chronic	3.5E-02	mg/cu.m	1.0E-02	mg/kg-day	N/A	N/A	CalEPA	03/02
Toluene	Chronic	3.0E-01	mg/cu.m	8.6E-02	mg/kg-day	N/A	N/A	CalEPA	03/02
Trichloroethene	Chronic	6.0E-01	mg/cu.m	1.7E-01	mg/kg-day	N/A	N/A	CalEPA	03/02
Trichlorofluoromethane	Chronic	N/A	N/A	2.0E-01	mg/kg-day	N/A	N/A	Region IX PRGs	11/00
Vinyl Chloride	Chronic	1.0E-01	mg/cu.m	2.9E-02	mg/kg-day	Liver	30	IRIS	02/02
Xylene	Chronic	7.0E-01	mg/cu.m	2.0E-01	mg/kg-day	N/A	N/A	CalEPA	03/02
METALS/INORGANICS									
Antimony	Chronic	2.0E-04	mg/cu.m	5.7E-05	mg/kg-day	N/A	N/A	CalEPA	03/02
Arsenic	Chronic	3.0E-05	mg/cu.m	8.6E-06	mg/kg-day	N/A	N/A	CalEPA	03/02
Barium	Chronic	5.0E-04	mg/cu.m	1.4E-04	mg/kg-day	Fetotoxicity	1000	HEAST	07/97
Beryllium	Chronic	7.0E-06	mg/cu.m	2.0E-06	mg/kg-day	N/A	N/A	CalEPA	03/02
Cadmium	Chronic	2.0E-05	mg/cu.m	5.7E-06	mg/kg-day	N/A	N/A	CalEPA	03/02
Chromium	Chronic	N/A	N/A	1.5E+00	mg/kg-day			Oral RfD	N/A
Copper	Chronic	2.4E-03	mg/cu.m	6.9E-04	mg/kg-day	N/A	N/A	CalEPA	03/02
Cyanide	Chronic	9.0E-03	mg/cu.m	2.6E-03	mg/kg-day	N/A	N/A	CalEPA	03/02

Table 2-5

Non-Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units[1]	Adjusted Inhalation RfD	Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfC:RfD	Dates (MM/YY)
Lead	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury[2]	Chronic	9.0E-05	mg/cu.m	2.6E-05	mg/kg-day	N/A	N/A	CalEPA	03/02
Nickel	Chronic	5.0E-05	mg/cu.m	1.4E-05	mg/kg-day	N/A	N/A	CalEPA	03/02
Selenium	Chronic	2.0E-02	mg/cu.m	5.7E-03	mg/kg-day	N/A	N/A	CalEPA	03/02
Silver	Chronic	N/A	N/A	5.0E-03	mg/kg-day			Oral RfD	N/A
Thallium	Chronic	N/A	N/A	8.0E-05	mg/kg-day			Oral RfD	N/A
Vanadium	Chronic	N/A	N/A	7.0E-03	mg/kg-day			Oral RfD	N/A
Zinc	Chronic	3.5E-02	mg/cu.m	1.0E-02	mg/kg-day	N/A	N/A	CalEPA	03/02

Notes:
(1) Source of conversion from units of mg/cubic meter to mg/kg-day. mg/kg-day = (mg/cu m) x 20 cu. m/day x 1/70 kg.
(2) RfD is for elemental mercury

Cal EPA = California EPA
cPAHs = carcinogenic PAHs
HEAST = Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
mg/kg = milligrams per kilogram
N/A = Not Available

Cancer Slope Factors

The cancer slope factor (SF) is a toxicity value that quantitatively defines the relationship between chemical dose and cancer response rate. The chemical-specific SF represents the upper bound estimate of the probability of an individual contracting cancer, per unit intake of chemical, over a 70-year lifetime. U.S. EPA toxicity criteria, or DTSC criteria where more restrictive, were used to evaluate carcinogenic responses to site-related chemicals. The primary source for the U.S. EPA toxicity criteria was the IRIS database. The cancer toxicity data used in the BWFS HHRA for oral/dermal exposure and inhalation are presented in Tables 2-6 and 2-7, respectively. Lead, considered by U.S. EPA as a probable human carcinogen, does not have an SF. Lead is addressed in the BWFS HHRA using blood chemistry modeling.

Evaluation of PAHs and Dioxins/Furans

Polynuclear aromatic hydrocarbons (PAHs) and dioxins/furans were evaluated using toxic equivalency factors (TEFs) and potency equivalency factors (PEFs). PEFs developed by DTSC were applied to carcinogenic PAHs; TEFs as published by the World Health Organization (van Leeuwen, 1997) and shown in Table 2-8 were applied to dioxins and furans.

For dioxins, a total 2,3,7,8-tetrachlorodibenzo-p-dioxin- (TCDD-) equivalent concentration was estimated by multiplying the concentration of each compound by its TEF. The sum of these TCDD-equivalent concentrations results in a total TCDD-equivalent concentration that is used to estimate total cancer risk from potential exposure to dioxins. The UCL^{95}s were calculated using the total 2,3,7,8-TCDD-equivalent concentrations. For PAHs classified by U.S. EPA as potential carcinogens, the PEF of each PAH was multiplied by the SF for benzo(a)pyrene. The resulting relative potency factor was then used to estimate the cancer risk for those PAHs classified as potential carcinogens.

Table 2-6

Cancer Toxicity Data – Oral/Dermal

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source	Date (MM/YY)
ORGANICS							
1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	D	IRIS	02/02
1,1-Dichloroethene	6E-01	100%	6.0E-01	(mg/kg-day)-1	C	IRIS	02/02
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/02
1,2-Dichloroethane	9.1E-02	100%	9.1E-02	(mg/kg-day)-1	B2	IRIS	02/02
1,2-Dichloroethene (cis)	N/A	N/A	N/A	N/A	D	IRIS	02/02
1,2-Dichloropropane	6.8E-02	100%	6.8E-02	(mg/kg-day)-1	B2	CalEPA/HEAST	(12/01) / (7/97)
1,4-Dichlorobenzene	4.0E-02	100%	4.0E-02	(mg/kg-day)-1	N/A	CalEPA	12/01
Aldrin	1.7E+01	100%	1.7E+01	(mg/kg-day)-1	B2	IRIS	02/02
Anthracene	N/A	N/A	N/A	N/A	D	IRIS	02/02
Benzene	1.0E-01	100%	1.0E-01	(mg/kg-day)-1	A	CalEPA	12/01
Benzo(a)anthracene	1.2E+00	100%	1.2E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Benzo(a)pyrene	1.2E+01	100%	1.2E+01	(mg/kg-day)-1	B2	CalEPA	12/01
Benzo(b)fluoranthene	1.2E+00	100%	1.2E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Benzo(k)fluoranthene	1.2E+00	100%	1.2E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Bromodichloromethane	1.3E-01	100%	1.3E-01	(mg/kg-day)-1	B2	CalEPA	12/01
Carbazole	2.0E-02	100%	2.0E-02	(mg/kg-day)-1	N/A	Region 9 PRGs	11/00
Carbon tetrachloride	1.3E-01	100%	1.3E-01	(mg/kg-day)-1	B2	IRIS	03/02
Chlordane	1.3E+00	100%	1.3E+00	(mg/kg-day)-1	B2	CalEPA	12/01
Chlorobenzene	N/A	N/A	N/A	N/A	D	IRIS	02/02
Chrysene	1.2E-01	100%	1.2E-01	(mg/kg-day)-1	B2	CalEPA	03/02
DDD	2.4E-01	100%	2.4E-01	(mg/kg-day)-1	B2	CalEPA	12/01
DDT	3.4E-01	100%	3.4E-01	(mg/kg-day)-1	B2	CalEPA	12/01
Dibenz(a,h)anthracene	4.1E+00	100%	4.1E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Dibromochloromethane	8.4E-02	100%	8.4E-02	(mg/kg-day)-1	C	IRIS	02/02

Table 2-6

Cancer Toxicity Data – Oral/Dermal

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source	Date (MM/YY)
Dieldrin	1.6E+01	100%	1.6E+01	(mg/kg-day)-1	B2	IRIS	02/02
Dioxins (2,3,7,8-TCDD)	1.5E+5	100%	1.5E+5	(mg/kg-day)-1	N/A	Region 9 PRGs	11/00
Ethylbenzene	N/A	N/A	N/A	N/A	D	IRIS	02/02
Fluoranthene	N/A	N/A	N/A	N/A	D	IRIS	02/02
B-HCH (beta-BHC)	4.0E+00	100%	4.0E+00	(mg/kg-day)-1	C	CalEPA	03/02
Hexachlorobenzene	1.6E+00	100%	1.6E+00	(mg/kg-day)-1	B2	IRIS	02/02
Indeno(1,2,3-cd)pyrene	1.2E+00	100%	1.2E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Methyl-tert butyl ether	1.80E-03	100%	1.8E-03	(mg/kg-day)-1	N/A	CalEPA	12/01
Naphthalene	N/A	N/A	N/A	N/A	C	IRIS	02/02
PCBs	2.0E+00	100%	2.0E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Tetrachloroethene	5.1E-02	100%	5.1E-02	(mg/kg-day)-1	N/A	CalEPA	12/01
Toluene	N/A	N/A	N/A	N/A	D	IRIS	02/02
Trichloroethene	1.5E-02	100%	1.5E-02	(mg/kg-day)-1	pending, was B2	CalEPA	12/01
Trichlorofluoromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride (adult)	7.2E-01	100%	7.2E-01	(mg/kg-day)-1	A	IRIS	02/02
Vinyl Chloride (child to adult)	1.4E+00	100%	1.4E+00	(mg/kg-day)-1	A	IRIS	02/02
Xylene	N/A	100%	N/A	(mg/kg-day)-1	D	IRIS	02/02
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	1.5E+00	100%	1.5E+00	(mg/kg-day)-1	A	IRIS	02/02
Barium	N/A	N/A	N/A	N/A	D	IRIS	02/02
Beryllium	N/A	N/A	N/A	N/A	B1 (airborne beryllium)	IRIS	02/02
Cadmium	N/A	N/A	N/A	N/A	B1	IRIS	02/02
Chromium (III)	N/A	N/A	N/A	N/A	D	IRIS	02/02
Copper	N/A	N/A	N/A	N/A	D	IRIS	02/02

Table 2-6

Cancer Toxicity Data – Oral/Dermal

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor	Adjusted Dermal Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source	Date (MM/YY)
Cyanide	N/A	N/A	N/A	N/A	D	IRIS	02/02
Lead	N/A	N/A	N/A	N/A	B2	IRIS	02/02
Mercury	N/A	N/A	N/A	N/A	D	IRIS	02/02
Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium	N/A	N/A	N/A	N/A	D	IRIS	02/02
Silver	N/A	N/A	N/A	N/A	D	IRIS	02/02
Thallium	N/A	N/A	N/A	N/A	D	IRIS	02/02
Vanadium	N/A	N/A	N/A	N/A	D	IRIS	02/02
Zinc	N/A	N/A	N/A	N/A	D	IRIS	02/02

Cal EPA = California EPA
HEAST = Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
N/A = not available
NCEA = EPA National Center for Environmental Assessment
Region IX PRGs = EPA Region IX preliminary remediation goal table for 2000

EPA Group:
A = human carcinogen
B1 = probable human carcinogen – indicates that limited human data are available
B2 = probable human carcinogen – indicates sufficient evidence in animals and inadequate or no evidence in humans
C = possible human carcinogen
D = not classifiable as a human carcinogen
E = evidence of noncarcinogenicity

Table 2-7

Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Unit Risk	Units	Adjustment[1]	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date (MM/YY)
ORGANICS								
1,1,1-Trichloroethane	N/A	(µg/cu.m)-1	3500	N/A	(mg/kg-day)-1	D	IRIS	02/02
1,1-Dichloroethene	5.0E-05	(µg/cu.m)-1	3500	1.8E-01	(mg/kg-day)-1	C	IRIS	02/02
1,2-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
1,2-Dichloroethane	2.6E-05	(µg/cu.m)-1	3500	9.1E-02	(mg/kg-day)-1	B2	IRIS	02/02
1,2-Dichloroethene (cis)	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
1,2-Dichloroethene (trans)	N/A	N/A	N/A	N/A	N/A	N/A	IRIS	02/02
1,2-Dichloropropane	1.8E-05	(µg/cu.m)-1	3500	3.6E-02	(mg/kg-day)-1	N/A	CalEPA	12/01
1,4-Dichlorobenzene	1.1E-05	(µg/cu.m)-1	3500	4E-02	(mg/kg-day)-1	N/A	CalEPA	12/01
Aldrin	4.9E-03	(µg/cu.m)-1	3500	1.7E+01	(mg/kg-day)-1	B2	IRIS	02/02
Anthracene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Benzene	2.9E-05	(µg/cu.m)-1	3500	1.0E-01	(mg/kg-day)-1	A	CalEPA	12/01
Benzo(a)anthracene	1.1E-04	(µg/cu.m)-1	3500	3.9E-01	(mg/kg-day)-1	B2	CalEPA	03/02
Benzo(a)pyrene	1.1E-03	(µg/cu.m)-1	3500	3.9E+00	(mg/kg-day)-1	B2	CalEPA	12/01
Benzo(b)fluoranthene	1.1E-04	(µg/cu.m)-1	3500	3.9E-01	(mg/kg-day)-1	B2	CalEPA	03/02
Benzo(k)fluoranthene	1.1E-04	(µg/cu.m)-1	3500	3.9E-01	(mg/kg-day)-1	B2	CalEPA	03/02
Bromodichloromethane	3.7E-05	(µg/cu.m)-1	3500	1.3E-01	(mg/kg-day)-1	B2	CalEPA	12/01
Carbazole	N/A	N/A	N/A	2.0E-02	(mg/kg-day)-1	N/A	IRIS	02/02
Carbon tetrachloride	4.2E-05	(µg/cu.m)-1	3500	1.5E-01	(mg/kg-day)-1	B2	CalEPA	03/02
Chlordane	3.4E-04	(µg/cu.m)-1	3500	1.2E+00	(mg/kg-day)-1	B2	CalEPA	12/01
Chlorobenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Chrysene	1.1E-05	(µg/cu.m)-1	3500	3.9E-02	(mg/kg-day)-1	B2	CalEPA	03/02

Table 2-7

Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Unit Risk	Units	Adjustment[1]	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date (MM/YY)
DDD	6.9E-05	(µg/cu.m)-1	3500	2.4E-01	(mg/kg-day)-1	B2	CalEPA	12/01
DDT	9.7E-05	(µg/cu.m)-1	3500	3.4E-01	(mg/kg-day)-1	B2	CalEPA	12/01
Dibenz(a,h)anthracene	1.2E-03	(µg/cu.m)-1	3500	4.1E+00	(mg/kg-day)-1	B2	CalEPA	12/01
Dibromochloromethane	2.7E-05	(µg/cu.m)-1	3500	9.45E-02	(mg/kg-day)-1	C	CalEPA	12/01
Dieldrin	4.6E-03	(µg/cu.m)-1	3500	1.6E+01	(mg/kg-day)-1	B2	CalEPA	03/02
Dioxins (2,3,7,8-TCDD)	N/A	N/A	N/A	1.5E+05	(mg/kg-day)-1	N/A	Region IX PRGs	11/00
Ethylbenzene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Fluoranthene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
B-HCH (beta-BHC)	1.1E-03	(µg/cu.m)-1	3500	3.9E+00	(mg/kg-day)-1	C	CalEPA	03/02
Hexachlorobenzene	5.1E-04	(µg/cu.m)-1	3500	1.8E+00	(mg/kg-day)-1	N/A	CalEPA	03/02
Indeno(1,2,3-cd)pyrene	1.1E-04	(µg/cu.m)-1	3500	3.9E-01	(mg/kg-day)-1	B2	CalEPA	03/02
Methyl-tert-butyl ether	2.6E-07	(µg/cu.m)-1	3500	9.1E-04	(mg/kg-day)-1	N/A	CalEPA	03/02
Naphthalene	N/A	N/A	N/A	N/A	N/A	C	IRIS	02/02
PCBs	5.7E-04	(µg/cu.m)-1	3500	2.0E+00	(mg/kg-day)-1	B2	CalEPA	03/02
Tetrachloroethene	5.9E-06	(µg/cu.m)-1	3500	2.1E-02	(mg/kg-day)-1	N/A	CalEPA	03/02
Toluene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Trichloroethene	2.0E-06	(µg/cu.m)-1	3500	7.0E-03	(mg/kg-day)-1	pending, was B2	CalEPA	03/02
Trichlorofluoromethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride (adult)	4.4E-06	(µg/cu.m)-1	3500	1.5E-02	(mg/kg-day)-1	A	IRIS	02/02
Vinyl Chloride (child to adult)	8.8E-06	(µg/cu.m)-1	3500	3.1E-02	(mg/kg-day)-1	A	IRIS	02/02
Xylene	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02

Table 2-7

Cancer Toxicity Data – Inhalation

Chemical of Potential Concern	Unit Risk	Units	Adjustment[1]	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date (MM/YY)
METALS/INORGANICS								
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	4.3E-03	(µg/cu.m)-1	3500	1.5E+01	(mg/kg-day)-1	A	IRIS	02/02
Barium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium	2.4E-03	(µg/cu.m)-1	3500	8.4E+00	(mg/kg-day)-1	B1	IRIS	02/02
Cadmium	4.2E-03	(µg/cu.m)-1	3500	1.5E+01	(mg/kg-day)-1	B1	CalEPA	03/02
Chromium (III)	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Copper	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Cyanide	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Lead	N/A	N/A	N/A	N/A	N/A	B2	IRIS	02/02
Mercury	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Nickel	2.6E-04	(µg/cu.m)-1	3500	9.1E-01	(mg/kg-day)-1	N/A	CalEPA	03/02
Selenium	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Silver	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Thallium	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02
Vanadium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc	N/A	N/A	N/A	N/A	N/A	D	IRIS	02/02

Note:

(1) Source of conversion from units of µg/cu.m to mg/kg-day. Risk per mg/kg-day = (risk per µg/cu.m) x 70kg x 1000 µg/mg x 1/20 (day/cu.m)

CalEPA = California EPA
HEAST = Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
mg/kg-day = milligrams per kilogram per day
µg/cu.m = micrograms per cubic meter
N/A = not available

EPA Group:

A = human carcinogen
B1 = probable human carcinogen – indicates that limited human data are available
B2 = probable human carcinogen – indicates sufficient evidence in animals and inadequate or no evidence in humans
C = possible human carcinogen
D = not classifiable as a human carcinogen
E = evidence of noncarcinogenicity

Table 2-8

Toxic Equivalency Factors (TEF) for Dioxins and Furans

CONGENER	TEF
Dioxins	
2,3,7,8-tetrachlorodibenzo-*p*-dioxin	1.0
1,2,3,7,8-pentachlorodibenzo-*p*-dioxin	1.0
1,2,3,4,7,8-hexachlorodibenzo-*p*-dioxin	0.1
1,2,3,6,7,8-hexachlorodibenzo-*p*-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-*p*-dioxin	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-*p*-dioxin	0.01
octachlorodibenzo-*p*-dioxin	0.0001
Furans	
2,3,7,8-tetrachlorodibenzofuran	0.1
1,2,3,7,8-pentachlorodibenzofuran	0.05
2,3,4,7,8-pentachlorodibenzofuran	0.5
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	0.01
octachlorodibenzofuran	0.0001

2.3.1.4 Risk Characterization

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the carcinogen. Excess cancer risk is calculated from the following equation:

$$\text{Risk} = \text{LADD} \times \text{SF}$$

These risks are probabilities of an individual developing cancer that usually are expressed in scientific notation (e.g., 2×10^{-5}). An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance

of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks that cancer individuals face from other causes, such as smoking or exposure to too much sun. The chance of an individual developing cancer from all other causes has been estimated to be as high as 1 in 3. U.S. EPA's generally acceptable risk range for site-related exposure is 1×10^{-4} to 10^{-6} with a hazard index (HI) <1. Specific chemicals at a site that contributed equal to or greater than 1×10^{-6} cancer risk, as determined by comparison to U.S. EPA PRGs, were identified as risk-based COCs that required evaluation in the BWFS.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., lifetime) with an RfD derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effects. The ratio of exposure to toxicity is called a hazard quotient (HQ). An HQ <1 indicates that a receptor's dose of a single contaminant is less than the RfD and that toxic noncarcinogenic effects from that chemical are unlikely. The HI is generated by adding the HQs for all COCs that affect the same target organ (e.g., liver) or act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. An HI less than 1 indicates that, based on the sum of all HQs from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely. An HI greater than 1 indicates that site-related exposures may present a risk to human health. The HQ is calculated as follows:

$$\text{Non-cancer HQ} = \text{ADD}/\text{RfD}$$

ADD and RfD are expressed in the same units (milligrams per kilogram [mg/kg] of body weight per day [mg/kg-day]) and represent the same exposure period (i.e., chronic, sub-chronic, or short term). Specific chemicals at a site that contributed an HI of equal to or greater than 1 were identified as risk-based COCs that required evaluation in the BWFS.

2.3.1.5 Uncertainty Analysis

Risk characterization includes sources of uncertainty inherent to the risk assessment process. The uncertainties are due to limitations in the available site data and methods used to quantify

risk. The uncertainties associated with the BWFS HHRA result from limitations in the available information and methods for identification of COCs, exposure assessment, toxicity assessment, and risk characterization. Limitations in sampling locations, depth, and frequency also result in uncertainty. The current and planned land uses at Norton AFB include aviation support, industrial activity, and commercial usage. Hence, the use of the unrestricted land-use scenario likely overestimates risk associated with actual human exposures.

Toxicity values are typically derived from studies performed on laboratory animals; thus, uncertainty results from potential differences between laboratory animals and humans in the target organs affected, dose-response relationship, and absorption and metabolism. Since lead does not have a cancer SF and cannot be included in the computation of carcinogenic risk, computed cancer risk may be underestimated. Summing the risk or hazard for several COCs across multiple pathways assumes no synergistic or antagonistic chemical interactions. Additionally, the computation of indoor air risk assumed building dimensions much smaller than are likely, thus resulting in an overestimate of risk due to indoor air inhalation.

Because of the large number of uncertainties in the risk assessment process, results may be overestimated or underestimated by several orders of magnitude. However, since assumptions used in risk assessment typically err on the conservative (i.e., health-protective) side, estimates of risk are usually overestimated. A detailed description of uncertainties associated with the risk computations, including site-specific considerations, are provided in the BWFS.

2.3.2 Ecological Risk Assessment

A basewide ecological risk assessment (ERA) for the former Norton AFB was completed in 1997 (CDM, 1998a). The ERA evaluated all IRP sites within or adjacent to areas of the base containing native or relatively undisturbed vegetation. Included in the ERA were several golf course ponds that once provided unique habitat to terrestrial and aquatic species. Urbanized, industrialized, or highly disturbed areas (e.g., mowed areas adjacent to the flight line and areas vegetated with non-native weeds) were not included. The results of the 1997 ERA concluded that IRP Sites 1, 2, 5, 8, 10, and 13, and contaminants found in the sediments of the unlined golf course ponds posed a potential risk to ecological receptors (plants and animals). Based on these

conclusions, removal actions were performed at the identified sites. The removal actions and the closure (capping) of the base landfill (Site 2) eliminated or reduced the risks at all of the locations. The risk at the golf course ponds was eliminated through removal of the pond sediment and cessation of use of the ornamental ponds.

Following completion of the 1997 basewide ERA, dioxin contamination was found in soil at IRP Site 10 (Section 2.5.6), necessitating reevaluation of the ecological risks at this site. The vegetation immediately to the south of Site 10 is characterized by a desert plant community, termed riversidean alluvial sage scrub. The riversidean alluvial sage scrub vegetation provides habitat for a variety of plants and animals, including two endangered species, the San Bernardino Merriam's kangaroo rat and the Santa Ana River woolly star. Dioxins were established as the only COC at Site 10 for the ERA presented in the BWFS. Other contaminants known to be present at Site 10, including metals, polychlorinated biphenyls (PCBs), pesticides, and PAHs were eliminated as COCs since they were detected at minimal concentrations in the area of native habitat. The ERA considered three primary pathways for ecological exposure to dioxins: soil ingestion, plant matter ingestion, and insect ingestion. Since the ERA concluded that plant uptake of dioxins from soil is minimal, the kangaroo rat was the only potential receptor quantitatively evaluated. The ERA concluded that current concentrations of dioxins at Site 10 pose a potential adverse threat to ecological receptors; however, cleanup of dioxins to levels established as protective of human health would also be protective to ecological receptors.

2.3.3 Basis for Remedial Action Objectives

Remedial action objectives (RAOs) for the former Norton AFB are based on the protection of human health and the environment. Implementation of the selected remedies will either remove the source of, or prevent exposure to, unacceptable risk to human health and the environment. Site-specific RAOs are presented in Section 2.5.

2.3.4 Description of Alternatives

An evaluation of remedial alternatives was performed during the BWFS for sites with contaminants at levels posing potential unacceptable risk to human health. Remedial alternatives

considered during the BWFS are described below and include NFA, removal, containment, ICs, and monitoring.

2.3.4.1 No Further Action

No remedy is implemented, and the current status of the various sites would remain unchanged relative to contaminant concentrations. Any reduction in the contamination would be through unaided natural attenuation processes. Exposure to contaminated soils would be possible for any future land pattern and use change.

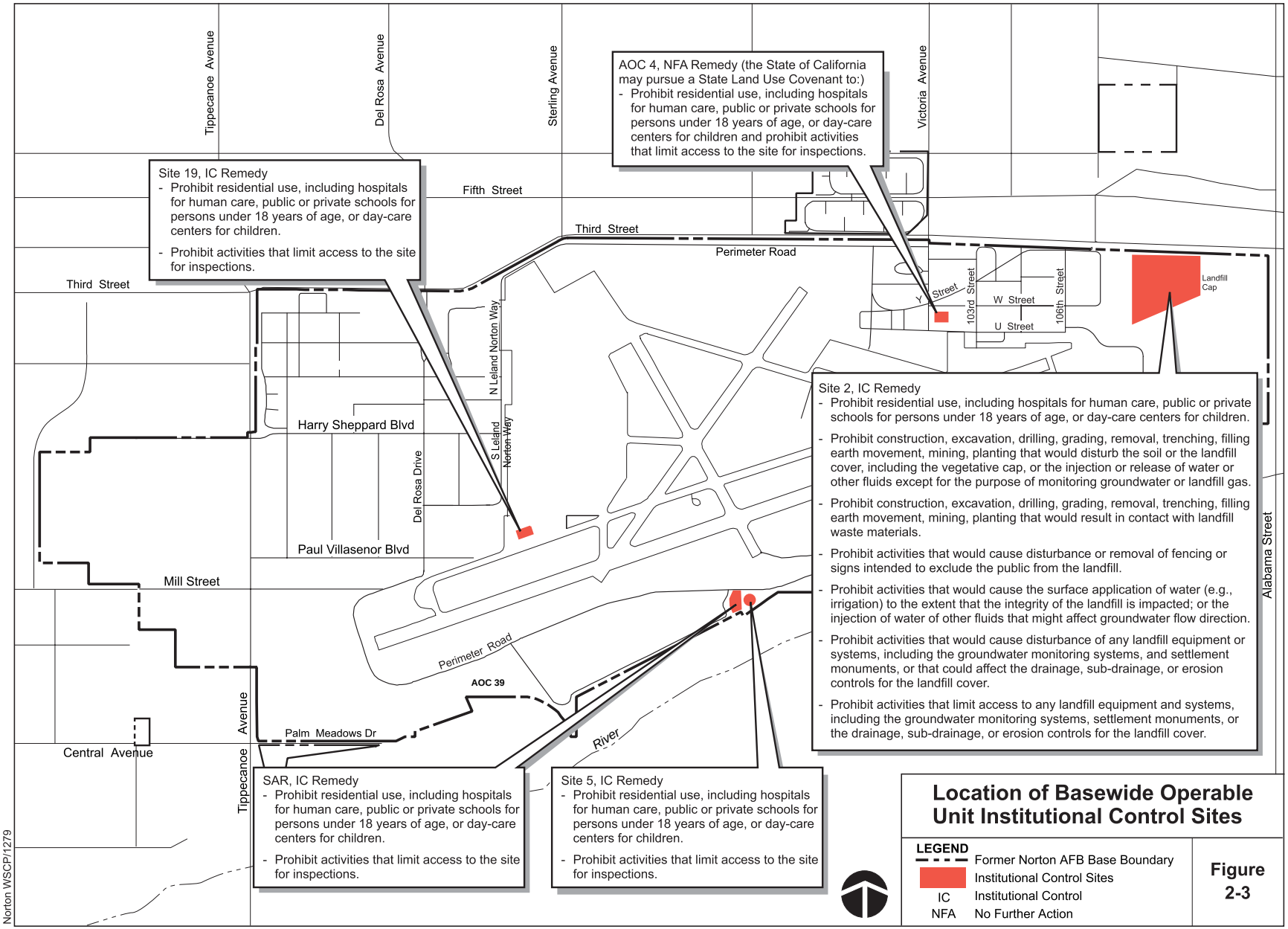
2.3.4.2 Institutional Controls

ICs are non-engineering, non-technical mechanisms used to reduce or prevent human exposure to contaminants. ICs are being applied to four former Norton AFB sites: IRP Sites 2, 5, and 19 and the SAR. Figure 2-3 shows the locations of these sites and summarizes the ICs for each. AOC 4 is an NFA site. However, it is shown on the figure because DTSC may pursue a SLUC.

Specific language is included in this ROD regarding implementation, monitoring, reporting, and enforcement of the selected ICs. Therefore, compliance with the terms of this ROD will be protective of human health and the environment. Because the restrictions are specifically described in Section 2.5 and the means for implementing the restrictions are detailed herein, it is not necessary for the Air Force to submit any new post-ROD, IC implementation documents, such as a Land Use Control Implementation Plan (LUCIP), new operation and maintenance (O&M) plans or RA work plans.

The IC alternatives include various enforceable use restrictions and land use controls on the use of the property. The Air Force is ultimately responsible for implementing, maintaining, and monitoring the remedial actions (including ICs) before and after property transfer. The Air Force will exercise this responsibility in accordance with CERCLA and the NCP.

Meeting RAOs shall be the primary and fundamental indicator of IC performance, the ultimate aim of which is to protect human health and the environment. Performance measures for ICs are the RAOs plus the actions necessary to achieve those objectives. It is anticipated that successful.



Location of Basewide Operable Unit Institutional Control Sites

Figure 2-3

implementation, operation, maintenance, and completion of these measures will achieve protection of human health and the environment and compliance with all legal requirements.

The Air Force may contractually arrange for third parties to perform any and all of the actions associated with ICs, although the Air Force is ultimately responsible under CERCLA for the successful implementation of the ICs, including monitoring, maintenance, and review of ICs. Maintenance, monitoring, and other controls as established in accordance with this ROD and the appropriate transfer documents will be continued until the ICs are no longer necessary as specified within the description of alternatives for affected sites in the Basewide OU or they are modified due to reduction in toxicity or potential exposure to contamination. Land use controls shall be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels as to allow for unrestricted use and exposure.

Deed Restriction and Reservation of Access

The federal deed(s) containing IRP Sites 2, 5, and 19 and the SAR will include a description of the residual contamination on the property, consistent with the Air Force's obligations under CERCLA Section 120(h) and the specific restriction set forth in Section 2.5 for each site under "Description of Selected Remedy." The IC, in the form of a deed restriction, is an "environmental restriction" under California Civil Code Section 1471. The deed(s) will contain appropriate provisions to ensure that the restrictions continue to run with the land, as provided in California Civil Code Section 1471, and will include a legal description for each site (IRP Sites 2, 5, and 19 and the SAR).

The Air Force and regulatory agencies may conduct inspections of the ICs at Sites 2, 5, and 19 and the SAR. The deed(s) will also contain a reservation of access to the property for the Air Force, U.S. EPA, and DTSC, and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the Air Force IRP or the FFA (and the Air Force will provide such access to regulatory agencies prior to transfer).

The environmental restriction is the basis for part 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 1 year or more or known to have been released or disposed of on the property. During the time between adoption of this ROD and deeding the property, appropriate restrictions are implemented at IRP Sites 2, 5, and 19 and the SAR by the lease between the Air Force and the IVDA or SBIAA.

Notice of Institutional Controls

The Air Force will include the specific deed restriction language set forth in this ROD in the deed(s) for the parcels that include IRP Sites 2, 5, and 19 and the SAR and will provide a copy of the deed to the regulatory agencies as soon as practicable after transfer of fee title. The Air Force will provide information to the property owners regarding the necessary ICs in the draft deed(s). The signed deed(s) will also include the specific land use restriction(s) as well as a condition that the transferee execute and record an SLUC, within 10 days of transfer, to address any state obligations pursuant to State law, including 22 CCR, Section 67391.1. The Air Force will ensure that the transferee has met this condition. The information will also be communicated to appropriate state and local agencies with authority regarding any of the activities or entities addressed in the controls to ensure that such agencies can factor the information into their oversight, approval, and decision-making activities.

Prior to conveyance of IRP Sites 2, 5, and 19 and the SAR, U.S. EPA and DTSC representatives will be given reasonable opportunity to review and comment on the applicable deed language described in this section and associated rights of entry for DTSC and U.S. EPA for purposes of IC oversight and enforcement.

Annual Evaluations/Monitoring

Prior to property transfer, the Air Force will conduct annual monitoring, provide annual reports and undertake prompt action to address activity that is inconsistent with the IC objectives or use restrictions, or any action that may interfere with the effectiveness of the ICs. The monitoring results will be included in a separate report or as a section of another environmental report, if appropriate, and provided to the U.S. EPA and DTSC. The annual monitoring reports will be used in preparation of the Five Year Review to evaluate the effectiveness of the remedy. Prior to

transfer, the annual monitoring report submitted to the regulatory agencies by the Air Force will evaluate the status of the ICs and how any IC deficiencies or inconsistent uses have been addressed.

Upon the effective date of property conveyance, the transferee[1] or subsequent property owner(s) will conduct annual physical inspections of each site to confirm continued compliance with all IC objectives unless and until the ICs at Sites 2, 5, and 19 and the SAR are terminated. The transferee or subsequent property owner(s) will provide to the Air Force, U.S. EPA, and DTSC an annual monitoring report on the status of ICs and how any IC deficiencies or inconsistent uses have been addressed. The Air Force will place these transferee obligations in the transfer documentation.

The 5-year review reports conducted by the Air Force will also address whether the ICs in the ROD were inserted in the deed(s), if property was transferred during the period covered, whether the owners and State and local agencies were notified of the ICs affecting the property, and whether use of the property has conformed to such ICs. Five-year review reports will make recommendations on the continuation, modification, or elimination of annual reports and IC monitoring frequencies. Five-year review reports are submitted by the Air Force to the regulatory agencies for review and comment.

Although the Air Force is transferring procedural responsibilities to the transferee and its successors by provisions to be included in the deed(s) transferring title to IRP Sites 2, 5, and 19 and the SAR and may contractually arrange for third parties to perform any and all of the actions associated with ICs, the Air Force is ultimately responsible for the remedy.

Response to Violations

Prior to property transfer, the Air Force will notify EPA and DTSC as soon as practicable but no longer than 10 days after discovery of any activity that is inconsistent with the IC objectives or

[1] or other entity accepting such obligations (which may include, without limitation, subsequent transferees)

use restrictions, or any other action that may interfere with the effectiveness of the ICs. The Air Force will notify U.S. EPA and DTSC regarding how the Air Force has addressed or will address the breach within 10 days of sending U.S. EPA and DTSC notification of the breach.

Post-transfer, if the transferee fails to satisfy its obligations pursuant to the SLUC, DTSC may enforce such obligations against the transferee. If there is failure of the selected remedy or a violation of selected remedy obligations (for example, an activity inconsistent with the IC objective or use restriction, or any action that may interfere with the effectiveness of the ICs), DTSC will notify the Air Force and U.S. EPA in writing of such failure as soon as practicable (but no longer than 14 days) upon discovery of the inconsistent activity or action that interferes with the effectiveness of the ICs, and initially seek corrective action or other recourse from the transferee. Within 21 days following DTSC's notification, the Parties shall confer to discuss re-implementation of the selected remedy or other necessary remedial actions to address the breach of any IC. Once DTSC reports that the transferee is unwilling or unable to undertake the remedial actions, the Air Force will within 10 days inform the other Parties of measures it will take to address the breach.

Approval of Land Use Modification

Prior to transfer, the Air Force shall not modify or terminate land use controls, or implementation actions that are part of the selected remedy without approval by U.S. EPA and DTSC. The Air Force shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the land use control or any action that may alter or negate the need for land use controls.

Any grantee of property constrained by ICs imposed through their transfer document(s) may request modification or termination of the ICs. Modification or termination of these ICs, except the SLUC (discussed below), requires Air Force, U.S. EPA, and DTSC approval.

State Land Use Covenant (SLUC) Modification

Any modification or termination of the SLUC must be undertaken in accordance with State law and will be the responsibility of the transferee or then-current owner or operator.

2.3.4.3 Containment

Containment alternatives reduce or prevent contaminant migration and exposure routes using a physical barrier. The contaminants are not changed through treatment, nor are the volumes of contaminants reduced, except through unaided natural attenuation processes. Examples of containment technologies are surface controls, such as covering/capping, and subsurface barriers, such as grout curtains. The landfill cap at IRP Site 2 is an example of contaminant containment.

2.3.4.4 Removal

Removal consists of any process whereby the contaminant is removed from the site. Treatment of the contaminant by physical, chemical, or thermal means, may or may not be performed, depending on the disposal requirements for the removed media. Examples of removal actions include soil excavation, groundwater extraction, and soil gas extraction. Treatment technologies are used with a removal action, as appropriate, prior to disposal of any media or residuals.

2.3.5 Evaluation Criteria

Alternatives considered for cleaning up Superfund sites are required to be compared using remedial evaluation criteria found in the NCP. These nine criteria are subdivided into three groups: threshold criteria, balancing criteria, and modifying criteria. Threshold and balancing criteria were evaluated during the BWFS. Modifying criteria were considered after comments on the Basewide Proposed Plan (BWPP) were received and given an appropriate response.

THRESHOLD CRITERIA. In order to satisfy the threshold criteria, the remedial alternative must:

- Be protective of human health and the environment.
- Comply with ARARs.

BALANCING CRITERIA. As several different remedial alternatives may satisfy the threshold criteria, the selected alternatives are then compared, based on the following balancing criteria:

- Long-term effectiveness and permanence
- Reduction of contaminant toxicity, mobility, or volume (TMV) through treatment
- Short-term effectiveness
- Implementability
- Cost.

Implementing the balancing criteria will generally indicate a technically and economically preferable alternative. However, in many cases the apparent preference for one alternative over another may not be significant. Also, the most technically and economically preferred alternative may have other drawbacks. In these instances, modifying criteria are used to distinguish among alternatives that are otherwise closely ranked.

MODIFYING CRITERIA. The modifying criteria include:

- State acceptance
- Community acceptance.

A description of each criterion, and a comparison of remedial alternatives based on compliance with the criterion, are provided in the following subsections. The detailed comparative analysis of remedial alternatives is presented in the BWFS.

2.3.5.1 Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or ICs.

2.3.5.2 Compliance with ARARs

Section 121(d) of CERCLA and NCP §300.430(f)(1)(ii)(B) require that RAs at CERCLA sites at least attain legally Federal and State ARARs, unless such ARARs are waived under CERCLA Section 121(d)(4). Compliance with ARARs addresses whether an alternative will meet all of the Federal and State ARARs or provides a basis for invoking a waiver.

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, RA, location, or other circumstance. Only those State standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable.

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

2.3.5.3 Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence refers to expected residual risk and the effectiveness of an alternative to maintain reliable protection of human health and the environment over time after the alternative has been implemented. This criterion includes the consideration of residual risk following remedy implementation and the adequacy and reliability of controls.

2.3.5.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of TMV through treatment refers to the anticipated performance of treatment technologies that may be included as a component of the remedy.

2.3.5.5 Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy, and any adverse impacts that may be posed to workers, the community, or the environment during remedy implementation until cleanup levels are achieved.

2.3.5.6 Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative practicability, and coordination with governmental agencies are also considered.

2.3.5.7 Cost

The NCP specifies that cost be considered during evaluation of remedial alternatives. Estimated costs are summarized in Table 2-9.

Table 2-9

Comparison of Costs by Alternative by Site

Site/AOC	Depth Interval (ft bgs)	Affected Area (acres)	Volume of Affected Area (cubic yd)	Alternative 1		Alternative 2	Alternative 3	Alternative 4		
				No Action	Monitoring[1]	Institutional Controls[2]	Containment	4a Removal (Soils)	4b Removal (Perched Groundwater)	4c Removal (Soil Gas)
Site 1	29 to 30	0.1	15,300	NA	$443,000	$72,100	NA	$910,000	$285,000	NA
Site 2	10 to 40	31	NA[6]	NA	$452,000	$72,100	Action complete	NA	NA	Ongoing O&M
Site 5	5 to 15	1.2	30,000	NA	NA	$72,100	NA	$3,840,000	NA	NA
Small Arms Range	0 to 5	0.1	1,600	NA	NA	$72,100	$72,100	$360,000	NA	NA
Site 7	0 to 2	0.5	350	NA	NA	$72,100	NA	$60,000	NA	NA
Site 10	0 to 2	6	20,000	NA	NA	$72,100	$205,000	$1,900,000	NA	NA
Site 12	0 to 15	2	450	NA	NA	$72,100	$0	$210,000	NA	NA
Site 17	25 to 35	1	NA	NA	$478,000	$72,100	NA	$140,000	NA	NA
Site 19	0 to 4	1.8	2,500	NA	NA	$72,100	$22,000	$4,610,000	NA	NA
AOC 4	0 to 1	0.1	160	NA	NA	$72,100	NA	$150,000	NA	NA
AOC 18	10 to 30	0.1	5,300	NA	NA	$72,100	$20,000	$630,000	NA	NA
AOC 33	2 to 20	0.1	3,200	NA	NA	$72,100	$22,000	$144,000	NA	NA
AOC 39	0 to 1	0.4	650	NA	NA	$72,100	NA	$260,000	NA	NA
AOC 40	0 to 1	1.4	1,800	NA	NA	$72,100	$22,000	$111,500	NA	NA
AOC 70	5 to 10	0.1	1,750	NA	NA	$72,100	$72,100	$360,000	NA	NA
Building 752	3 to 9	0.2	120	NA	NA	$72,100	NA	210,000	NA	NA
NBA PCE Plume	upper aquifer	unknown	upper aquifer	NA	[3]	$72,000	NA	NA	NA	NA

Notes: [1] Costs are present worth costs based on 30 years of monitoring
[2] Costs are present worth for discount rate of 7 percent, 30 years - for four sites.
[3] Any sampling of the NBA PCE plume will be conducted as part of the Comprehensive Basewide Groundwater Monitoring Program.
NA = Not applicable to site or AOC
NBA = Northeast Base Area
PCE = tetrachloroethene
VOC = volatile organic compound

2.3.5.8 State Agency Acceptance

The Air Force worked closely with the California EPA DTSC to ensure that the remedies presented in the BWPP met with their approval.

2.3.5.9 Community Acceptance

The community accepted the BWPP as written (see Section 4 and Appendix B). The community participation program for former Norton AFB is described in Section 2.4.

2.4 COMMUNITY PARTICIPATION

The Community Relations Plan (CRP) for Norton AFB was completed in April 1990 and updated in 1996 and in 1999. Consistent with the CRP, the Air Force established a Restoration Advisory Board (RAB) composed of U.S. EPA, DTSC, RWQCB, the Air Force, San Bernardino

County, local representatives, and members of the community. The RAB met on a regular basis to provide the community representatives with information on recent events. The RAB adjourned in 1998. The Air Force has held annual public forums beginning in 1999, and continues to publish and distribute newsletters and fact sheets about the former Norton AFB to inform the community of recent activities.

After completion of the BWFS, the BWPP and supplement (USAF, 2004a, b) were submitted for a 30-day public comment period on July 28, 2004, and a public hearing was held at the San Bernardino City Council Chambers on August 11, 2004. The comment period was extended to September 10, 2004, to give the public an opportunity to comment on a supplemental packet mailed on August 5, 2004. The BWPP and supplemental packet provides a brief overview of the information contained in the BWFS and lists the preferred remedial alternative for each site included in this ROD. Only one response/comment was received during the public hearing and comment period for the BWPP and that was in support of the BWPP (see Responsiveness Summary, Section 4).

This Basewide ROD presents the selected remedies for 21 of the 22 IRP sites, all of the 73 AOCs, the SAR, Building 752, and groundwater contamination in the NBA at the former Norton AFB in San Bernardino County, California. The remedies were chosen in accordance with CERCLA, as amended by SARA and the NCP. The remedial decisions are based on the

BWFS (CDM, 2003) and other associated documentation included in the Norton AFB Administrative Record. Publicly accessible copies of the Administrative Record are available at www.afrpa.hq.af.mil/mcclellan and the Norman Feldheym Central Library in San Bernardino, California. The availability of the Administrative Record was indicated to the public in the BWPP. The Administrative Record index is provided in Appendix A. The public participation requirements of CERCLA Sections 113(K)(2)(B)(i-v) and 117 have been substantively satisfied.

2.5 SITE-SPECIFIC EVALUATIONS

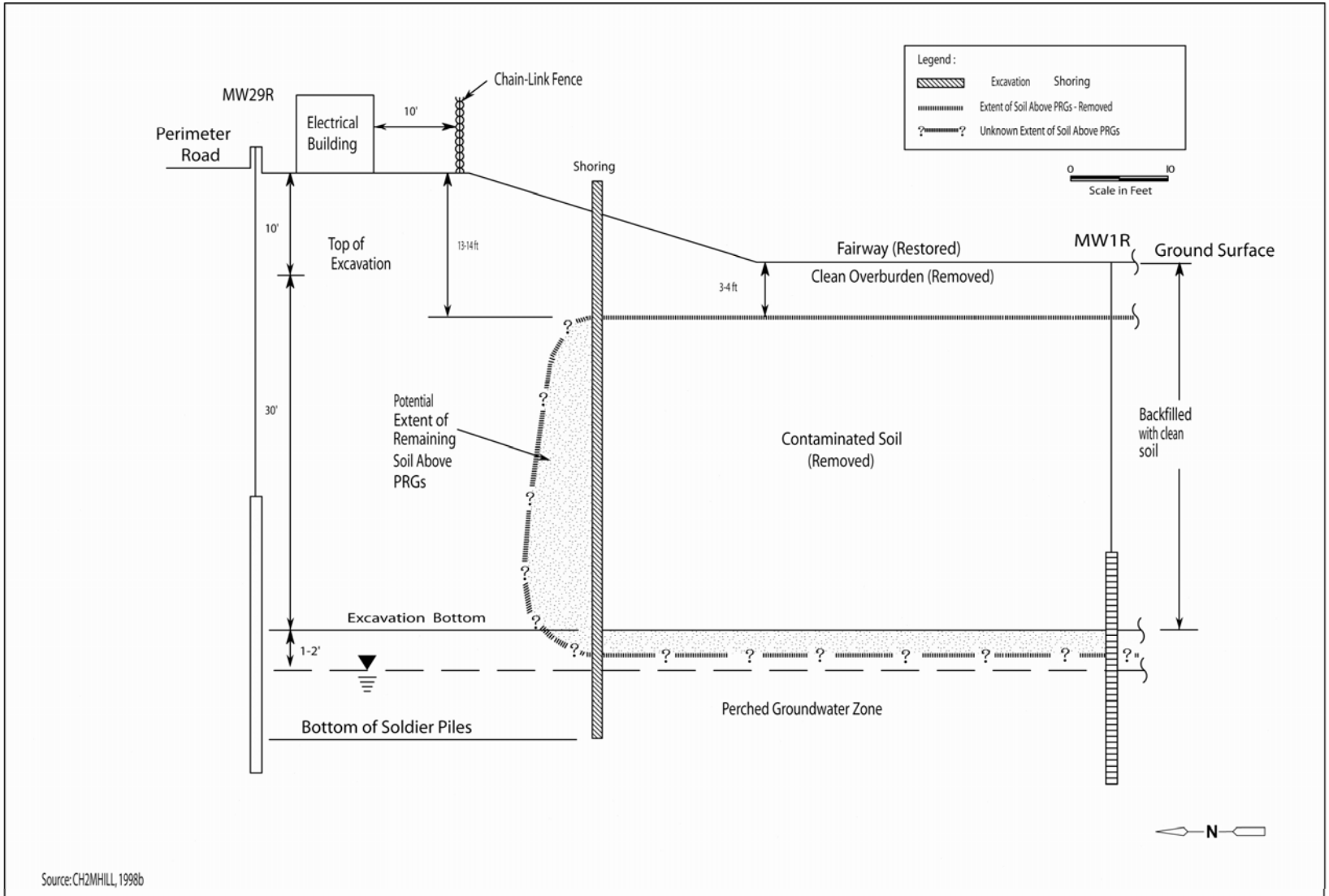
This section provides the generalized basewide conceptual model for Norton AFB and specific information pertaining to sites evaluated in the BWFS (CDM, 2003).

2.5.1 IRP Site 1 – Industrial Waste Lagoons

2.5.1.1 Site History

IRP Site 1 is in the GCA and was the location of former unlined lagoons used from 1950 to 1960 for the disposal of liquid waste generated during aircraft repair. During the 1960s, a portion of the golf course was constructed over the site without removing all industrial waste. The RI identified soils contaminated with paints, solvents, oil, fuels, and solids that had been washed into the industrial waste system. Chlorobenzene, 1,2-dichlorobenzene (DCB), and 1,4-DCB exceeded industrial PRGs.

An Engineering Evaluation/Cost Analysis (EE/CA) (CH2M Hill, 1996) identified removal of contaminated soil to a depth of approximately 30 feet bgs, backfilling with clean soil, and restoring the site as a portion of a fairway and green. A total of 20,325 tons of contaminated soil was excavated from an area of approximately 25,000 square feet, to the top of the perched-zone groundwater at a depth of approximately 29 feet bgs. The excavation was located next to a berm that supports the airfield perimeter road. Based on confirmation sampling results, the contamination extended beneath the perimeter road. For technical and implementability reasons, the deep and lateral contamination was not removed. The area of affected soil left in place covers approximately 3,800 square feet (CH2M Hill, 1998b). Residual contamination is located between 20 feet bgs to approximately 30 feet bgs (CH2M Hill, 1998b), and includes chlorobenzene, 1,2-DCB, 1,4-DCB, toluene, and xylene. Figure 2-4 is a cross-section of the site



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CROSS-SECTION OF BURIED CONTAMINATION
IRP SITE 1
FORMER NORTON AIR FORCE BASE

Figure 2-4

showing the depth of contamination related to key site features. The removal action is described in the closure report for IRP Site 1 (CH2M Hill, 1998b).

Because soil contaminants were left in place and in contact with the perched-zone groundwater, monitoring wells were installed into the perched zone, one at the excavation site and another through the berm adjacent to the perimeter road. These wells are sampled for volatile organic compounds (VOCs) in accordance with the approved groundwater sampling plan to monitor the impact of the residual contaminants. The first sampling event was performed during October 1998 (CDM, 1999). The data show a downward trend in contaminant concentrations, and all COCs in perched-zone groundwater have been below MCLs since April 2002, and the upper aquifer has not been impacted (CDM, 2003).

2.5.1.2 Current and Potential Future Site Use

IRP Site 1 is part of the active golf course, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be commercial/industrial-related options for the property.

2.5.1.3 Summary of Site Risk

The BWFS concluded that residual contamination at IRP Site 1 does not pose unacceptable risk to human health due to its significant depth (approximately 29 feet bgs). Table 2-10 summarizes the BWFS risk analysis results. Additionally, as evidenced by groundwater sampling results, the residual contamination does not pose an adverse risk to groundwater quality.

2.5.1.4 Remedial Action Objectives

There are no RAOs at IRP Site 1 since there is no unacceptable risk to human health or the environment.

2.5.1.5 Analysis of Alternatives

The Air Force excavated and disposed contaminated soil off site. Residual soil contamination remains at a depth of approximately 29 feet bgs and in contact with perched-zone groundwater. Due to the depth of buried residual waste, there is no unacceptable risk to human health.

Table 2-10

Summary of Site 1 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	5 to 29	0.1	1.5×10^{-7}	0.0015	—[3]	Dichlorobenzenes	Acceptable risk under industrial reuse scenario
Unrestricted	5 to 29	0.1	4.4×10^{-7}	0.0094	—[3]	Dichlorobenzenes	Acceptable risk under the unrestricted land use scenario

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

[3] Lead is not chemical of concern at IRP Site 1.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

Additionally, all COCs in perched-zone groundwater have been below MCLs since April 2002, and the upper aquifer has not been impacted (CDM, 2003).

Alternative 1 (NFA) is protective of human health and groundwater, since there is no unacceptable risk to human health or groundwater posed by the residual contamination at IRP Site 1.

2.5.1.6 Description of Selected Remedy

The selected remedy for IRP Site 1 is NFA.

2.5.1.7 Summary of Rationale for the Selected Remedy

Contamination at Site 1 remains buried beneath the golf course fairway at depths greater than 20 feet bgs. The site is currently used as a fairway for the Palm Meadow's Golf Course. Projected long-term plans for the site are industrial/commercial-related activities, which are consistent with city of San Bernardino zoning. Groundwater data from quarterly sampling events demonstrate contaminant levels in the perched-zone groundwater below MCLs and no impact to the upper aquifer.

The concerns for the site include: (1) unrestricted soil excavation that could bring contaminated soil to the surface allowing for exposure; and (2) installation of an upper aquifer well through the perched zone that could potentially contaminate the upper aquifer. Under current and expected future land uses, there is little possibility for exposure to contaminated soil or perched-zone groundwater. The perched zone is not a viable drinking water source; contaminant concentrations are below MCLs and do not threaten upper aquifer groundwater quality. There is limited risk (with a combined adult/child excess cancer risk of 4.4×10^{-7}, and a child HI of 0.0094) because contaminants are buried greater than 20 feet bgs; the most highly contaminated soil is greater than 29 feet bgs. This depth is beyond the range of normal soil excavation. Site-specific conditions could further reduce any potential exposure to the soil contaminants, e.g., the proximity to the airfield and site preparation work (using imported fill) would likely increase the elevation of the site to that of the adjacent airfield.

The selected remedy for IRP Site 1 is NFA. The remedy is based on monitoring data that demonstrate decreasing concentrations over time, no specific threat to upper aquifer groundwater quality, the depth at which the contaminants are buried, the highly improbable chance for future exposure, and the most likely continued land use under the industrial/commercial reuse scenario. This remedy is protective of human health and the environment. Contaminant levels are below the MCL and diminishing, and the likelihood of any future exposure is extremely small. The remedy addresses ARARs because contaminant concentrations are below the MCL. The remedy is protective in the short term because no activity will be taken to access the residual contamination, thus allowing for exposure during handling and transport. The remedy is readily implementable and will be cost effective.

2.5.1.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for unrestricted land use of IRP Site 1.

2.5.2 IRP Site 2 – Landfill No. 2

2.5.2.1 Site History

IRP Site 2 is located in the northeast corner of former Norton AFB and is the location of a former base landfill used between 1958 and 1980 (see Figure 1-2). Originally, it covered approximately

31 acres and was used for the disposal of general refuse, office waste, industrial waste, and IWTP sludge. Under CERCLA, the presumptive remedy for landfills is to leave waste in place and to provide an appropriate containment system (U.S. EPA, 1993a, 1993b). The rationale supporting this presumptive remedy reflects the cost and efforts required to excavate and transport landfill waste to a separate landfill, coupled with the CERCLA preference for on-site remedies and against moving wastes from one site to another. Under the presumptive remedy guidelines, various cover systems and associated gas control systems were evaluated in an EE/CA for IRP Site 2 (CDM, 1996e), and a natural soil cover was selected with an appropriate surface water control system (USAF, 1996c; IT Corporation, 1998). Because landfill gas (e.g., methane, PCE, TCE, and vinyl chloride) was present, a landfill gas control system was also required. The cover, surface water control, and gas control systems were described in an Action Memorandum (AM) (USAF, 1996c). The design (IT Corporation, 1998) for the landfill has been implemented with consolidation into a smaller footprint and construction of the landfill cover and gas collection/control systems completed in December 1998 and accepted by the BCT in February 1999.

2.5.2.2 Current and Potential Future Site Use

Site 2 is a closed landfill, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be passive open space.

2.5.2.3 Summary of Site Risk

The BWFS concluded that IRP Site 2 does not pose an unacceptable risk to human health or groundwater (CDM, 2003). However, the waste materials in the IRP Site 2 landfill were not completely characterized (although believed to be municipal waste).

2.5.2.4 Remedial Action Objectives

There are no human health COCs for IRP Site 2 based on the risk analysis. However, state landfill closure laws and regulations do establish maintenance requirements for IRP Site 2. Thus, the Air Force considers the following to be qualitative RAOs specific to IRP Site 2:

- Prevent contact with landfill waste and gases.

- Prevent or minimize migration of landfill contents to the vadose zone and to groundwater.
- Protect remedial system components and landfill cover from damage and protect the integrity of the cover and associated systems.
- Limit use of the property, by prohibiting use for residential purposes, hospitals for human care, public or private schools for persons less than 18 years of age, or day-care centers for children.

Because the waste materials in the IRP Site 2 landfill were not completely characterized (although believed to be municipal waste), the use restrictions will enhance the likelihood of achieving the RAOs and meeting California land use requirements related to landfills.

2.5.2.5 Analysis of Alternatives

The Air Force has completed the landfill cover, gas control, and surface water management systems at this site. These systems are part of the existing containment remedy for the landfill waste. The landfill is in the post-closure O&M phase, which will continue in accordance with the post-closure care plan.

Alternative 1 (NFA) would not meet the California ARARs for a closed landfill.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that run with the land. Alternative 2, coupled with the existing long-term O&M, would also provide assurance that ARARs would continue to be met in the future and that the residual risk is managed properly.

Alternative 2 provides for long-term control of the site by prohibiting activities that would adversely affect the integrity of the cover and control systems. The entire 31-acre site would be restricted to prevent disturbance to the landfill cover. ICs would, however, allow the Air Force access to the site for long-term O&M, monitoring, and inspections. Site fencing and signs warning against unauthorized personnel entry of the landfill area have already been installed. There are no short-term exposure concerns because all landfill construction actions have been completed, and the landfill gas treatment system has been constructed to address air quality-

related ARARs. Landfill closure ARARs require quarterly groundwater and soil gas monitoring until analytical results show no statistically significant releases from the landfill.

2.5.2.6 Description of the Selected Remedy

The selected remedy for IRP Site 2 is ICs as detailed in Section 2.3.4.2. This remedy adds ICs to the continuing operations, maintenance, and monitoring of the Site 2 landfill as specified in the existing, regulator-approved O&M Work Plan. The selected remedy is consistent with the anticipated future land use for Site 2 as a closed landfill. The ICs will be implemented to fulfill the following use limitations:

- Grantee covenants and agrees that it will not use IRP Site 2 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct any construction, excavation, drilling, grading, removal, trenching, filling earth movement, mining, planting that would disturb the soil or the landfill cover, including the vegetative cap, or the injection or release of water or other fluids except for the purpose of monitoring groundwater or landfill gas.
- Grantee covenants and agrees that it will not conduct or allow others to conduct any construction, excavation, drilling, grading, removal, trenching, filling earth movement, mining, planting that would result in contact with landfill waste materials.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance or removal of fencing or signs intended to exclude the public from the landfill.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause the surface application of water (e.g., irrigation) to the extent that the integrity of the landfill is impacted; nor the injection of water or other fluids that might affect groundwater flow direction.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that would cause disturbance of any landfill equipment or systems, including the groundwater monitoring systems, and settlement monuments, or that could affect the drainage, sub-drainage, or erosion controls for the landfill cover.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that limit access to any landfill equipment and systems, including the groundwater monitoring systems, settlement monuments, or the drainage, sub-drainage, or erosion controls for the landfill cover.

2.5.2.7 Summary of Rationale for the Selected Remedy

IRP Site 2 was closed through construction of a landfill cover and gas collection/treatment system. The current use of the site is that of a closed landfill; the projected long-term use of the site is expected to be passive open space. The selected remedy for the closed landfill is ICs that restrict land-use activities that could adversely affect the cover, including any type of earthwork (excluding O&M), and preclude the drilling of wells into or through the cover except those necessary for site O&M.

The selected remedy of ICs and continuing O&M of the containment system is protective of human health and the environment. Residual contaminants are contained and treated, and O&M procedures minimize worker exposure to site contaminants (landfill gas). ICs, coupled with long-term O&M, provide assurance that ARARs are met now and in the future and that the residual risk is managed properly. The remedy is protective in the short term because all landfill construction actions have been completed, and the landfill gas treatment system has been constructed to address air quality-related ARARs. Landfill closure ARARs require groundwater and soil gas monitoring until analytical results show no statistically significant releases from the landfill. The remedy is protective in the long term by prohibiting activities at the site that would adversely affect the integrity of the cover and control systems. Existing engineering controls to complement the ICs include site fencing to prevent unauthorized access. The entire 31-acre site is restricted to prevent disturbance of the landfill. The ICs allow the Air Force access to the site for long-term O&M, monitoring, and inspections. Site fencing and signs warning unauthorized personnel to stay outside of the landfill area have been installed. The landfill gas collection and destruction system reduces VOC concentrations in soil gas thus addressing the reduction of TMV of contaminants. The landfill closure remedy has already been implemented and is cost effective.

2.5.2.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at IRP Site 2 will allow for current and most likely future reuse plans for the site.

2.5.3 IRP Site 5 – Fire Protection Training Area No. 2

2.5.3.1 Site History

IRP Site 5 served as the training area for fire control and abatement exercises from the late 1950s through the 1970s. Site 5 is in the southern portion of the former base, east of the golf course (see Figure 1-2). Fire training exercises involved floating a layer of oil, fuel, or other combustible material on a layer of water and repeatedly igniting and extinguishing the material. RI results showed the site to contain metals (cadmium, copper, lead, and zinc) and dioxins in near-surface soils (to 10 feet bgs) and fuels (benzene, toluene, ethylbenzene, xylenes [BTEX]), solvents, and PAHs in deeper soils up to 40 feet bgs (CDM, 1993b, 1994b; Earth Tech, 1993).

The EE/CA (Earth Tech, 1995) and subsequent AM for IRP Site 5 (USAF, 1997b) selected soil vapor extraction (SVE) for remediation of fuel contamination, excavation followed by stabilization of the metals/dioxin-contaminated soil, and excavation and disposal of the PAH-contaminated soil. This removal action was completed during 1998 and involved an area of approximately 100,000 square feet. Excavation was performed to a maximum depth of 13 feet bgs, and confirmation samples were taken on the sidewalls and bottom of the excavation. The SAR impact berm adjacent to IRP Site 5 was also removed during the Site 5 removal action.

The SVE component of the remedy removed 22,600 pounds of hydrocarbons. The SVE system was operated from January 10, 1996, until July 10, 1997. The effectiveness of the SVE system was assessed through confirmation soil boring samples and vadose zone leaching modeling. The model simulations indicated that the SVE removal adequately addressed the hydrocarbon contamination and was protective of groundwater.

The soil excavation was performed in two phases. The first phase consisted of the removal of 21,104 tons of contaminated soil and 4,589 tons of rock and debris. This material was transported to the IRP Site 2 landfill. The lead in the contaminated soil was stabilized using 15 percent (by weight) Portland cement to meet State of California nonhazardous waste criteria. The soil that met nonhazardous criteria was used as foundation material for the landfill cap. The material not meeting the California nonhazardous waste criteria (1,443 tons) met federal nonhazardous waste criteria and was shipped to Browning Ferris Industries (BFI) landfill in La

Paz, Arizona, for disposal. The second phase involved excavation of 3,496 tons of contaminated soil, stabilized with 15 percent (by weight) Portland cement, which was shipped to the BFI landfill in Arizona for disposal as an RCRA nonhazardous waste. The excavation area was backfilled with clean soil to the level of the former topographic grade.

Confirmation sampling indicated the presence of cadmium and lead (from 3 feet bgs to at least 10 feet bgs) and dioxins (from 3 feet bgs to at least 10 feet bgs) in excess of residential PRGs. Additionally, arsenic was detected in excess of the background concentration. The area of impacted soil is approximately 150 feet by 350 feet. Figure 2-5 shows the locations where cadmium, lead, and dioxins (TCDD) exceed their residential PRGs, and where arsenic exceeds background at IRP Site 5. No groundwater contamination is associated with IRP Site 5 (CDM, 2000b).

2.5.3.2 Current and Potential Future Site Use

The site is being used for storage of golf course landscape waste prior to off-site disposal, and the property is currently zoned industrial/commercial by the city of San Bernardino. The projected long-term use of the site is expected to be industrial/commercial-related.

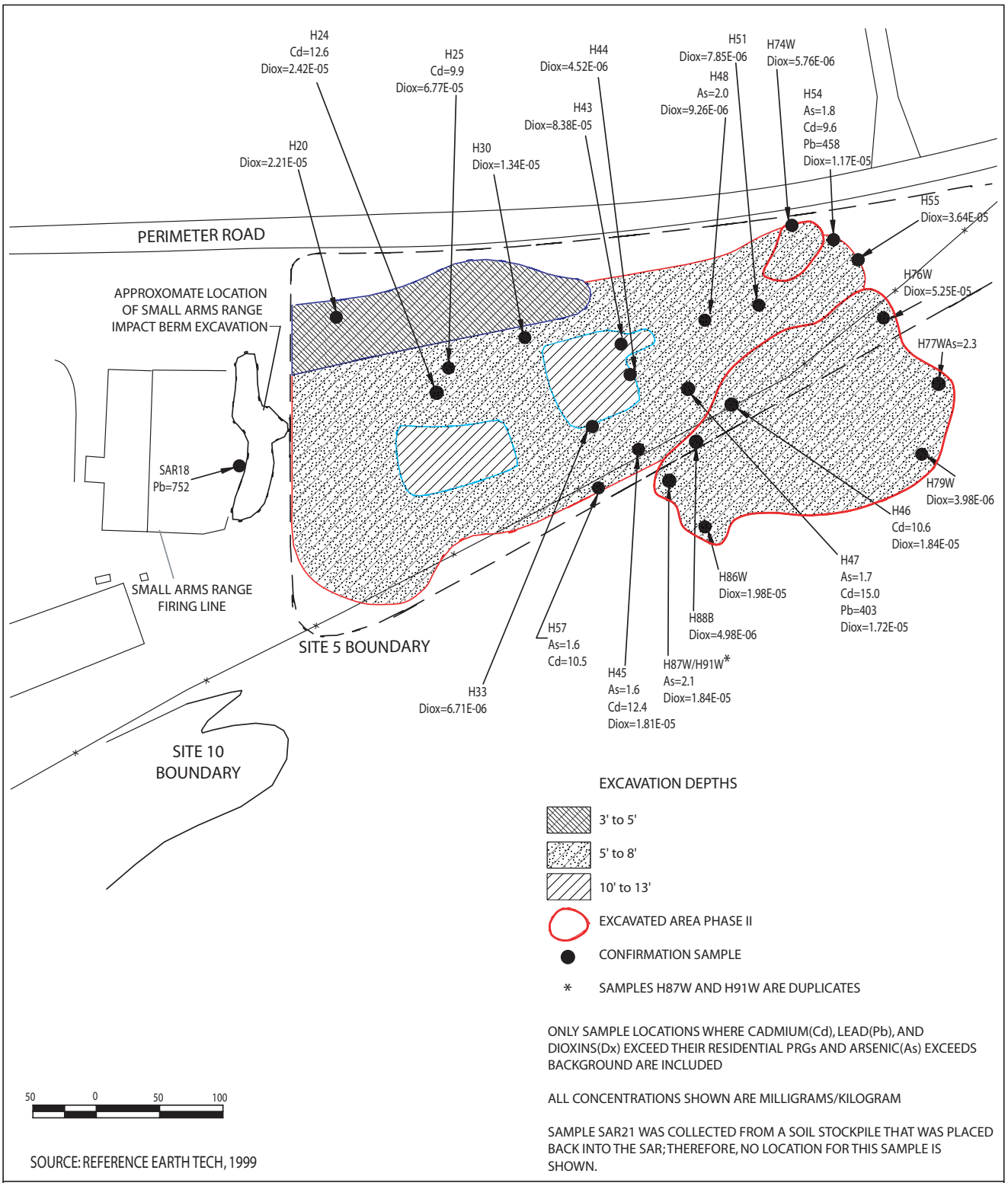
2.5.3.3 Summary of Site Risk

The BWFS concluded that IRP Site 5 does not pose unacceptable cancer risk or non-cancer HI; however, the modeled child blood-lead level was unacceptable for unrestricted land use. Table 2-11 summarizes the BWFS risk analysis results.

2.5.3.4 Remedial Action Objectives

The RAO for IRP Site 5 is:

Limit use of property to prevent exposure to lead-contaminated soil under an unrestricted land use scenario.



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LOCATIONS WHERE CADMIUM, DIOXINS, AND LEAD EXCEED PRGs AND ARSENIC EXCEEDS BACKGROUND
IRP SITE 5
FORMER NORTON AIR FORCE BASE

Figure 2-5

Table 2-11

Summary of Site 5 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	3 to 10	1.2	8.9×10^{-7}	0.011	5.4	Arsenic, lead, dioxins	Acceptable risk under industrial reuse scenario
Unrestricted	3 to 10	1.2	1.0×10^{-5}	0.5	12.6	Arsenic, lead, dioxins	Cancer risk is within risk management range; non-cancer HI risk is acceptable; child blood-lead level exceeds 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

2.5.3.5 Analysis of Alternatives

The Air Force removed contamination from the fire protection training area, using both SVE and soil excavation. The SVE system removed soluble contaminants to concentrations protective of groundwater. The near-surface contamination was removed along with a significant portion of the subsurface contamination. The industrial cancer risk at this site is 8.9×10^{-7}, the HI is 0.011, and the adult blood-lead level is 5.4 micrograms per deciliter (µg/dL), all indicating minimal risk. The unrestricted cancer risk, assuming excavation to 5 feet bgs and bringing the contaminants to the surface, is 1.0×10^{-5} (within the risk management range of 1×10^{-4} to 1×10^{6}), the child HI is 0.5, and the child blood-lead level is 12.6 µg/dL (exceeding the 10 µg/dL target). Groundwater monitoring data collected since the mid-1980s have shown no groundwater impact, even prior to the soil removal and SVE actions; therefore, no future adverse environmental impacts are predicted to groundwater.

Alternative 1 (NFA) is not potentially protective of human health and the environment under the unrestricted land-use scenario. The land is zoned for industrial/commercial uses, and the proposed base master plan identifies the site area for industrial buildings. The current and likely

near-future use of the site is that of a support area for the adjacent Palm Meadows Golf Course. Projected long-term reuse is for industrial/commercial-related projects. NFA would fail to provide adequate assurance of long-term effectiveness and permanence under an unrestricted land use scenario.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." The ICs would prohibit residential reuse of the site, notify others about the presence of the soils contamination, and allow for access to inspect ongoing land-use activities. The ICs would address the entire 1.2-acre site. There are no short-term concerns with this alternative.

Alternative 3 (Containment) does not apply to this site, other than the existing 5 feet of soil used to backfill the site excavation following the soil removal action.

2.5.3.6 Description of the Selected Remedy

The selected remedy for IRP Site 5 is ICs as detailed in Section 2.3.4.2. The ICs will be implemented to fulfill the following use limitations:

- Grantee covenants and agrees that it will not use IRP Site 5 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that limit access to the site for inspections.

2.5.3.7 Summary of Rationale for the Selected Remedy

Residual soil contamination at IRP Site 5 (primarily lead and dioxins) remains buried beneath 3 to 5 feet of backfill soil, minimizing any direct contact threat. Located immediately beneath the upper soil cover is soil that was pushed into the Site 5 excavation from the adjacent SAR impact berm. The soil from the impact berm is assumed to contain lead, potentially at concentrations greater than the residual lead at Site 5. The combined unrestricted child/adult residual excess cancer risk for Site 5 is 1×10^{-5}, which is within the acceptable risk management range (1×10^{-4} to 1×10^{-6}), and the child blood-lead level is 12.6 µg/dL, exceeding the 10 µg/dL target. The blood-lead level does not include lead that may be in the SAR impact berm soil at Site 5. The site is currently being used for storage of golf course landscape waste prior to off-site

disposal. The projected long-term reuse plans are as an extension of the adjacent Palm Meadows Golf Course or industrial/commercial-related uses for the area south of the airfield runway, which is consistent with city of San Bernardino zoning. Reuse of the site for residential purposes is not possible due to its proximity to the airfield and FAA restrictions.

This selected remedy is based on the current and most likely reuse of the site. The risk to industrial workers is acceptable, and it is unlikely that the site can be redeveloped for anything other than open space and/or commercial/industrial purposes due to the proximity of the runway, and the site location adjacent to the Santa Ana River floodplain. The remedy is protective of human health and the environment based on the most likely exposure scenario. The remedy addresses ARARs because contaminant concentrations are within the risk management range. The remedy is protective in the short term because no additional activity will be taken to access any residual contamination. The remedy is protective in the long term because any development will be controlled through the use of ICs; no residential (unrestricted) use will be allowed. The remedy is readily implementable and will be cost effective.

2.5.3.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at IRP Site 5 will allow for current and most likely future reuse plans for the site. Unrestricted reuse will be prohibited in accordance with the ICs and deed restrictions.

2.5.4 Small Arms Range

2.5.4.1 Site History

The SAR was located immediately adjacent to IRP Site 5 and historically included an impact berm. The berm was contaminated by lead projectiles as a result of small arms practice, and a removal action was addressed in a work plan (Earth Tech, 1997b). Because the berm was contiguous with Site 5, portions of the berm were removed during the Site 5 removal action. A total of 11,478 tons of material was removed from the SAR, including 210 tons of bullet fragments and rock, classified as RCRA hazardous waste, and disposed at the Laidlaw Environmental Services landfill in Westmoreland, California. Nonhazardous waste, including 128 tons of rock and debris and 9,124 tons of soil, was placed at the IRP Site 2 landfill. The

remaining 2,106 tons of soil were stabilized with 15 percent (by weight) Portland cement. This material did not meet California nonhazardous waste criteria and was shipped to the BFI landfill in Arizona for disposal. Confirmation samples were collected, and lead was detected above the residential PRG at one location.

Following completion of the soil removal action, much of the remaining portion of the SAR impact berm was pushed into the Site 5 excavation as fill. The soil from the berm was then covered with soil imported from the adjacent riverbed to bring the Site 5 area back to its original grade. The firing line area of the SAR remains as a ground depression and is not being used. Projected long-term plans for the area are industrial/commercial-related use.

2.5.4.2 Current and Potential Future Site Use

The firing line area remains as a ground depression and is not being used. Projected long-term use of the site is expected to be commercial/industrial-related options for the property.

2.5.4.3 Summary of Site Risk

The BWFS concluded that the modeled child blood-level and non-cancer risk are unacceptable for residential (unrestricted) reuse of the site. Table 2-12 summarizes the BWFS risk analysis results.

2.5.4.4 Remedial Action Objectives

RAOs for the SAR are:

- Limit use of property to prevent exposure to lead-contaminated soil under an unrestricted land use scenario.
- Limit use of property to prevent exposure to non-cancer risk contaminated soil under an unrestricted land use scenario.

2.5.4.5 Analysis of Alternatives

The SAR was subjected to a removal action that involved collection and disposal of lead projectile debris and the use of the projectile impact berm as sub-base fill for the adjacent Site 5

Table 2-12

Summary of SAR Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	Surface	0.1	9.3×10^{-7}	0.046	10.7	Arsenic, lead, dioxins	Acceptable cancer and non-cancer risk under industrial reuse scenario; adult blood-lead level (unrestricted exposure) marginally exceeds the 10 µg/dL target.
Unrestricted	Surface	0.1	1.1×10^{-5}	2.2	32.9	Arsenic, cadmium, lead	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.064); child non-cancer HI risk >1; child blood-lead level exceeds 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

excavation. The portion of the berm pushed into the Site 5 excavation is buried beneath approximately 5 feet of backfill soil. Some surface soil contamination remains in areas of the SAR not addressed by the removal action. The industrial-reuse cancer risk at this site is 9.3×10^{-7}, the HI is 0.046, and the adult blood-lead level is 10.7 µg/dL. The blood-lead level (10.7 µg/dL) exceeds the adult limit of 10.0 µg/dL. The unrestricted cancer risk is 1.1×10^{-5} (within the risk management range of 1×10^{-4} to 1×10^{-6}), the child HI is 2.2, and the modeled child blood-lead level is 32.9 µg/dL (exceeding the 10 µg/dL target). Lead, therefore, poses the primary risk at this site.

Alternative 1 (NFA) is potentially not protective of human health and the environment under an unrestricted land use scenario. The site includes elevated concentrations of lead (a persistent metal) in surface soils, which poses a direct contact risk to children. The site is currently not being used. The most likely near-future reuse of the site is as an extension of the adjacent Palm Meadows Golf Course. Projected long-term reuse plans are for industrial/commercial-related uses. It is very unlikely that the property would be developed for residential type of use because

it is zoned by the city of San Bernardino as industrial/commercial, and the proposed master plan for the base identifies the site area for industrial buildings. In addition, the site is adjacent to the active runway.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." ICs would prohibit unrestricted (residential) reuse of the site, notify others about the presence of the soil contamination, and allow access to inspect ongoing land-use activities. The ICs would address the entire 0.1-acre site and identify surface soil contamination. There are no short-term concerns with this alternative.

Alternative 3 (Containment) is one possible option for this site. The firing area of the former SAR remains as a ground depression below the grade of the adjacent land area. A 5-foot layer of backfill soil could be used as the final cover material over the contaminated soil. Placement and covering of soil within the firing line area could be performed to address soil-handling, placement, and containment (cover) ARARs. The containment alternative could be completed in about 3 months. The containment cover would marginally improve short-term protectiveness by reducing the opportunity for dermal contact and ingestion of contaminated soil. However, long-term protectiveness would require the addition of, and reliance on, the ICs as specified in Alternative 2. There is considerable additional cost for containment without applicable benefit to human health or the environment.

Alternative 4 (Removal), would provide some additional long-term effectiveness and permanence by removing the contamination from the site, but not without significant additional costs. This alternative could be implemented to meet ARARs for excavation, transport, waste classification, and disposal of contaminated soil. The potential for short-term exposure of workers and the community would need to be controlled for any removal action. The removal alternative could be accomplished in less than 3 months and would result in long-term protection for the site allowing for unrestricted reuse. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

2.5.4.6 Description of the Selected Remedy

The selected remedy for the SAR is ICs as detailed in Section 2.3.4.2. The ICs will be implemented to fulfill the following use limitations:

- Grantee covenants and agrees that it will not use the SAR for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that limit access to the site for inspections.

2.5.4.7 Summary of Rationale for the Selected Remedy

Residual contamination at the SAR consists of lead in surface soils at concentrations that would potentially pose a risk to children under an unrestricted land use scenario. The combined unrestricted adult/child surface soil cancer risk is 1.1×10^{-5}, which is within the acceptable risk management range of 1×10^{-4} to 1×10^{-6}, and the modeled child blood-lead level is 32.9 µg/dL, exceeding the 10 µg/dL target. The site is not being used. The projected long-term plans for reuse are as an extension of the adjacent Palm Meadows Golf Course or industrial/commercial-related uses. The site is adjacent to the Santa Ana River floodplain and the airport runway. Reuse of the site for residential (unrestricted) purposes is not likely. The concern for the site is excavation and proper reuse of the lead-contaminated soil. The selected remedy for the SAR is to establish ICs precluding unrestricted land use.

The selected remedy is protective of human health and the environment. The risk to industrial workers is acceptable, and the probable reuse of the site is for industrial/commercial building structures. The ICs will ensure long-term protectiveness, and no unrestricted usage will be allowed. The selected remedy does not involve treatment, but residual contaminant concentrations do not require treatment under State and Federal waste management regulations. The remedy meets ARARs because contaminant concentrations are within the risk management range, and no soil handling and disposal will be required. The remedy is protective in the short term because no activity will be taken to access or move the residual contamination. The remedy is readily implementable and will be cost effective.

2.5.4.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at the SAR will allow for current and most likely future reuse plans for the site. Unrestricted (residential) land use will be prohibited in accordance with the ICs and deed restrictions.

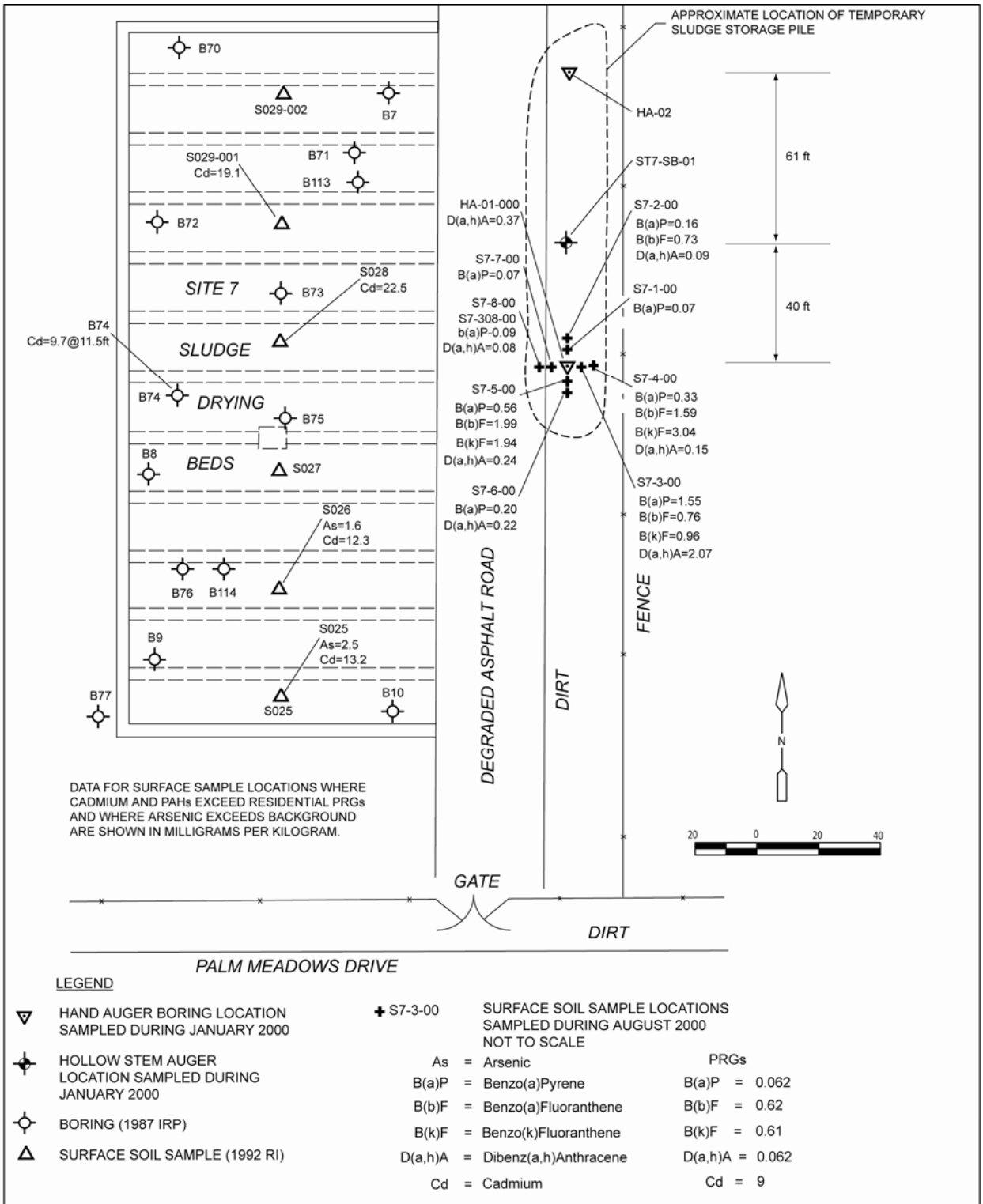
2.5.5 IRP Site 7 – IWTP Sludge Drying Beds

2.5.5.1 Site History

IRP Site 7 is located in the southeast corner of the former IWTP compound (see Figure 1-2). Although Site 7 is part of this CERCLA ROD, as part of the former IWTP, Site 7 also must be closed as part of the RCRA corrective action termination of the interim status facility (two separate closure processes). The site included 12 concrete-walled, unlined sludge-drying beds, covering approximately 17,280 square feet. The beds were used to dry sludge generated at the IWTP until 1987. During removal of the sludge, it was temporarily stored at the northeast corner of the site.

Sampling during the IRP and 1991 RI indicated some metal concentrations above background concentrations in near-surface samples (CDM, 1993b).

In 1999, DTSC, as part of the RCRA closure evaluation for the IWTP facility, requested sampling of the concrete walls and soils within the waste pile area. Sampling was performed during January 2000. The concrete was analyzed for metals, radionuclides, chlorinated pesticides, PCBs, and PAHs. Low concentrations of pesticides, PCBs, and PAHs were reported, and metals and radionuclides reflected background ranges (CDM, 2000c). The soil samples exhibited low concentrations of metals, pesticides, PCBs, and PAHs in the surface interval only. The former waste pile appears to have been located on what is now highly weathered asphalt pavement. Based on the soil sampling results, DTSC requested additional sampling of the waste pile area for PAHs. Eight surface soil samples were collected in June 2000 (CDM, 2001). Cadmium, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenzo(a,h) anthracene exceeded residential PRGs as shown on Figure 2-6.



NortonROD/006

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LOCATIONS WHERE PAHs AND CADMIUM EXCEED PRG AND ARSENIC EXCEEDS BACKGROUND IRP SITE 7 AREA FORMER NORTON AIR FORCE BASE

Figure 2-6

Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review.

2.5.5.2 Current and Potential Future Site Use

The site is currently not being used. The property is zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be commercial/industrial-related options for the property.

2.5.5.3 Summary of Site Risk

The BWFS concluded that, although excess cancer risk is within the acceptable risk range, the child non-cancer HI was unacceptable, due primarily to PAHs in surface soil. The unrestricted land use exposure risk scenario was calculated at the highest end of the acceptable range.

Table 2-13 summarizes the BWFS risk analysis results. The physical removal action in March 2004 further reduced the level of PAHs and residual cancer risk.

Table 2-13

Summary of Site 7 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 20	0.5	1.2×10^{-5}	0.03	3.5	Arsenic, PAH	Acceptable risk under industrial reuse scenario
Unrestricted	0 to 20	0.5	1.0×10^{-4}	1.4	5.3	Arsenic, PAH	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.041); child non-cancer HI risk >1; blood-lead level less than 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
PAH = polynuclear aromatic hydrocarbon
µg/dL = micrograms per deciliter

2.5.5.4 Remedial Action Objectives

As stated in Section 2.5.5.1, Site History, Site 7 is part of an RCRA interim status facility. The RAOs for IRP Site 7 are intended to integrate both the CERCLA response and RCRA corrective action obligations, which are two separate processes (Norton FFA, Section 17):

- Remove concrete drying beds (RCRA obligation).
- Reduce the non-cancer risk to an individual to an HI less than 1 ("the NCP non-cancer risk remedial goal") (CERCLA/RCRA obligations).

Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review.

2.5.5.5 Analysis of Alternatives

IRP Site 7 exhibits surface soil contamination by PAHs (possibly the result of a highly weathered asphalt roadway), PCBs, and metals. The contaminants are typically insoluble and relatively persistent. The industrial-reuse cancer risk at this site is 1.2×10^{-5}, the HI is 0.03, and the adult blood-lead level is 3.5 µg/dL. The unrestricted cancer risk is 1×10^{-4} (the high end of the risk management range of 1×10^{-4} to 1×10^{-6}), the child HI is 1.4, and the modeled child blood-lead level is 5.3 µg/dL. The site, therefore, poses a potential direct contact risk, primarily under the unrestricted land use scenario. The site is adjacent to the golf course. Long-term reuse plans for the site are as an extension of the golf course or for industrial/commercial-related uses.

Alternative 1 (NFA) does not address management of residuals and may not be protective of human health for unrestricted land use. It is unlikely that the property would be developed for unrestricted use because it is zoned industrial/commercial, and the proposed master plan for the base identifies the site area being used for industrial/commercial buildings. NFA does not address the RCRA requirement to remove facilities and equipment once operations are terminated.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." ICs would prohibit unrestricted

reuse of the site, notify others about the presence of the soils contamination, and allow access to inspect ongoing land-use activities. The ICs would address the entire 0.5-acre site and identify surface soil contamination. There are no short-term concerns with this alternative. ICs do not address the RCRA requirement to remove facilities and equipment once operations are terminated.

Alternative 3 (Containment) is a consideration for providing additional protection should the golf course be extended over the site or be paved for industrial use. Containment would consist of a nominal 2-foot layer of soil over which the golf course sod could be grown under one reuse scenario. Containment could be accomplished in a matter of weeks and would be highly protective in the short term because minimal contact with waste would occur. Containment would need to be accompanied by the ICs alternative for long-term protectiveness, and would be only marginally more protective than ICs alone. Containment does not address the RCRA requirement to remove facilities and equipment once operations are terminated.

Alternative 4 (Removal) would provide for long-term effectiveness and permanence by removing the contamination from the site. Because the site contamination is limited, the action could be easily implemented, and would likely result in site conditions allowing for unrestricted land use. Future Air Force cost savings (IC monitoring and reporting) would result from cleanup to unrestricted land use levels. Removal actions do pose short-term exposure concerns because of the material handling required. Any additional soil removal could be accomplished to address soil excavation, transport, and disposal of ARARs. Soil removal could be accomplished in a matter of weeks, but would have slightly greater short-term risk concerns due to soil handling and transport. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV. The concrete walls that form the Site 7 sludge beds are not a source of the contamination; however, the walls need to be removed as part of the RCRA closure of the former IWTP facility. Removal of the walls would also facilitate reuse of the site location by the IVDA.

Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review.

2.5.5.6 Description of the Selected Remedy

As part of the IWTP RCRA corrective action termination of the interim status facility, concrete structures of the drying beds were removed and disposed off base at an RCRA-permitted facility and for selective removal of surface soil contaminated with PAHs. The Air Force does not intend to remove the abandoned asphalt road or the PAHs associated with its decay. At the time of the selective surface removal, the remaining contaminant levels will be characterized to ensure that all contaminated soil related to the use of the site area for IWTP sludge drying and management have been removed to within the acceptable risk management range of 1×10^{-4} to 1×10^{-6} with an HI less than 1.0. Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review.

2.5.5.7 Summary of Rationale for the Selected Remedy

IRP Site 7 exhibits surface soil contaminated by PAHs and the remains of concrete walls that formed the IWTP sludge-drying beds. The site is within the compound that includes the former site of the IWTP facility. The combined unrestricted adult/child residual excess cancer risk is 1×10^{-4} (at the high end of the acceptable risk management range of 1×10^{-4} to 1×10^{-6}), and the child non-cancer HI is 1.4. The selected remedy for Site 7 is removal of the concrete structures of the drying beds for disposal off base at an RCRA-permitted facility and for selective removal of surface soil contaminated with PAHs. Projected long-term reuse plans for the site are industrial/commercial-related development, which is consistent with city of San Bernardino zoning.

The remedy is protective of human health and the environment through removal of surface contamination that poses a potential risk under an unrestricted land use scenario. The remedy will address ARARs involving concrete, soil, and waste excavation, transport, and disposal, as well as for worker and community protection. The remedy is protective in the short term through implementation of measures to prevent release of contaminants during waste handling and transport. The remedy is protective in the long term due to the reduction in contamination at the site. Soil contaminant concentrations are not sufficient to warrant treatment prior to disposal. The remedy is readily implementable and cost effective.

Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004, and the CERCLA closure report is in review.

2.5.5.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at IRP Site 7 will allow for unrestricted reuse of the site. Physical removal and disposal of the concrete-walled sludge-drying beds and surface soils were completed in March 2004 and the CERCLA closure report is in review.

2.5.6 IRP Site 10 – Landfill No. 1

2.5.6.1 Site History

Site 10 is located along the southern base boundary in the eastern portion of the golf course (see Figure 1-2). Landfill No. 1 was used by the Air Force from 1943 to 1958, primarily for disposal of general refuse, which was apparently burned at the site. The 1984 to 1995 investigations, which included sampling for metals, pesticides, PAHs, and PCBs, indicated the presence of metals in ash (primarily chromium and lead) above the residential soil PRGs in shallow soil (0 to 2 feet bgs).

Based on the RI data for metals, an RA for Site 10 was evaluated in an EE/CA (CDM, 1996f). Because contamination was not significantly above industrial soil cleanup goals, the Air Force elected to establish a deed restriction for the site (USAF, 1997d). However, the ERA (CDM, 1998a) determined that the contamination was localized, and concentrations of chromium and lead at the hot spots posed a significant risk to plants and animals. The Air Force responded by developing a hot-spot removal plan for Site 10 (Bechtel Environmental, 1997b). A removal action was performed at four hot spot locations that resulted in excavation of 340 cubic yards of contaminated soil. Approximately 224 cubic yards of contaminated soil were disposed at the Site 2 landfill, and 116 cubic yards were disposed off site (Bechtel Environmental, 1998).

Confirmation samples were collected upon completion of the removal action, and cadmium and lead exceeded their respective residential soil PRGs. No groundwater contamination is associated with Site 10 (CDM, 2000b).

DTSC requested (in their comments on the draft final version of the BWFS dated June 2, 1999) further characterization of PAHs and dioxins. In January 2000, the Air Force collected additional soil samples for PAHs and dioxins. The data are reported in a Technical Memorandum dated February 21, 2000 (CDM, 2000d).

PAHs were not detected above residential PRGs. Dioxins were detected within and adjacent to the ash material at concentrations in excess of the residential PRGs. Further characterization of dioxins was performed in September 2000 (CDM, 2000e). Dioxins were detected primarily along the base boundary among surface rubble, but also within habitat for two endangered species, the San Bernardino kangaroo rat and the Santa Ana River woolly star.

Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in preparation.

2.5.6.2 Current and Potential Future Site Use

The northern portion of the site is used as a golf course fairway, and the property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site north of the base boundary is expected to be industrial-related. The southern portion of the site includes habitat for two endangered species, and is bounded by a man-made flood protection levee. The southern portion is off base and is zoned open space with unrestricted public access.

2.5.6.3 Summary of Site Risk

The BWFS concluded that, even though the unrestricted cancer risk was within the risk management range, residual risk to human health posed by dioxins would not allow for unrestricted reuse. Several factors went into this determination, including maximum dioxin concentrations of over an order of magnitude greater then the exposure point concentration used in the risk assessment calculation and its persistent, bio-accumulative nature. In addition, the dioxin concentration posed potential adverse risk to ecological receptors. Table 2-14 summarizes the BWFS risk analysis results. The physical removal action completed in 2004 reduced the level of dioxins and residual cancer risk; the closure report is in regulatory review.

Table 2-14

Summary of Site 10 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 4	6	1.4×10^{-6}	0.019	4.6	dioxins, metals, lead	Acceptable risk under industrial reuse scenario
Unrestricted	0 to 4	6	1.9×10^{-5}	0.86	9.4	dioxins, metals, lead	Cancer risk is within risk management range; non-cancer HI risk is acceptable; blood-lead level less than 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

2.5.6.4 Remedial Action Objectives

RAOs for IRP Site 10 are:

- Reduce the ecological hazard quotient to less than 1.
- Reduce the lifetime excess cancer risk to an individual of between 1×10^{-4} and 1×10^{-6} using 1×10^{-6}.

Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in regulatory review.

2.5.6.5 Analysis of Alternatives

Landfill No. 1 was subjected to a removal action for metals contamination based on the recommendations made in the 1998 ERA (CDM, 1998a). Dioxin contamination was discovered after the removal action was completed, prompting the evaluation of additional actions. The results of the HHRA demonstrated that cancer risk from residual contamination is 1.4×10^{-6}, HI is 0.019, and adult blood-lead level is 4.6 µg/dL, the lower end of the risk management range for industrial reuse. The cancer risk from residual contamination for unrestricted land use is 1.9×10^{-5} (within the risk management range of 1×10^{-4} to 1×10^{-6}), child HI is 0.86, and child blood-

lead level is 9.4 µg/dL. Additionally, the highest dioxin levels are not located on former base property and include endangered species habitat. Residual dioxin contamination is in surface and near-surface soil (typically 0 to 2 feet bgs), with the highest concentrations associated with ash material found along the base boundary.

A portion of Site 10 includes habitat for two endangered species. Dioxin concentrations within the habitat are significantly less than the concentrations within the soil ash. The concern for the site includes prevention of human exposure to residual contamination under an unrestricted land-use scenario and protection of the endangered species and their habitat. A portion of the dioxin contamination is beneath the golf course, land owned by the Air Force and leased to the IVDA. The off-base contamination is on land owned by the city of Riverside. Alternative evaluation must consider land-use options of both landowners.

Alternative 1 (NFA) does not address the management of residual contamination and may not be protective of human health for unrestricted land use. The ERA determined that the NFA alternative would not be protective of ecological receptors. Unrestricted land use is highly unlikely since the site is partially within the Santa Ana River floodplain and designated as endangered species habitat. However, there are no restrictions to public access to the site and its vicinity.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." As with the NFA alternative, ICs would not be protective of ecological receptors. ICs would prohibit unrestricted land use of the site, notify others about the presence of the soils contamination, and allow access to inspect ongoing land-use activities. The ICs would address the entire site area that exhibits dioxin contamination above the residential PRG (5 to 10 acres) and identify surface soil contamination. There are no short-term concerns with this alternative.

Alternative 3 (Containment) is considered for providing additional protection for contamination beneath the golf course portion of Site 10 and to provide ecological and human health protection for the off-site portion of Site 10. Containment by capping the area using 2 feet of backfill soil would require rebuilding portions of the golf course fairways. Implementation would require

consultation with the USFWS. In addition, the containment alternative would likely need to include ICs prohibiting unrestricted land use.

Alternative 4 (Removal) would provide long-term effectiveness and permanence by removing dioxin contamination from the site, but not without significant additional cost. Although contamination above ambient levels affects approximately 15 acres, the area of highest concentrations only encompasses 5 to 10 acres. Soil contamination is shallow, and a removal action may only involve depths of approximately 2 feet bgs. Removal of the highest concentrations of dioxins (greater than 10 nanograms per kilogram [ng/kg]) would reduce the average soil concentration for dioxin contamination to the 10^{-6} unrestricted risk range point of departure for determining remediation goals. The ERA concluded that a 10 ng/kg level would also be protective of ecological receptors. Backfilling with clean soil would further reduce the opportunities for exposure to any residual contamination. Implementation would require consultation with the USFWS regarding endangered species habitat. For removal based on 10 ng/kg, long-term controls in the form of ICs would not be necessary. Removal poses short-term exposure concerns because of the material handling required. Soil removal could be accomplished to address excavation, transport, and disposal ARARs that would be protective of human health and the environment during implementation. Soil removal could be accomplished in about 1 month. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

Soil excavated from Site 10 could be disposed in one of three manners. The excavated soil could be transported off site for disposal at a regulated facility. Off-site disposal would have short-term risks due to soil handling and transport and long-term concerns with the receiving facility. Excavated soil could be transported for disposal at a new cell constructed at the Site 2 landfill. This option would have fewer short-term concerns, with long-term concerns the same as for Site 2. Construction of a new cell could reduce the amount of developable land in the NBA. Excavated soil could be disposed in the SAR depression. This option would have the least short-term handling concerns, with long-term concerns addressed through the Norton AFB ICs oversight and enforcement process. The regulatory agencies and IVDA have indicated a preference for off-site disposal of the wastes.

Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in regulatory review.

2.5.6.6 Description of the Selected Remedy

The selected remedy for IRP Site 10 is excavation and disposal of dioxins in excess of 10 ng/kg, a value determined in the BWFS to be protective of both human health (unrestricted reuse) and the environment (ecological receptors). The residual unrestricted cancer risk, based upon a 10 ng/kg cleanup level, would approach the 10^{-6} risk range point of departure (less than 3×10^{-6} unrestricted exposure scenario) and would result in a ecological receptor hazard quotient of less than 1.

The approximate areas to be excavated to attain cleanup, based on both 3.9 ng/kg (1×10^{-6} cancer risk level) and 10 ng/kg, are compared on Figure 2-7. The area of cleanup to 10 ng/kg is approximately 300,000 square feet less than the area to attain cleanup to 3.9 ng/kg. The amount of soil to be removed to attain cleanup to 10 ng/kg is approximately 20,000 cubic yards less than the amount of soil to attain cleanup to 3.9 ng/kg. The excavated soil will be transported off site for disposal in a regulated facility. Following soil excavation, the site will be restored to its current land use.

Physical removal and disposal of dioxin-contaminated soil were completed in August 2004, and the closure report is in regulatory review. The closure report includes characterization of remaining contaminant levels and risk assessment to demonstrate that Site 10 has been remediated to the acceptable risk range.

2.5.6.7 Summary of Rationale for the Selected Remedy

Risk associated with the residual soil contamination at Site 10 is acceptable to human health exposure based on current land use, but potentially unacceptable under an unlikely future unrestricted land-use scenario. Additionally, risk calculated prior to removal was unacceptable to ecological receptors. The site, located between the golf course and the Santa Ana River, is protected from the river floodplain by a flood control berm. The northern portion of the site is currently used as a golf course fairway. The southern portion of the site includes habitat for two

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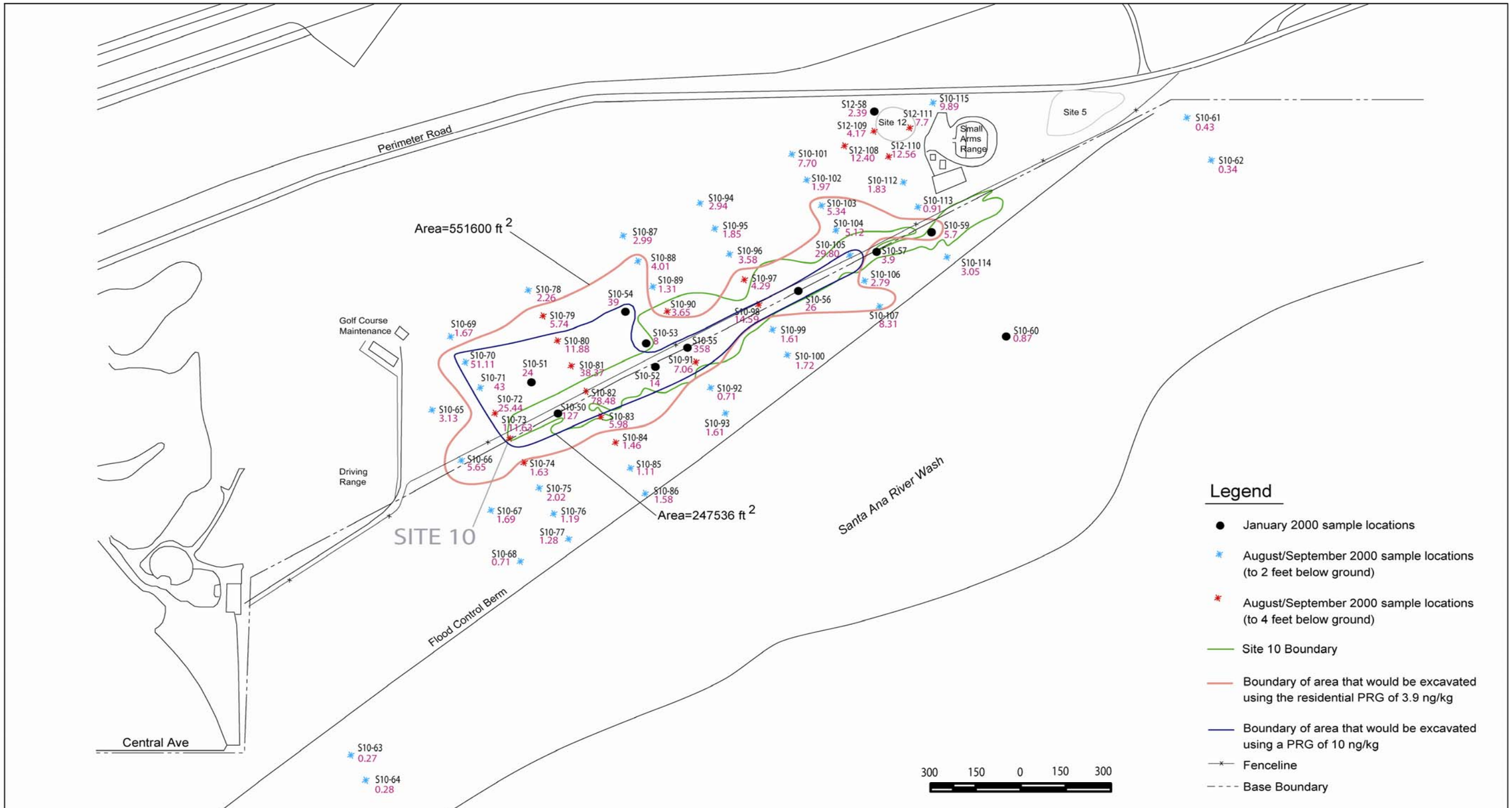

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COMPARISON OF AREAS TO BE EXCAVATED BASED ON PRG OF 3.9 ng/kg AND 10 ng/kg IRP SITE 10

Figure 2-7

NortonROD/005

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endangered species, and is bounded by a man-made flood protection levee. The most likely future use is as a golf course fairway north of the base boundary or industrial/commercial-related uses; the southern portion, south of the golf course, is open space.

The combined child/adult surface soil excess cancer risk is 1.9×10^{-5} for unrestricted land use, above the 10^{-6} point of departure for determining remediation goals, and the child blood-lead level is predicted to be 9.4 µg/dL. Child and adult HIs are less than 1. Soil contamination concentrations in native habitat exceed levels protective of endangered species. The off-base portion of the site is open space with unrestricted public access. Based on these considerations, the selected remedy is excavation and removal of soil containing dioxins in excess of 10 ng/kg for both the on-base and off-base portions of Site 10. The U.S. EPA residential PRG is 3.9 ng/kg for dioxins, while the Site 10 ERA indicates that 10 ng/kg would be protective of ecological receptors. Cleanup to 3.9 ng/kg would be considerably more expensive with only a very marginal reduction in residual risk. Following completion of the removal to 10 ng/kg, the exposure point concentration for the remaining dioxin contamination will approach 3.9 ng/kg, thereby addressing the human health concern. The 10 ng/kg cleanup goal for the site will, therefore, minimize the impact to endangered species habitat but, at the same time, be protective of human health and ecological receptors.

This remedy is protective of human health, the environment, and biological receptors through removal of dioxin-contaminated soil exceeding 10 ng/kg and collaterally the metals that exceed residential PRGs. Removal will ensure long-term protectiveness through containment of the soil in an off-site facility subject to long-term maintenance and control, precluding the possibility for exposure. Short-term protectiveness will be achieved through proper soil handling (e.g., dust control) and worker personal safety precautions during excavation and transport of the soil. There will be a short term, managed risk to the community due to the increased truck traffic. ARARs for dust control, worker protection, and soil disposal will be addressed through proper soil handling procedures. The soil is not a designated waste, and land disposal requirements will not be triggered. The remedy is readily implementable using standard construction equipment. The selected remedy does not involve treatment, and contaminant concentrations do not require

treatment under state and federal waste management regulations. The remedy will be cost effective.

Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in regulatory review.

2.5.6.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at IRP Site 10 will allow for unrestricted reuse of the site. Physical removal and disposal of dioxin-contaminated soil were completed in 2004, and the closure report is in regulatory review.

2.5.7 IRP Site 17 - Drummed Waste Storage Area/Waste Fuel and Solvent Sump

2.5.7.1 Site History

IRP Site 17 is located in the southwestern corner of the former IWTP compound (see Figure 1-2). Although Site 17 is part of the CERCLA ROD, as part of the former IWTP, Site 17 is undergoing RCRA closure as part of the corrective action termination of the RCRA interim status facility (two separate processes). The former IWTP treated industrial wastewater from the repair of military aircraft from 1960 to 1993. Most of the IWTP facility was removed in 1995 (GEC Environmental Consultants, Inc., 1993a; Tetra Tech, Inc., 1994, 1996). IRP Site 17 is comprised of two connected brick-lined sumps that the Air Force constructed during the early 1960s for the purpose of burning waste fuels and solvents. The Air Force initiated burning, but in 1961 permission for continued burning was denied by local air quality authorities. Therefore, the sumps were used for waste destruction for a limited time but were used primarily as holding tanks for the IWTP and as an oil/water separator until 1985. The area immediately south of the sumps was also used for storage of solvent and plating wastes contained in 55-gallon drums.

Site 17 was subject to a series of site investigations initiated in 1984. IRP investigators sampled the site for metals, semivolatile organic compounds (SVOCs), PCBs, and VOCs. VOCs, particularly TCE, were the only contaminants reported. Site investigations have identified a zone of fine-grained soils, 25 to 55 feet bgs, that underlie and overlie two zones of coarser-grained soils (CDM, 1996g). An EE/CA (CDM, 1997b) prepared for Site 17 presented a detailed analysis of

the subsurface conditions at the site. In summary, there are two water-bearing zones below the Site 17 area. The first zone is a perched groundwater layer that is supported by a layer of finer-grained silts and clays extending from approximately 25 to 55 feet bgs. Collectively, the zone of finer-grained soils starting at 25 feet bgs and the perched groundwater supported by the finer-grained soils is termed the "perched zone." Below the zone of finer-grained soil material is the second zone, termed the "upper aquifer." The upper aquifer comprises sands and gravels that extend to at least 500 feet below the site. During the early 1980s, the top of the upper aquifer was in contact with the zone of finer-grained soil material at 50 feet bgs. Between 1984 and 1988, the elevation of the upper aquifer dropped 7 to 10 feet, below the soil layer of the perched zone. Between 1988 and 1993, the water elevation decreased another 15 to 25 feet, resulting in several dry monitoring wells. The depth to groundwater in the upper aquifer now ranges from approximately 75 to 90 feet bgs (depending on seasonal fluctuations) in the area of IRP Site 17.

TCE has been detected in the perched-zone groundwater in excess of the MCL, but not in the upper aquifer below Site 17. The perched zone currently is dry and is being sampled for soil vapor (Earth Tech, 2001c).

Soil samples have been collected from the surface to approximately 40 feet bgs at the site to determine the TCE source. TCE was detected in the perched zone between 25 and 30 feet bgs (CDM, 1996g). Based on the results of the soil borings, the area of affected soil covers approximately 1,000 square feet.

The perched-zone groundwater contamination is assumed to have resulted from the former chemical waste storage at Site 17. The source may have been from the drums of waste solvents once stored at Site 17 or leakage from the Site 17 sumps. Due to the sandy nature of the surface soils, the solvent migrated downward to the perched zone, where further downward migration was retarded by the finer-grained soils.

The Site 17 EE/CA (CDM, 1997b) evaluated potential migration of TCE from the perched zone into the upper aquifer. The modeling assumed future reuse as a golf course fairway and included infiltration due to irrigation. The modeling indicated that TCE and 1,2-dicloroethene (DCE) will eventually leach into the upper aquifer, but at concentrations well below their respective MCLs.

The Site 17 AM (USAF, 1997e) identified continued groundwater monitoring of the site, along with installation of two additional monitoring wells in the upper aquifer. The wells were installed in 1998 (CDM, 1998b, 1999), and TCE has not been detected in the upper aquifer above 1 microgram per liter (µg/L).

The two sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.7.2 Current and Potential Future Site Use

The site is currently not being used. The property is zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be as industrial/commercial-related options for the property.

2.5.7.3 Summary of Site Risk

The BWFS concluded that IRP Site 17 does not pose adverse risk to human health or the environment because there is no exposure pathway for the low levels of residual VOC contamination located at approximately 30 feet bgs, i.e., there is no direct contact pathway with receptors on the ground surface. Also, modeling and 11 years of monitoring data show no impacts to the upper groundwater aquifer. The BWFS recommended the removal of the concrete sumps based on RCRA closure requirements to remove all waste management facilities.

The two sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.7.4 Remedial Action Objectives

As stated in Section 2.5.8.1, Site History, Site 17 is part of the RCRA interim status facility corrective action termination process. The RAOs for IRP Site 17 are intended to integrate both the CERCLA response and RCRA corrective action obligations, which are two separate processes (Norton FFA, Section 17):

- Removal of the sumps (RCRA obligation).

The two sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.7.5 Analysis of Alternatives

TCE has been detected in perched zone groundwater at Site 17. However, the perched zone is currently dry, and TCE is observed at low concentrations (about 1 µg/L) in soil gas samples collected from the dry monitoring wells. The fine-grained soils that support the perched groundwater are located approximately 30 feet bgs, about 40 feet above the upper aquifer. Due to the depth of the contamination, the site does not pose a direct contact risk under any reuse scenario. The perched-zone groundwater is not a viable drinking water source, is not hydraulically connected with the regional aquifer, and has been dry since 1999. The cause of this contamination could be TCE-contaminated soil in the area, or residual contamination from the former chemical-waste storage sump in the area. No previous removal actions have been taken.

Alternative 1 (NFA) is protective of human health and the environment. Numeric modeling of the site contaminants predicted no discernible impact to the upper aquifer (CDM, 1996g), a result that is supported by 11 years of upper aquifer groundwater data. NFA does not address the RCRA requirement to remove the sumps.

Alternative 2 (ICs) would add no additional protection, because there is no exposure pathway from the low levels of residual VOC contamination.

Alternative 3 (Containment) is not applicable to this site. Soil contamination is 30 feet bgs, and does not appear to be threatening upper aquifer groundwater quality.

Alternative 4 (Removal), using either SVE or perched-zone dewatering (assuming that the perched zone is recharged by rainfall or changes in golf course irrigation practices) could reduce the mass of contaminants existing at the site. However, since there are no completed exposure pathways, removal would not result in any additional protection to human health or the environment.

The concrete structure that forms the Site 17 sumps is not considered the source of the contamination. The sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.7.6 Description of the Selected Remedy

As part of the corrective action termination of the RCRA interim status IWTP facility, the concrete structure that formed the Site 17 sumps was removed and disposed off site in a permitted facility in 2003, and the CERCLA closure report is in preparation.

2.5.7.7 Summary of Rationale for the Selected Remedy

Contamination at Site 17 is located within a clay layer found at approximately 30 feet bgs. Perched-zone groundwater (when present) is not a drinking water source. Perched-zone groundwater contaminant concentrations do not threaten the quality of the underlying aquifer above drinking water standards. The long-term reuse of the site is projected to be industrial/commercial-related, which is consistent with city of San Bernardino zoning. Because the perched zone is currently dry and the contaminant threat low, there are no viable human health and environmental concerns for Site 17.

The selected remedy for Site 17 is to remove the concrete structure that formed the Site 17 sumps. The remedy is based on RCRA requirements to remove all waste management facilities for corrective action termination. The remedy is not based on human health or environmental protection considerations. The concrete will be disposed off site in a permitted facility, thus providing long-term effectiveness. Short-term protectiveness will be achieved through proper handling (e.g., dust control) of the concrete and worker personal safety precautions during excavation and transport of the soil. There will be a short-term, managed risk to the community due to the increased truck traffic. ARARs for dust control, worker protection, and concrete disposal will be addressed through proper soil handling procedures. The concrete is not a designated waste, and land disposal requirements will not be triggered. The remedy is readily implementable using standard construction equipment. The selected remedy does not involve treatment, and contaminant concentrations do not require treatment under state and federal waste management regulations. Following removal of the concrete, NFA will be required for Site 17 to

protect human health and the environment due to the small size of the site (1.0 acre) and the depth of residual soil contamination (30 feet bgs). No threat exists to the upper aquifer groundwater quality, and there is no opportunity for exposure to the site contaminants. No ARARs are related to the NFA decision, and reduction of TMV through treatment is not applicable to this site. The remedy is readily implementable and cost effective.

The sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.7.8 Expected Outcome of the Selected Remedy

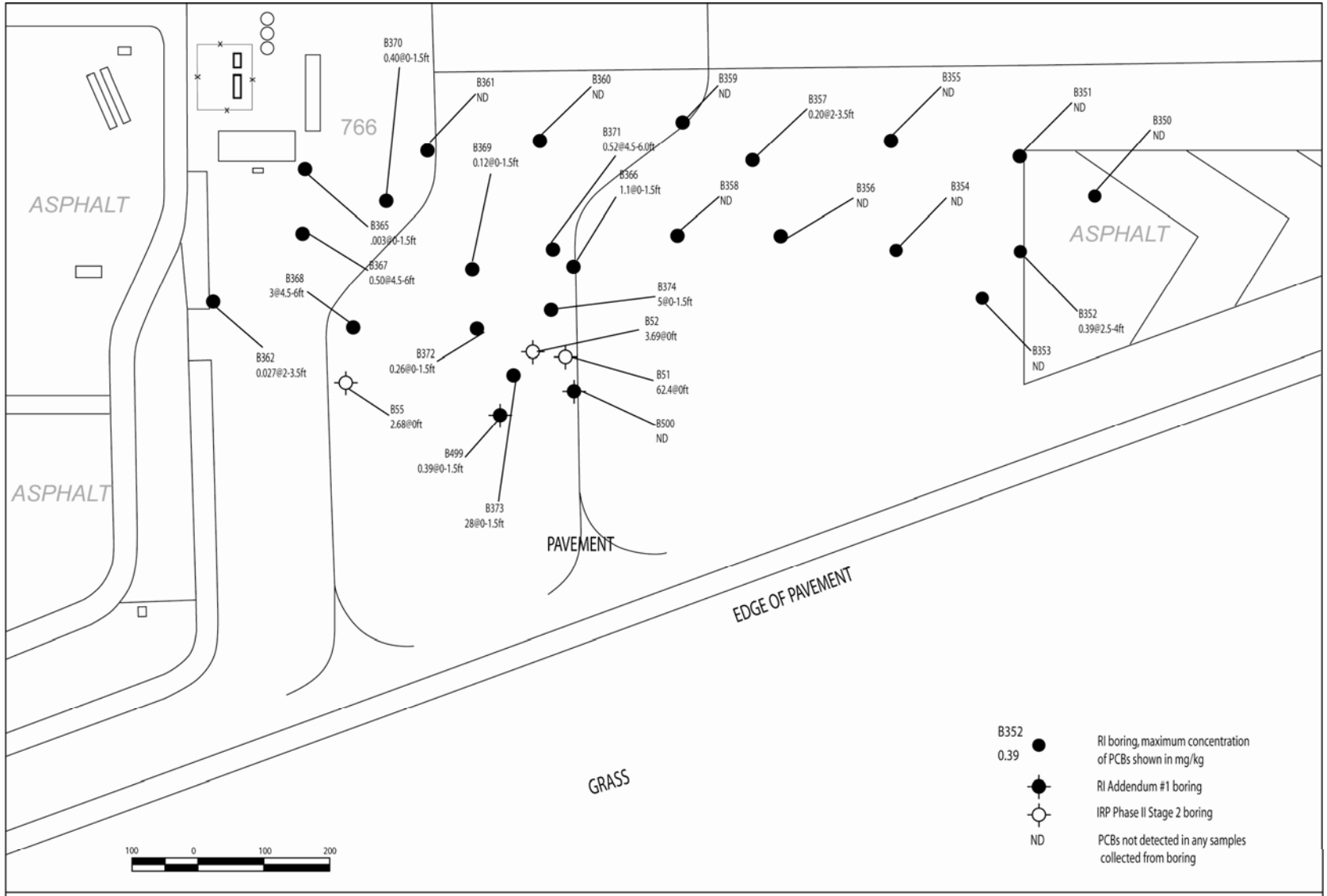
Implementation of the selected remedy at IRP Site 17 will allow corrective action termination for the IWTP RCRA facility and unrestricted reuse of the site. The sumps, which were part of the IWTP, were removed in 2003, and the CERCLA closure report is in preparation.

2.5.8 IRP Site 19 – Drum Storage Area No. 1

2.5.8.1 Site History

Site 19, located in the CBA to the south of Building 763 (see Figure 1-2), was formerly used as a drum storage area and aircraft washing facility. Drums of fuels, oils, electroplating solutions, TCE and trichloroethane (TCA) sludge, and cyanide waste solutions were stored on an unpaved fenced lot. The area south of Building 763 was the general location of the original aircraft washing facility. This facility was removed in 1966, and the area was resurfaced with 20 inches of concrete to become part of the flight line. Site 19 was investigated during the 1984 to 1986 IRP and the 1991 to 1993 RIs. PCBs were detected in excess of residential PRGs, primarily in the upper 6 inches of soil beneath the concrete runway apron. Figure 2-8 illustrates the extent of the approximately 60,000 square feet of PCB-affected soil at IRP Site 19.

An interim ROD (USAF, 1997c) was developed for IRP Site 19 to identify a use restriction documenting the presence of the contamination. This ROD and its decision for IRP Site 19 will supersede the interim ROD. No groundwater contamination is associated with this site.



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EXTENT OF PCB CONTAMINATION
IRP SITE 19
FORMER NORTON AIR FORCE BASE

Figure 2-8

2.5.8.2 Current and Potential Future Site Use

The long-term future land use for Site 19 is to retain the runway apron for use by the SBIAA airfield.

2.5.8.3 Summary of Site Risk

The BWFS concluded that there is currently no exposure pathway to residual PCB contamination because of the runway apron concrete cover. The BWFS risk assessment calculated theoretical risks based upon removal of the runway apron. The BWFS concluded that, although the cancer risk and adult non-cancer HI were acceptable, the child non-cancer risk was unacceptable for unrestricted reuse. In addition, the unrestricted cancer risk approaches the high end of the acceptable risk management range of 1×10^{-4} to 1×10^{-6}. Table 2-15 summarizes the BWFS risk analysis results.

Table 2-15

Summary of Site 19 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 6.5	1.8	6.8×10^{-6}	0.48	3.5	PCBs	Acceptable risk under industrial reuse scenario
Unrestricted	0 to 6.5	1.8	5.8×10^{-5}	14	5.2	PCBs, Arsenic, Cadmium	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.67); child non-cancer HI risk >1; blood-lead level less than 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
PCB = polychlorinated biphenyl
µg/dL = micrograms per deciliter

2.5.8.4 Remedial Action Objectives

RAOs for IRP Site 19 are:

- Limit use of property to prevent exposure to PCB-contaminated soil under an unrestricted land use scenario.

2.5.8.5 Analysis of Alternatives

At present, Site 19 is part of the airfield portion of the base that has been conveyed for use for airport purposes under an FAA covenant that allows only industrial, commercial, and airport support activities. This site, located beneath a runway apron and 20 to 24 inches of concrete, has shallow soil contaminated with PCBs and fuels. The Air Force issued an interim ROD that identified leaving the concrete in place to prevent exposure to the contaminants as the preferred alternative (USAF, 1997c). There is currently no direct contact risk at this site. Assuming the concrete cover were to be removed and exposure to contaminated soil allowed, the cancer risk to site workers would be 6.8×10^{-6}, within the lower end of the risk management range. The industrial HI is 0.48, and the adult blood-lead level is predicted to be 3.5 µg/dL, both acceptable values. Under the unrestricted land use scenario, the cement cover would be removed, allowing for exposure. The predicted cancer risk under the unrestricted land-use scenario is 5.8×10^{-5}, the higher end of the risk management range of 1×10^{-4} to 1×10^{-6}. The unrestricted child non-cancer HI is 14, and the child blood-lead level is 5.2 µg/dL. PCBs are the COC contributing mostly to the unacceptable HI of 14.

Under Alternative 1 (NFA), only construction workers would be exposed as long as the FAA airport restrictions remain in place. Only through changes in the airport status could an exposure to soil contaminants at unacceptable concentrations occur under an unrestricted land-use scenario. Site preparation and other redevelopment activities could lead to disruption or removal of the concrete cover. No long-term effectiveness or permanence would be provided if the airport covenants were rescinded.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." ICs would prohibit unrestricted reuse of the site, notify others about the presence of the soils contamination, and allow for access

for inspection of ongoing land-use activities. The ICs would address the entire 1.8-acre site. Any changes in land use that would involve removal of the concrete cover would require that an appropriate RA be taken to address the shallow soil contamination. There are no short-term concerns with this alternative.

Alternative 3 (Containment), using the existing concrete, would protect human health and the environment by ensuring the existence of a barrier to human or animal contact with the contaminated soil. There are no ARARs specific to containment using the existing concrete cover.

Alternative 4 (Removal) would provide long-term effectiveness and permanence by removing contamination from the site, but not without significant costs. Removal would not be warranted unless the concrete cover no longer served its intended purpose for aircraft parking. Short-term impacts due to soil excavation would need to be managed to protect workers and the public. Long-term effectiveness of this remedy would be transferred to the facility receiving the waste, but removal of the contaminated soil could be accomplished to allow unrestricted land use. A soil removal action could be implemented to address ARARs for soil excavation, transport, and disposal, and would take less than 1 month to complete. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

2.5.8.6 Description of the Selected Remedy

The selected remedy for IRP Site 19 is ICs as detailed in Section 2.3.4.2. The land is protected by an FAA covenant that allows only industrial, commercial, and airport support activities. The ICs will be implemented to fulfill the following use limitations:

- Grantee covenants and agrees that it will not use IRP Site 19 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children.
- Grantee covenants and agrees that it will not conduct or allow others to conduct activities that limit access to the site for inspections.

2.5.8.7 Summary of Rationale for the Selected Remedy

Site 19 is currently buried beneath 20 to 24 inches of concrete that serves as a ramp area for aircraft parking. The most likely future use of the site is parking for aircraft being repaired in the adjacent Building 763 hangar. There is no risk to human health as long as the concrete remains in place. The concern for the site is the uncontrolled removal of the concrete cover and then unrestricted reuse of the property. If the concrete cover were removed, the combined excess residential cancer risk is estimated to be 5.8×10^{-5}, which is approaching the upper limit of the risk management range of 1×10^{-4} to 1×10^{-6}. The non-cancer HI under an unrestricted land-use scenario is 14 for a child exposure.

The selected remedy is ICs that will notify others about the contaminated soil beneath the concrete cover and prohibit the unrestricted reuse of the property. The selected remedy is protective of human health and the environment by establishing an IC controlling use of, and exposure to, the soil at the site. The ICs will ensure long-term protectiveness through preventing unrestricted exposure to the contaminated soils. Short-term exposure is within the acceptable risk range. The remedy is readily implementable and cost effective using the property transfer process that is currently being employed at the former base. The selected remedy does not involve treatment, because contaminant concentrations do not require treatment under state and federal waste management regulations.

2.5.8.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at IRP Site 19 will allow for most likely current and future reuse plans for the site. Unrestricted land use will be prohibited in accordance with the ICs, deed restrictions, and State LUC.

2.5.9 AOC 4 – Building 301

2.5.9.1 Site History

Building 301, located in the NBA near U and 102nd streets, was an equipment and vehicle washing facility (see Figure 1-2). During the 1950s, the building was part of a spray painting facility. At the time of base closure (1994), it was used by civilian auto hobby personnel.

AOC 4 consists of the foundation of former Building 301, an adjacent washing slab, and adjacent soil areas.

A separator/dosing chamber was removed and its location evaluated as part of the basewide underground storage tank (UST) program (Bechtel Environmental, 1997). A solids collection pit and two trench drains were identified during the site investigation. The concrete washing slab was heavily stained, particularly near the trench drains. Drums of oil and other materials were stored in sheds along the southern drain line. A 4-foot- by 4-foot-wide area surrounded by a 6-foot-tall chain-link fence is located to the north of the washing slab and may represent the location of a former waste receptacle. The area is capped with a wooden cover, and the material under the cover may be fill.

Sampling results during the CS and ESI indicated the presence of VOCs, PAHs, fuels, and metals in soils at AOC 4. However, only antimony (34.6 mg/kg), arsenic (30.1 mg/kg), cadmium (80.7 mg/kg), and lead (8,460 mg/kg) exceeded residential PRGs. The contaminants are limited to near-surface depths (less than 1 foot bgs) and are not widespread horizontally (Figure 2-9).

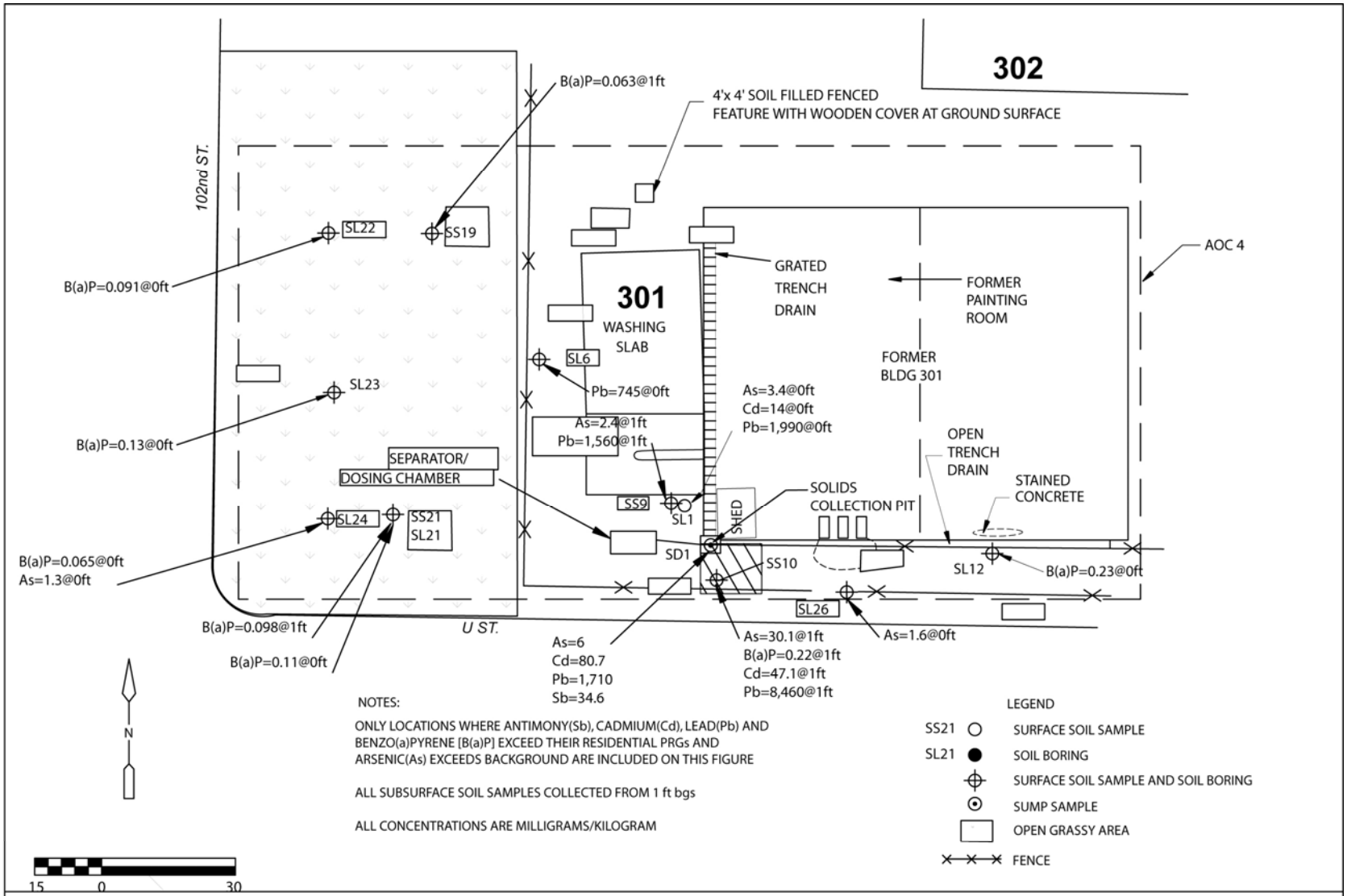
The area of affected soil is approximately 40 feet by 120 feet. No groundwater contamination is associated with this AOC.

AOC 4 is on a parcel that was transferred by SBIAA to the San Bernardino County Fire Department under an FAA covenant that allows only industrial, commercial, or aircraft support usage. The Fire Department has refurbished Building 302 for office use and vehicle repair and is using the area west of the building (north of AOC 4) as a household hazardous waste collection point.

Remedial alternatives were evaluated in an EE/CA (CDM, 1997a). The Air Force identified ICs as the preferred alternative in the AM (USAF, 1997a).

2.5.9.2 Current and Potential Future Site Use

Paved areas south of Building 302 are being used for vehicle and equipment storage. The western half of AOC 4 is covered by grassy weeds, while the eastern half is paved and includes a covered storage area. The Fire Department plans to use the paved area for equipment storage,



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AOC 4
LOCATIONS WHERE CONTAMINANTS EXCEED RESIDENTIAL PRGs AND BACKGROUND IN SOIL
FORMER NORTON AIR FORCE BASE

Figure 2-9

while there are no plans for use of the grassy area of AOC 4 outside of the fenced storage yard. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property.

2.5.9.3 Summary of Site Risk

The BWFS concluded that AOC 4 does not pose an unacceptable risk to human health using the industrial reuse scenario. Also, the unrestricted cancer risk and adult non-cancer HI were acceptable; however, the child non-cancer risk and child blood-lead levels were unacceptable for unrestricted land use. Table 2-16 summarizes the BWFS risk assessment for AOC 4.

Table 2-16

Summary of AOC 4 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 1	0.1	2.3×10^{-6}	0.03	12.8	lead, arsenic, PAHs	Acceptable risk under industrial reuse scenario.
Unrestricted	0 to 1	0.1	2.6×10^{-5}	1.4	40.8	lead, arsenic, PAHs cadmium	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.075); child non-cancer HI risk >1; child blood-lead level exceeds 10 µg/dL target.

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

2.5.9.4 Remedial Action Objectives

There are no RAOs for AOC 4 since there is no unacceptable risk to human health. The property has been transferred under an FAA covenant that allows only industrial, commercial, or aircraft support usage.

2.5.9.5 Analysis of Alternatives

Surface and shallow subsurface soils at this site are contaminated with PAHs and metals; there is currently no cover. The estimated cancer risk using the industrial use scenario and assuming daily exposure, is 2.3×10^{-6}, near the lower concentrations of the risk management range of 1×10^{-4} to 1×10^{-6}. The adult non-cancer HI is 0.03. The predicted unrestricted adult blood-lead level is 12.8 µg/dL, exceeding the 10 µg/dL. This is presented for comparison purposes for the industrial scenario. The predicted adult blood-lead levels in an industrial scenario would be lower.

AOC 4 is within a land parcel that has been transferred under an FAA covenant that allows only industrial, commercial, and aircraft support activities. All types of unrestricted reuse activities are precluded by the covenant.

Alternative 1 (NFA) is protective due to the already in place land-use restrictions. Based on the current deed restrictions, the property will revert back to the Federal government should the airport no longer be deemed as a viable use for the former base.

Alternative 2 (ICs) would not add any meaningful protection to human health and the environment. The property has been deeded to SBIAA with FAA covenants that prohibit unrestricted land use, and return of the property to federal ownership would be required if no longer used as an airport.

Alternative 3 (Containment) is not applicable to this site other than covering the site with asphalt or concrete.

Alternative 4 (Removal) could provide additional long-term effectiveness and permanence by removing the contamination from the site but with additional costs. In addition, removal is not justified given the current and future reuse of the property. The removal alternative could be implemented to meet soil excavation, transport, and disposal ARARs. The potential for short-term exposure of workers and the community would need to be controlled for any removal action. Due to the small size of the site, removal would require less than a week to accomplish.

Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

2.5.9.6 Description of the Selected Remedy

The selected remedy for AOC 4 is NFA. Residual contamination at AOC 4 exceeds unrestricted use levels. Restrictions are included in the FAA transfer document, and in city zoning provisions. In addition, SLUC regulation 22 CCR 67391.1(b), which has been identified as an ARAR, specifies the execution of a SLUC which provides DTSC with an enforcement mechanism to assure compliance with the restriction on residential and sensitive uses. The FOST for this property was signed on September 11, 1997, and the property was transferred to SBIAA by the Air Force on April 1, 2001. The 5-year review will also ensure that the land use controls remain effective. The State of California may pursue the SLUC to:

- Prohibit use of AOC 4 for residential purposes, hospitals for human care, public or private schools for persons under 18 years of age, or day-care centers for children and prohibit activities that limit access to the site for inspections.

2.5.9.7 Summary of Rationale for the Selected Remedy

Portions of AOC 4 are currently being used to store equipment; therefore, site contaminants pose minimal threat due to limited activity. The projected long-term use is for equipment storage. The concern for the site is reuse of the soil or a land-use change to unrestricted, allowing for frequent soil exposure, a scenario currently prohibited by the FAA airport use covenant.

Existing land-use restrictions and the SLUC for the parcel in which AOC 4 is located will be effective in protection of human health and the environment in that they will prevent reuse of the property in an unrestricted land use scenario. The selected remedy does not involve treatment, because contaminant concentrations do not require treatment under state and federal waste management regulations. The remedy is cost-effective because the controls are already in place.

2.5.9.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for reuse of AOC 4 in accordance with the previously established deed restriction.

2.5.10 AOC 18 – Buildings 451 and 452

2.5.10.1 Site History

Former Buildings 451 and 452 were located in the CBA, east of Tippecanoe Avenue and north of Harry Sheppard Boulevard (see Figure 1-2). Building 451 was a former garage and gas station in operation from 1942 to the late 1960s or early 1970s; Building 452 was the site of USTs. A 1942 site drawing indicates five 12,000-gallon gasoline USTs, a fueling station, and an oil storage house (Buildings 452, 451, and 450, respectively), although a 1967 site drawing indicates only two 12,000-gallon USTs were present. All structures and USTs have been removed.

AOC 18 was investigated during the CS and ESI. Sampling results indicated the presence of xylene and naphthalene at concentrations exceeding residential PRGs at a depth of 10 feet bgs. The soil contamination covers an area of approximately 600 feet.

Prior to the initial redevelopment activities, AOC 18 was covered by an asphalt-paved parking lot that served the adjacent base post office. From January 2000 to 2004, the surface of the AOC was bare earth facilitating aeration (volatilization) of the fuel-related chemicals. The site is now paved with asphalt as part of the Mattel warehouse and distribution center.

Remedial alternatives were previously evaluated in an EE/CA (CDM, 1997a). The Air Force identified ICs in the AM (USAF, 1997a) as the preferred RA.

2.5.10.2 Current and Potential Future Site Use

AOC 18 is on property that was transferred to IVDA. IVDA has demolished all structures in the vicinity of AOC 18 and removed all pavement in preparation for redevelopment. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property.

2.5.10.3 Summary of Site Risk

The BWFS concluded that AOC 18 does not pose unacceptable risk to human health. Table 2-17 summarizes the BWFS risk assessment for AOC 18.

Table 2-17

Summary of AOC 18 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	5 to 10	0.1	1.1×10^{-6}	0.26	--3	benzene, naphthalene	Acceptable risk under industrial reuse scenario.
Unrestricted	5 to 10	0.1	3.2×10^{-6}	1.2	--3	benzene, naphthalene	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.035); child non-cancer HI risk >1

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

[3] Lead is not a COC at AOC 18

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

2.5.10.4 Remedial Action Objectives

There are no RAOs for AOC 18 since there is no unacceptable risk to human health.

2.5.10.5 Analysis of Alternatives

Soil at AOC 18 is contaminated with fuel chemicals found at 10 feet bgs in an area that has been recently paved with asphalt. Projected long-term use is for industrial/commercial development, which is consistent with city of San Bernardino zoning. The current excess cancer risk of 1.1×10^{-6} at this site, using the industrial use scenario and assuming daily exposure, slightly exceeds the target of 1×10^{-6}. The adult non-cancer HI is 0.26, and lead is not a COC.

Assuming indoor inhalation of the volatiles within a new commercial structure and no reduction in contaminant concentration over time, the indoor air inhalation risk to an office worker is predicted to be 3.8×10^{-8}. The unrestricted cancer risk is 3.2×10^{-6} in the lower end of the risk management range of 1×10^{-4} to 1×10^{-6}. The child non-cancer HI is 1.2, again assuming no loss of volatiles when the contaminants are brought to the surface. The risks are likely overstated because the fuel contaminants are volatile and their concentrations in the soil would be reduced (i.e., lost to the atmosphere) if they were to be brought to the surface during site grading/preparation for residential (unrestricted) development. The calculated unrestricted cancer risk of 3.2×10^{-6}, however, is within the risk management range that allows for NFA decisions based on site and risk management considerations.

Alternative 1 (NFA) is protective because the calculated unrestricted risk at AOC 18 approaches the 10^{-6} where remedial actions are not warranted. In addition, the COCs are readily volatile and degradable, and concentrations and corresponding theoretical risks will decrease with time. Long-term effectiveness or permanence would eventually be achieved by natural degradation through aerobic and/or anerobic processes. The contaminant types present can be degraded by soil micro-organisms currently inhabiting the site soil. Monitoring would be possible through installation of soil vapor monitoring wells, but probably is not warranted under current and expected future land-use activities.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing limitations on land use that "run with the land." The ICs would prohibit the unrestricted reuse of the site, notify others about the presence of the soils contamination, and allow access to inspect ongoing land-use activities. The ICs would address the entire 0.1-acre site. There are no short-term concerns with this alternative.

Alternative 3 (Containment), through placement of an asphalt or concrete cover for a road or parking lot, would protect human health and the environment by ensuring the existence of a barrier to human or animal contact with the contaminated soil. Long-term effectiveness could be ensured by use of ICs requiring maintenance of the containment system. There are no ARARs specific to this type of containment action.

Alternative 4 (Removal) would provide long-term effectiveness and permanence through removal of contamination from the site but at significant costs since contaminant concentrations currently are within the acceptable risk range. Short-term impacts due to soil excavation would need to be managed. ARARs for soil excavation, transportation, and disposal could be met. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

2.5.10.6 Description of the Selected Remedy

The selected remedy for AOC 18 is NFA.

2.5.10.7 Summary of Rationale for the Selected Remedy

The fuel-contaminated soils at AOC 18 are buried beneath 10 to 15 feet of soil in an area being redeveloped for industrial/commercial-related purposes, consistent with city of San Bernardino zoning. The residual soil contamination does not pose a significant risk under an unrestricted land-use scenario (combined child/adult cancer risk is 3.2×10^{-6}, approaching the calculated risk where RAs are not warranted); the child non-cancer HI is 1.2.

A selected remedy of NFA is based on: (1) scientific studies that show the petroleum chemicals to be readily degradable in soils, (2) Norton AFB soil data from groundwater and soil actions that show diminishing concentrations of petroleum chemicals and no specific threat to upper aquifer groundwater quality, (3) the depth at which the contaminants are buried, (4) the highly improbable chance for future exposure, and (5) the most likely continued land use under the industrial/commercial reuse scenario. This decision is protective of human health and the environment. Contaminant levels calculated using data from 7 years ago indicate an acceptable direct contact and indoor air inhalation risk. The contaminants are readily degradable, and concentrations have likely diminished. Based on land-use plans, the likelihood of any future exposure is extremely small. The decision does not trigger any ARARs. The decision is protective in the short term, because no activity will be taken to access the residual contamination, thus allowing for exposure during handling and transport. The decision is protective in the long term due to the chemical fate and transport characteristics of the COCs (i.e., diminishing concentrations with time). The chemical degradation process also addresses

the reduction in TMV consideration. The decision is readily implementable and will be cost effective.

2.5.10.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for unrestricted reuse of AOC 18.

2.5.11 AOC 33 – Building 747

2.5.11.1 Site History

Building 747, located in the southeastern corner of the CBA (Figure 1-2), was one of the primary industrial facilities at Norton AFB. Although AOC 33 is part of this CERCLA ROD, as part of the former Industrial Waste Line (IWL), it is also part of the RCRA corrective action termination of the interim status facility (two separate closure processes). The building was constructed in 1942 and renovated in 1944, 1953, and 1955. From 1942 to 1966, the building supported operations for the repair and overhaul of engines and other aircraft parts. Building 747 was converted into a freight terminal facility in 1966, and the building served as offices and storage facilities.

Subsurface soil contamination at AOC 33 is associated with sumps (some recently removed) buried beneath an asphalt access road immediately south of Building 747. The sump portion of AOC 33 is part of the IWL that is undergoing RCRA corrective action termination as an interim status facility. AOC 33 was investigated during the CBA OU RI, CS, and the ESI (CDM, 1992, 1995, 1996c). Sampling results indicated the presence of DCB in excess of industrial and residential PRGs, primarily within the upper 10 feet bgs of soil. No groundwater contamination is associated with AOC 33. Remedial alternatives were evaluated in an EE/CA (CDM, 1997a). The Air Force identified a deed restriction in the AM (USAF, 1997a) as the preferred RA.

The sump and surrounding soil were removed in 2003. Confirmation sampling revealed contaminants of potential concern. In April 2004, to further characterize the site, eight borings were drilled within the excavation, and soil samples were taken to 30 feet bgs; no elevated levels of contaminants of potential concern were detected. Additional sampling (soil gas) was conducted in October 2004.

The CERCLA closure report is in preparation.

2.5.11.2 Current and Potential Future Site Use

AOC 33 is on property that has been leased by the Air Force to SBIAA. Building 747 has been subleased by SBIAA to several entities for commercial use. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be industrial/commercial-related options for the property, including aviation support.

2.5.11.3 Summary of Site Risk

Using the subsurface soil and soil gas data, the cancer risk is 2.7×10^{-4} and the non-cancer HI is 0.078, indicating a cancer risk in excess of 1×10^{-6} and an acceptable non-cancer risk due to the contaminants buried underneath pavement for the commercial/industrial scenario. DCB in shallow soils (soil gas) at AOC 33 poses an unacceptable industrial indoor air risk, and an unacceptable unrestricted child non-cancer risk. Table 2-18 summarizes the BWFS risk assessment for AOC 33.

The sump and contaminated soils were removed in 2003, and the CERCLA closure report is in preparation.

2.5.11.4 Remedial Action Objectives

As stated in Section 2.5.12.1, Site History, AOC 33 sumps are part of the IWL that is part of the corrective action termination of the RCRA interim status facility. The RAOs for AOC 33 are intended to integrate both the CERCLA response and RCRA corrective action obligations, which are two separate processes (Norton Federal Facility Agreement, Section 17):

- Remove the IWL sump (RCRA obligation).
- Remove contaminated soils that pose an unacceptable indoor air inhalation risk (CERCLA/RCRA obligations).
- Reduce the non-cancer risk to an individual to an HI less than 1 ("the NCP non-cancer risk remedial goal").

Table 2-18

Summary of AOC 33 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	1 to 8	0.1	1.1×10^{-6}	0.078	--[3]	dichlorobenzene	Acceptable risk under industrial reuse scenario.
Industrial (air inhalation pathway)	1 to 8	0.1	2.7×10^{-4}		--[3]	Dichlorobenzene	Unacceptable industrial risk under air inhalation pathway.
Unrestricted	1 to 8	0.1	3.6×10^{-6}	3.5	--[3]	dichlorobenzene	Cancer risk is within risk management range; adult non-cancer HI risk is acceptable (0.18); child non-cancer HI risk >1

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

[3] --Lead is not a COC at AOC 33.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

The sump and contaminated soils were removed in 2003, and the CERCLA closure report is in preparation.

2.5.11.5 Analysis of Alternatives

Solvent contamination associated with a buried sump is present at a depth of 10 feet bgs covered by an asphalt roadway. The industrial and unrestricted land use cancer risks and non-cancer HIs are within the risk management range. The site is included with property that has been transferred under the FAA airport covenant and cannot be used for residential (unrestricted) purposes unless that covenant is changed. Assuming indoor inhalation of the volatiles within a new commercial structure, the modeled indoor air inhalation risk to an office worker is predicted to be 2.7×10^{-4}. This indoor air risk generally warrants an RA. However, the contaminants are semivolatile, and their concentrations would be reduced (i.e., lost to the atmosphere) if the contaminated soils were brought to the surface during site grading/preparation for residential (unrestricted) development. The contaminant concentrations are also expected to slowly diminish in-situ over time due to their volatility and other natural degradation processes.

Alternative 1 (NFA) potentially would not be protective for the short term because it does not address the residual contamination at the site. Long-term effectiveness or permanence would eventually be achieved through degradation of the solvent contaminants. Monitoring of the contaminant degradation rate is possible through placement of probes through the asphalt pavement.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing limitations on land use that "run with the land." The ICs would prohibit unrestricted land use of the site, notify others about the presence of soils contamination, provide for engineered soil vapor control within the foundation of a new building, require maintenance of existing cover (asphalt roadway), and allow access to inspect ongoing land-use activities. The ICs would address the entire 0.1-acre site. There are no short-term concerns with this alternative, as long as the existing asphalt cover remains in place.

Alternative 3 (Containment), consisting of the existing asphalt cover, would protect human health and the environment by providing a barrier to exposure. Long-term effectiveness could be ensured by ICs requiring maintenance of the asphalt. There are no ARARs specific to the containment alternative.

Alternative 4 (Removal) would provide long-term effectiveness and permanence but at a cost greater than ICs. The removal would reduce the inhalation risk predicted by the indoor air model to an acceptable level. Short-term impacts due to soil excavation would require management. The removal alternative could be implemented to address excavation, transport, and disposal ARARs, and could be completed in less than 1 week. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

The sump and contaminated soils were removed in 2003, and the CERCLA closure report is in preparation.

2.5.11.6 Description of the Selected Remedy

The selected remedy for AOC 33 is excavation and removal of the sump and associated soils contaminated with DCB that pose an unacceptable indoor air risk. The sump and contaminated soils were removed in 2003. The CERCLA closure report, which is in preparation, will include characterization of any remaining contaminant levels and risk assessment to demonstrate that AOC 33 has been remediated to the acceptable risk range.

2.5.11.7 Summary of Rationale for the Selected Remedy

Subsurface soil contamination at AOC 33 is associated with sumps (some recently removed) buried beneath an asphalt access road. The current and future use for the site is an access road to Buildings 747 and 749. Both buildings are currently used for warehousing and other industrial purposes and, in the future, may be used for airfield support, which is consistent with city of San Bernardino zoning. The combined child/adult excess cancer risk for exposure to the soil, assuming the asphalt were removed and the soil brought to the surface, is approaching the lower end of the risk management range (3.6×10^{-6}). The child non-cancer HI is 3.5. Indoor air risk modeling predicts an unacceptable risk potential. The most significant risk would occur if a small structure was to be constructed over the site. The contaminants are volatile and degradable, and the concentrations in soil are expected to decrease with time.

Because a majority of the contamination is associated with a buried sump, the selected remedy is a hot-spot removal involving the sump and adjacent soils. Upon removal of the sump and soil, confirmation sampling will be performed to demonstrate that the removal was protective of current and most likely future users. Because the AOC is part of the property transferred under an FAA airport agreement, the only future reuse for the property is that of airport support activities that exclude unrestricted land use.

The selected remedy will target residential (unrestricted) COC concentrations, thereby allowing for unrestricted land use. This remedy is protective of human health and the environment through removal of the location with the highest soil and soil gas concentrations. The remedy will address ARARs involving soil and waste excavation, transport, and disposal, as well as for worker and community protection. The remedy is protective in the short term through

implementation of measures to prevent release of contaminants during waste handling and transport. The remedy is protective in the long term due to the reduction in wastes at the site and the chemical fate and transport characteristics of the COCs that would result in diminishing residual concentrations over time. Soil contaminant concentrations are not sufficient to warrant treatment prior to disposal. Chemical degradation processes will address the reduction in TMV consideration of any waste remaining at the AOC location. The remedy is readily implementable and cost effective.

The sump and contaminated soils were removed in 2003, and the CERCLA closure report is in preparation.

2.5.11.8 Expected Outcome of the Selected Remedy

Implementation of the selected remedy at AOC 33 will allow for unrestricted reuse of the site. The sump and contaminated soils were removed in 2003, and the CERCLA closure report is in preparation.

2.5.12 AOC 39 – Golf Course Storm Drain Outfall Area

2.5.12.1 Site History

AOC 39 is located west of Club House Drive and south of the southern perimeter road (see Figure 1-2), where an underground storm drainpipe empties into a grass-covered fairway drainage ditch. The discharge serves storm drain lines that originate along the southern flight line area. An oil/water separator removes oil prior to discharge into the ditch. The discharge point possibly received waste from the flight line and Buildings 695, 763, and 795. Aerial photographs from the 1950s and later indicate that fluids from aircraft repair and fueling emptied into the storm drain system. A 1982 interview record indicated that flight line oils were occasionally observed in the golf course drain.

Results of sampling during the CS and ESI indicated the presence of PAHs (primarily benzo(a)pyrene) in near-surface soils (less than 1 foot bgs) in excess of residential PRGs, and arsenic in excess of the background concentration. The area of affected soil is 20 feet by 800 feet. No groundwater contamination is associated with AOC 39.

Remedial alternatives of AOC 39 were previously evaluated in an EE/CA (CDM, 1997a). The Air Force selected deed restrictions in the AM (USAF, 1997a) as the preferred RA. AOC 39 was evaluated further in the BWFS.

2.5.12.2 Current and Potential Future Site Use

AOC 39 is on property leased by the IVDA to the Palm Meadows Golf Course. Projected long-term use of the site is expected to be industrial/commercial-related options for the property, consistent with zoning by the city of San Bernardino. The storm water drainage would likely require alteration depending on the type of reuse.

2.5.12.3 Summary of Site Risk

The BWFS concluded that AOC 39 does not pose an unacceptable risk to human health. Table 2-19 summarizes the BWFS risk assessment for AOC 39.

Table 2-19

Summary of AOC 39 Risks – Industrial and Unrestricted Land Use Scenarios

Land Use Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 5	0.4	1.9×10^{-6}	0.0065	4.1	PAH, arsenic	Acceptable risk under industrial reuse scenario.
Unrestricted	0 to 5	0.4	1.9×10^{-5}	0.29	7.6	PAH, arsenic	Acceptable risk under unrestricted land use scenario

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

2.5.12.4 Remedial Action Objectives

There are no RAOs for AOC 39 since there is no unacceptable risk to human health.

2.5.12.5 Analysis of Alternatives

This site has near-surface soil contaminated with PAHs and metals covered by sod within a golf course fairway. The industrial reuse cancer risk is predicted at 1.9×10^{-6}, near the lower end of the risk management range; the non-cancer HI is 0.0065. Projected long-term plans for the site are for industrial/commercial purposes, consistent with city of San Bernardino zoning. The predicted unrestricted cancer risk is 1.9×10^{-5}, within the middle of the risk management range (between 1×10^{-4} and 1×10^{-6}). The child HI is predicted at 0.29, and the modeled child blood-lead level is predicted to be 7.6 µg/dL. Both the HI and modeled child blood-lead levels are acceptable values. The concentrations of the PAH chemicals may be reduced over time due to natural processes. The arsenic is present in concentrations slightly above background and is not indicative of gross contamination.

Alternative 1 (NFA) is potentially protective under an unrestricted land-use scenario, because the residual cancer risk is within the risk management range, and the area affected and the mass of contaminants is very small.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing limitations on land use that "run with the land." The ICs would prohibit residential (unrestricted) reuse of the site, notify others about the presence of soils contamination, and allow access to inspect ongoing land-use activities. The ICs would address the entire 0.4-acre site. There are no short-term concerns with this alternative.

Alternative 3 (Containment) is not applicable for the site because it would affect the storm runoff drainage.

Alternative 4 (Removal) would provide long-term effectiveness and permanence by removing contamination from the site. Short-term impacts due to soil excavation would need to be managed. ARARs for soil excavation, transportation, and disposal can be met, and removal could be completed in less than 1 week. Restoration of the golf course could be accomplished within a month of excavation. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV. Additional

protection of human health would be marginal, because the current unrestricted risk is within the acceptable risk range.

2.5.12.6 Description of the Selected Remedy

The selected remedy for AOC 39 is NFA.

2.5.12.7 Summary of Rationale for the Selected Remedy

Surface soil contamination is present in a ditch at AOC 39 that is part of the airfield storm water system. The site is linear, not more than 8 feet wide at its greatest extent. Contamination is shallow, and there is not a significant mass of contamination remaining. The outfall is present within the active portion of the Palm Meadows Golf Course. Most likely, future use of the site will be continued use as a storm drain outfall that serves the adjacent airfield. The concern for the site is a change to an unrestricted land use; this change is currently prohibited by current city of San Bernardino land zoning rules. The combined residential child/adult excess cancer risk is 1.9×10^{-5}, near the mid-point of the risk management range (between 1×10^{-4} and 1×10^{-6}), and the child HI is 0.29. The risk is a result of PAHs and metals in the surface soils. Because the site is linear and site characterization sampling focused only on the outfall drainage, the analytical results are biased, leading to an overestimation of the actual risk. Any exposure to the site area would include clean soils adjacent to the drainage, which are not affected by the outflow.

NFA is protective of human health and the environment because current risk is minimal and within the risk management range. The selected remedy does not involve treatment, but contaminant concentrations do not require treatment under state and federal waste management regulations. The remedy for AOC 39 is cost effective.

2.5.12.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for unrestricted reuse of AOC 39.

2.5.13 AOC 70 Former IWTP Effluent Percolation Pond

2.5.13.1 Site History

AOC 70 was a percolation pond used for treated IWTP effluent during the mid-1980s to 1993 (see Figure 1-2). Although AOC 70 is part of this CERCLA ROD, as part of the former IWTP, AOC 70 also must be closed as part of the RCRA corrective action termination of the interim status facility (two separate closure processes). On December 31, 2004, DTSC-RCRA acknowledged that AOC 70 was clean closed (DTSC, 2004). The 0.25-acre pond site was constructed upon sandy soils that readily facilitated infiltration of the treated effluent into the subsurface. There was no outflow from the pond. The pond dried out when the IWTP ceased functioning in mid-1993. AOC 70 was investigated under the CS Addendum No. 2 (CDM, 1996b), and results of sampling indicated the presence of PAHs, pesticides, PCBs, and metals. Petroleum contamination was encountered during installation of a new sewer pipeline along the northern edge of Palm Meadows Drive.

RAs were evaluated in an EE/CA (CDM, 1997a). The Air Force selected a soil removal action in the AM (USAF, 1997a) as the preferred remedy. The Air Force completed the removal action in 1997 and backfilled the site with certified clean fill (Bechtel Environmental, 1997). Benzo(a)pyrene and benzo(k)fluoranthene were detected in two of the confirmation samples at concentrations below their residential PRGs, and PCBs were detected in one confirmation sample slightly above the residential PRG. The affected area is less than 1,000 square feet. No groundwater contamination is associated with the AOC.

2.5.13.2 Current and Potential Future Site Use

AOC 70 is within a parcel of the base that has been leased to IVDA. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the site is expected to be as industrial/commercial-related options for the property consistent with city of San Bernardino zoning.

2.5.13.3 Summary of Site Risk

The BWFS concluded that AOC 70 does not pose an unacceptable risk to human health. Table 2-20 summarizes the BWFS risk assessment for AOC 70.

Table 2-20

Summary of AOC 70 Risks – Industrial and Unrestricted Land Use Scenarios

Reuse Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	5 to 10	0.1	1.1×10^{-7}	0.0024	--[3]	PAHs	Acceptable risk under industrial reuse scenario.
Unrestricted	5 to 10	0.1	1.2×10^{-6}	0.1	--[3]	PAHs	Acceptable risk under unrestricted land use scenario

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

[3] Lead is not chemical of concern at AOC 70.

bgs = below ground surface
HI = Hazard Index
PAH = polynuclear aromatic hydrocarbon
µg/dL = micrograms per deciliter

2.5.13.4 Remedial Action Objectives

There are no RAOs for AOC 70 since there is no unacceptable risk to human health or the environment.

2.5.13.5 Analysis of Alternatives

AOC 70 has 3 to 10 feet of backfill soil covering subsurface soil contaminated with PCBs and PAHs. The industrial reuse cancer risk is 1.1×10^{-7}, and the adult HI is 0.0024. The unrestricted cancer risk is 1.2×10^{-6}, within the low end of the risk management range of 1×10^{-4} to 1×10^{-6}, and the child HI is 0.1. Projected long-term plans for the site are industrial/commercial-related use, which is consistent with city of San Bernardino zoning.

Alternative 1 (NFA) is currently protective because the cancer risk is less than 1 x 10^{-6} and the hazard index is less than 1. The risk is probably less than predicted because the risk does not factor in the backfill soil covering the two small areas of contamination, and because the risk analysis does not account for the size of the site and the extent to which clean soil has been used to backfill the original excavation.

2.5.13.6 Description of the Selected Remedy

The selected remedy for AOC 70 is NFA.

2.5.13.7 Summary of Rationale for the Selected Remedy

AOC 70 contains soil contaminated by PAHs buried beneath approximately 3 to 10 feet of backfill soil. The combined child/adult excess cancer risk (1.2 x 10^{-6}) is in the acceptable risk management range for unrestricted reuse. The child non-cancer HI is 0.1. The most likely reuse of the site is as commercial/industrial development being considered by the IVDA consistent with city of San Bernardino zoning.

NFA is protective of human health and the environment due to the small size of the site (0.1 acre) and contamination is buried approximately 3 to 10 feet bgs. It is highly unlikely that the risk scenario used to develop the site risk (including duration and frequency of exposure) is relevant based on the size of the site and distribution of contaminants. The prior removal action is protective of human health and the environment in the long and short term. There are no ARARs related to this decision, and treatment of the remaining contaminants at the site is not warranted under waste management regulations. The preferred decision is readily implementable and cost effective.

2.5.13.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for unrestricted reuse of AOC 70.

2.5.14 Building 752 Exterior Radium Spill

2.5.14.1 Site History

Building 752 is located in the eastern portion of the CBA adjacent to the airfield (see Figure 1-2). The building was used during the 1940s and 1950s for the repair of aircraft instruments, including painting instrument dials with radio-luminescent paint containing radium-226. The room used for painting dials was sealed in 1955 when painting operations ceased. During the period that painting occurred, paint waste was flushed into a sink connected to the sanitary sewer. Investigations of the sink and piping system showed that they were contaminated by radium-226. This included the piping system outside of the building to where it connected with the sanitary sewer. Cleanup of the interior piping system and interior surfaces of Building 752 were handled under separate programs. Cleanup of soils affected by radium-226 waste outside of Building 752 are being addressed in this ROD.

To determine whether soils outside of the building had been affected by the discharge of paint waste into the sanitary sewer pipe, the pipe was excavated for visual characterization and soil sampling. The pipe was constructed of 6-inch vitreous clay in 3-foot sections. Two soil samples collected as part of the initial site characterization were found to contain radium-226 at 169 ±10 picoCuries per gram (pCi/g) and 1,940 ±20 pCi/g (background is 1.41 pCi/g). The entire waste line piping was surveyed with a field instrument and found to exhibit gamma radiation above background levels.

Excavation of the piping system was conducted July 23 through August 1, 1996. The excavation was approximately 3 feet deep where the waste line exited the southwest corner of the building, and extended to a depth of 9 feet where the waste line entered the sanitary sewer. All excavated soil and piping was disposed off site (IT Corporation, 1999).

A total of 40 confirmation soil samples were collected at approximately 10-foot intervals before backfilling and analyzed for radium-226. Detections ranged between 0.84 and 6.5 pCi/g. The mean concentration of the samples was 1.7 pCi/g (IT Corporation, 1999). The Norton AFB background level for radium is 1.41 pCi/g. Before backfilling the trench, a new waste line was

installed between the building and the sanitary sewer. After backfilling the trench, asphalt pavement was placed over the excavation.

As part of the overall radium-226 investigation of the Building 752 area, additional radium-226 contamination was discovered in an area immediately west of the building. Building drawings from the 1950s indicate a wooden loading dock attached to the building over the affected area. In February 2001, the loading dock area was sampled for radium-226. Fourteen samples were collected, and radium-226 ranged between 10 and 240 pCi/g. The investigators determined that the area of concern is 11 by 55 feet, with depth of contamination between 1 and 4 feet bgs (USAF, 2001). The estimated volume of affected soil is 1,400 cubic feet.

Radium-226 contaminated soil was removed in 2004. The closure report is in preparation. All contaminated soil will be properly disposed.

2.5.14.2 Current and Potential Future Site Use

Currently the site is not in use. The property is currently zoned industrial/commercial by the city of San Bernardino. Projected long-term use of the building and surrounding area is expected to be industrial/commercial-related options for the property (airfield support).

2.5.14.3 Summary of Site Risk

The BWFS concluded that the cancer risk due to residual radium-226 is at the high end of the acceptable range for industrial reuse and unacceptable for unrestricted reuse. Table 2-21 summarizes the BWFS risk assessment for the Building 752 radium paint spill. Removal of contaminated soil was completed in 2004, and the final closure report is in preparation.

2.5.14.4 Remedial Action Objectives

The RAOs for Building 752 Radium Spill are:

- Reduce the lifetime excess cancer risk to an individual of between 1 x 10-4 and 1 x 10-6 using 1 x 10-6 as the point of departure for the remediation goal ("the NCP cancer risk remedial goal").

Table 2-21

Summary of Building 752 Risks – Industrial and Unrestricted Land Use Scenarios

Reuse Scenario	Depth Interval Exhibiting Contamination (feet bgs)	Affected Area (acres)	Cancer Risk[1]	Non-cancer Risk[1]	Blood-Lead Level[2] (µg/dL)	COC Risk Drivers	Comments
Industrial	0 to 3	0.01	4.7×10^{-5}	--	--[3]	Radium 226	Risk under industrial reuse scenario at the high end of the acceptable range.
Unrestricted	0 to 3	0.01	2.1×10^{-4}	--	--[3]	Radium 226	Unacceptable risk under unrestricted land use scenario

Notes:

[1] Cancer risk and HI for industrial scenario is adult exposure only, and unrestricted land-use scenario is the sum of child and adult exposures. In general, action is not warranted at a site when the cancer risk is less than 10^{-4} and HI is less than 1. The 10^{-6} risk level was used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.

[2] 99th percentile data. The adult residential (unrestricted) blood-lead level is provided in the industrial scenario for comparison. The blood-lead level for adults in an industrial scenario would be lower. The child blood-lead level is provided in the unrestricted land-use scenario, because its level is higher (more restrictive) than the adult level. The target blood-lead level is less than 10 µg/dL.

[3] Lead is not chemical of concern at IRP Site 1.

bgs = below ground surface
HI = Hazard Index
µg/dL = micrograms per deciliter

Radium-226 contaminated soil was removed in 2004. The closure report is in preparation.

2.5.14.5 Analysis of Alternatives

In the location of the wash water spill, radium-226 has contaminated the soil at the surface to 3 feet bgs. Projected long-term reuse plans for Building 752 and the surrounding area are industrial/commercial-related uses, which is consistent with city of San Bernardino zoning. The industrial reuse risk is 4.7×10^{-5}, and the unrestricted reuse risk is 2.1×10^{-4}.

Alternative 1 (NFA) would not be protective under an unrestricted reuse scenario. In addition, the industrial risk is on the high end of the acceptable range. Radium-226 is persistent in the environment (greater than 2000 year half-life).

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing limitations on land use that "run with the land." The ICs would prohibit unrestricted reuse of the site, notify others about the presence of soils contamination, restrict soil excavation and disposal, and allow access for inspection of ongoing land-use activities. The ICs would address the 0.2-acre area of affected soil. There are no short-term concerns with this alternative.

Alternative 3 (Containment) for the pipeline spill location, which would consist of the existing asphalt and concrete cover, would protect human health and the environment by providing a barrier to exposure. Long-term effectiveness could be ensured by ICs requiring maintenance of the containment system. Containment would not be applicable to the surface spill location because a minimum 2-foot cover probably would interfere with reuse plans for the building area. There are no ARARs applicable to the containment alternative.

Alternative 4 (Removal) would provide long-term effectiveness and permanence. Short-term impacts due to soil excavation would need to be managed. The alternative could be implemented to address excavation, transport, and disposal ARARs and could be completed in less than one week. Contaminant concentrations are not at levels that trigger land disposal treatment requirements, and there would be no treatment to reduce TMV.

Pothole removals were completed in 2004 along the former sewer line in order to meet a cleanup goal of 2 pCi/g. Also, radium-226 contaminated soil along the west side of the building was removed in 2004. All contaminated soil will be properly disposed. The closure report, which is in preparation, will include characterization of any remaining contaminant levels to demonstrate that Building 752 has been cleaned up to the acceptable risk range.

2.5.14.6 Description of the Selected Remedy

The selected remedy is excavation and disposal of soil containing radium-226 in excess of 2 pCi/g along the west side of the building. The excavated soil will be transported off base for disposal at a permitted facility. The closure report, which is in preparation, will include characterization of any remaining contaminant levels to demonstrate that Building 752 has been cleaned up to the acceptable risk range.

2.5.14.7 Summary of Rationale for the Selected Remedy

The Building 752 exterior sewer pipeline location was subject to a removal action involving excavation of the pipe and surrounding soils exhibiting radium-226 contamination. Projected long-term plans for the building are industrial/commercial-related uses, which is consistent with city of San Bernardino zoning. The excavation was backfilled with soil and covered by asphalt

and concrete pavement. Residual contamination at the site exists as three hot spots along the pipeline right-of-way. The only risk due to the site would occur if the cover were to be removed (combined child/adult excess cancer risk of 2.3×10^{-6}). This risk is driven by three hot-spot locations based on confirmation data collected following removal of the pipeline. The selected remedy for the pipeline excavation is pothole removal of three spots exceeding 2 pCi/g for radium-226 and off-site disposal of the soil.

The wash water spill location exhibits radium-226 contamination in an elongated area immediately west of Building 752. The combined child/adult cancer risk of 2.1×10^{-4} exceeds the risk management decision range; therefore, the selected remedy is excavation and removal of the soil contamination that extends to approximately 2 feet bgs, exceeding 2 pCi/g for radium-226.

The selected remedy is protective of human health and the environment through permanent removal of contaminated soil above unrestricted use levels. The excavated soil will be transported off base for disposal at a permitted facility. The excavation will be performed in a manner to address all ARARs for radioactive material handling, transport, and disposal. The decision is protective in the short-term through implementation of measures to prevent release of contaminants during waste handling and transport. The decision is protective in the long-term due to the reduction in wastes at the site. Soil contaminant concentrations are not sufficient to warrant treatment prior to disposal. The decision is readily implementable and will be cost-effective.

Pothole removals were completed in 2004 along the former sewer line in order to meet a cleanup goal of 2 pCi/g. Also, removal of the radium-226 contaminated soil on the west side of Building 752 was completed in 2004. The closure report is in preparation. All contaminated soil will be properly disposed.

2.5.14.8 Expected Outcome of Selected Remedy

Implementation of the selected remedy at Building 752 will allow for unrestricted reuse of the site. Pothole removals were completed in 2004 along the former sewer line in order to meet a cleanup goal of 2 pCi/g. Also, removal of the radium-226 contaminated soil on the west side of

the building was completed in 2004. The closure report is in preparation. All contaminated soil will be properly disposed.

2.5.15 NBA PCE Plume

2.5.15.1 Site History

The NBA has two PCE plumes, one in the eastern portion (east PCE plume) where the former Site 2 landfill is situated, and a smaller plume in the central portion (west PCE plume). Only the west PCE plume has been above the MCL for PCE since April 2003. The average gradient in the NBA has been observed to fluctuate between a low of 0.004 foot per foot (October 2003) and a high of 0.039 foot per foot (April 1996). Seasonal variation remains relatively constant.

The source of the contamination contributing to the NBA west PCE plume is not believed to be associated with IRP Site 2. PCE concentrations are higher in the west plume than those in the east plume, whereas they would be expected to be less due to contaminant dispersal. In addition, there are monitoring wells with no detectable PCE between the two plumes. During the CS and ESI, which involved sampling at buildings with a history of chemical usage, soil gas samples were collected at several building locations in the NBA in the vicinity of the west PCE plume. PCE was not detected in the soil gas samples at concentrations that could affect groundwater at 200 feet bgs.

The groundwater flow direction in the NBA is to the west to west-northwest. Groundwater quality data for the NBA plume wells do not indicate significant movement of the plumes, either horizontally or vertically. The decline in PCE concentrations is likely a result of natural attenuation of the plumes and the limited extent (area and concentration) of the PCE source. Analytical data show that PCE concentrations decrease rapidly with depth. The NBA PCE plume has been monitored for 12 years (48 consecutive quarters). Data from MW294, cross-gradient to the Site 2 landfill and north of the base suggest there may have been an off-site source for PCE that, at least in part, contributed to the NBA plumes.

PCE and TCE have been the most frequently detected chemicals in the samples collected from the 32 NBA groundwater monitoring wells, with less frequent detections of benzene, vinyl

chloride, trichloroethane, tichlorofluoromethane, and dichlorodifluoromethane. During the last 12 years of sampling, the PCE plume has been well defined; however, there have been sampling periods where PCE was at or over 5 μg/L. Detections of PCE at or above its MCL of 5 μg/L in the NBA plume wells have steadily declined since it was detected in samples collected from seven wells at a maximum of 18 μg/L in July 1992. PCE was not detected above the MCL in any NBA well except MW-113 since April 2003. NBA monitoring well MW-113 continues to fluctuate around the MCL. Table 2-22 summarizes the PCE data since 1992.

2.5.15.2 Current and Potential Future Site Use

The property overlying the NBA plume is zoned industrial/commercial by the city of San Bernardino. The projected long-term use for Site 2, which overlies the east plume, is expected to be passive open space or potentially a long-term, open storage area. The projected long-term use for the property over the west plume is industrial/commercial, possibly warehousing.

2.5.15.3 Summary of Site Risk

The BWFS concluded NFA for this site as data collected over the past 12 years indicate that PCE concentrations are at or below the MCL (5 μg/L), with an overall trend of decreasing concentrations.

2.5.15.4 Remedial Action Objectives

There are no RAOs for the NBA PCE Plume since there is un unacceptable risk to human health or the environment.

2.5.15.5 Analysis of Alternatives

PCE contamination has been decreasing, probably due to natural attenuation, since first monitored in 1992 and is at or below the MCL of 5 μg/L.

Alternative 1 (NFA) is potentially not protective of human health and the environment under the residential reuse scenario. The land is zoned for industrial/commercial uses, and the proposed master plan for the area identifies the site for industrial buildings. Current land use in the eastern portion of the NBA is open space (Site 2 closed landfill). Current land use in the western portion

Table 2-22

Summary of Groundwater Monitoring Data in the NBA PCE Plume

Well	Historical Maximum Concentration (µg/L)	Date of Historical Maximum Concentration	Last Date Over 5 µg/L	Maximum Concentration 2004 (µg/L)
MW110B	3.2	Jul 92	0	1.2
MW113B	18	Jul 92	7.6 Oct 04	7.6
MW157B	0.11	Apr 94	0	N/S
MW166A[1]	ND	NA	0	Abandoned
MW230A	ND	NA	0	Dry
MW231A	0.2	Dec 91	0	Dry
MW233A	2.1	Apr 00	0	Dry
MW234A[1]	8.5	Jul 92	8.5 Jul 92	Dry
MW235A	3.8	Apr 94	0	Dry
MW236A	13	Aug 93	5.6 Oct 96	Dry
MW239A	3.6	Jul 92	0	Dry
MW241A	ND	NA	0	Dry
MW242A	ND	NA	0	Dry
MW243A	1.1	Jan 93	0	Dry
MW244A	11	Jan 95	7.3 Jan 00	Dry
MW245A	ND	NA	0	Dry
MW246A	18	Jul 92	5.0 Oct 95	Dry
MW248B	ND	NA	0	0.7 (ND)
MW249B	4	Oct 96	0	1.1
MW252A	17	Oct 92	8.7 Oct 02	Dry
MW258A	8.7	Jul 92	5.5 Jan 93	Dry
MW259A	2.3	Jan 93	0	Dry
MW260A	0.15	Apr 94	0	Dry
MW269A	11	Jul 92	5.0 Oct 95	Dry
MW270A	2	Jul 95	0	Dry
MW271A	5.8	Jan 93	5.8 Jan 93	Dry
MW272B	1.6	Jul 92	0	0.7 (ND)
MW273A	9	Apr 95	5.0 Apr 99	Dry
MW276C[1]	3.1	Nov 93	0	Abandoned
MW284A	10	Jul 92	6.8 Apr 00	0.7 (ND)
MW294A	5.9	Nov 93	5.9 Nov 93	Dry
MW295B	0.4	Jul 99	0	0.7 (ND)
MW298A	ND	NA	0	N/S

[1] MW234 was abandoned in October 1998. MW276 was abandoned in October 1999. MW166 was abandoned in March 2004.

A = A level; B = B level; C = C level

µg/L = micrograms per liter

NA = not applicable

ND = not detected

N/S = not sampled

of the NBA is industrial/commercial-related projects. Projected long-term reuse for the entire NBA is for industrial/commercial-related projects. However, NFA would fail to provide adequate assurance of long-term effectiveness and permanence under an unrestricted reuse scenario.

Alternative 2 (ICs) addresses long-term effectiveness and protection of human health by providing for limitations on land use that "run with the land." Alternative 2 coupled with long-term groundwater monitoring, would prohibit groundwater extraction other than for groundwater monitoring beneath the property, and allow access to inspect ongoing land-use activities. There are no short-term concerns with this alternative.

2.5.15.6 Description of the Selected Remedy

- The selected remedy for the NBA PCE Plume is NFA.

2.5.15.7 Summary of Rationale for the Selected Remedy

The NBA plume has been monitored for 12 years (48 consecutive quarters) since 1992 and the PCE in the plume is at or below the MCL. One well (MW-113) fluctuates around the MCL. The current use of the property overlying the east plume is a closed landfill and projected long-term use of the site is expected to be passive open space. Currently the NBA property is not used and projected use is for commercial/industrial, possibly warehousing.

2.5.15.8 Expected Outcome of the Selected Remedy

The selected remedy will allow for unrestricted land use of the NBA plume property.

3.0 OTHER CONSIDERATIONS

3.1 PRINCIPAL THREAT WASTE

The NCP establishes principal threat wastes as source materials considered highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. Soil contamination generally considered to present a principal threat poses a potential risk several orders of magnitude greater than the risk level acceptable for the current or reasonably anticipated future land use (U.S. EPA, 1997b). Principal threat wastes at the former Norton AFB have been addressed through prior removal actions. No principal threat wastes are present at the former Norton AFB.

3.2 STATUTORY DETERMINATIONS

Per the statutory requirements of CERCLA Section 121, the selected remedies will adequately protect human health and the environment, will comply with ARARs, and are cost effective. The selected remedies do not utilize treatment as a principal element since treatment would not be cost-effective. The selected remedies will result in the following:

- Existing or potential risks posed by the sites through each pathway will be eliminated, reduced, or controlled by the response action.
- Exposure levels will be reduced to protective ARAR levels or to within U.S. EPA's risk management range of 10^{-4} to 10^{-6} for carcinogenic risk and below the hazard index of 1.0 for noncarcinogens.
- Implementation of the selected remedies will not pose unacceptable short-term risks or cross-media impacts.
- The remedies provide adequate protection of the environment.

ARARs and requirements of the 5-year review process are described in the following subsections.

3.2.1 Applicable or Relevant and Appropriate Requirements

A CERCLA remedy must meet ARARs unless a waiver to the specific requirement is sought and approved by the U.S. EPA. An ARAR is a promulgated and enforceable federal standard, regulation, criteria, or limitation stated in a law or regulatory code. A relevant State law or regulation can also be considered as an ARAR if the state law or regulation is more stringent than its existing federal counterpart. ARARs, therefore, provide legal direction and control of the remedial activity. *Applicable* requirements are standards or regulations that specifically address the contaminant (chemical) or site situation by statute or code. *Relevant and appropriate* requirements reflect standards or regulations that were not originally written for the site situation, but because the site situation is sufficiently similar to the intent of the requirement, the requirement can be used to direct and control the remedial activity.

In addition to ARARs, CERCLA allows the consideration of To-Be-Considered (TBC) criteria for the establishment of standards to direct and control a remedial activity when no ARAR exists. TBCs can include risk-based criteria, advisories, and guidance that were not promulgated and may have been originally developed for risk management decisions. For example, there are very few promulgated standards for cleanup of contaminated soil. Soil cleanup standards are generally risk-based values that are developed as an outcome from the risk assessment process.

There are three general categories of ARARs: chemical-, location-, and action-specific. Chemical-specific ARARs establish numerical values for allowable concentrations of substances that may remain in, or be discharged to, the medium of concern, or a medium affected by the RA. MCLs for drinking water and contaminant treatment standards are considered chemical-specific ARARs. For contaminants or media that do not have a promulgated standard (e.g., metals contaminated soils), TBC criteria may be evaluated for use in defining chemical-specific cleanup standards.

Location-specific ARARs are generally restrictions placed upon the concentration of a substance or the conduct of certain activities solely because they are in specific locations. The siting of landfills or treatment units is an example of a location-specific ARAR. TBC siting criteria could relate to the proximity of a site to endangered species habitat.

Action-specific ARARs are typically technology- or activity-based requirements or limitations taken with respect to specific substances or requirements to conduct certain actions to address particular circumstances at a site. Limitations on waste treatment (e.g., air stripping towers, incinerators) are examples of action-specific ARARs. These ARARs include performance and design standards. TBC action-specific criteria could relate to the reduction of truck traffic during a southern California smog alert advisory to reduce the impact to air quality.

The federal and state ARARs pertaining to the selected remedies presented in this ROD are presented in Tables 3-1 through 3-3.

3.2.2 Five-Year Review

In compliance with CERCLA requirements, a 5-year review process has been developed to assess the effectiveness of remedial actions undertaken at the former Norton AFB. The goal of the review is to confirm that the selected RAs comply with performance standards established in the former Norton AFB ROD, cleanup goals are being achieved in accordance with the selected remedy, and that the selected RAs continue to be protective of human health and the environment. Representatives from the DTSC, the RWQCB, the U.S. EPA, and the Air Force participate in this review process.

The initial review for the former Norton AFB CBA OU was conducted in 1999, and the next review is scheduled for 2005.

3.3 DOCUMENTATION OF SIGNIFICANT CHANGES

The BWPP was submitted to the public for review on July 28, 2004, and a public hearing was held at the San Bernardino City Council Chambers on August 11, 2004. Public comments were received and are provided in the Responsiveness Summary in Section 4. The selected remedies are consistent with the preferred remedial alternatives designated in the BWPP.

Table 3-1

Applicable or Relevant and Appropriate Requirements for Excavation Sites

Requirement	Citation	Scope	Comment	Applicable Site
Federal ARARs				
Endangered Species Act	16 USC §§1531 40 CFR §6.302(H) 50 CFR Part 12	Requires action to conserve endangered species within critical habitat	**Applicable** to any action affecting welfare of the San Bernardino Merriam's kangaroo rat and the Santa Ana River woolly star.	IRP Site 10
State of California ARARs				
California Endangered Species Act	California Fish and Game Code #2050-2098	Provides for the conservation and protection of endangered species and their habitats	**Applicable** to the protection of the Santa Ana River woolly star, a state listed species.	IRP Site 10
Criteria for Identifying Hazardous Waste/Persistent and Bioaccumulative Toxic Substances	CCR Title 22, Div. 4.5, Chapter 11, §66261, et seq.	Provides criteria and tests for identifying hazardous waste. If a chemical is either listed or tested and found hazardous, then disposal must comply with Title 22 hazardous waste requirements regarding how the chemical is to be handled, treated, and disposed.	**Applicable** to the characterization of contaminated soils for off-site disposal in a permitted facility.	IRP Sites 7, 10, 17, AOCs 33, Building 752
Standards Applicable to Generators of Hazardous Waste	CCR Title 22, Div. 4.5, Chapter 12, §§66262, et seq.	Establishes requirements for generators of hazardous waste, includes regulations for accumulation of waste and manifests and reporting requirements. Relates to the requirements for maintaining documented records of generation and disposal of hazardous substances.	**Applicable** to excavated soil that meets state hazardous waste criteria.	IRP Sites 7, 10, 17, AOCs 33, Building 752
Standards Applicable to Transporters of Hazardous Waste	CCR Title 22, Div. 4.5, Ch. 11, §§66263.10-66263.17	Establishes standards for transporters of hazardous waste including compliance with manifest systems and record keeping.	**Applicable** for off-site transportation of hazardous waste.	IRP Sites 7, 10, 17, AOCs 33, Building 752
Land Disposal Restrictions	CCR Title 22, Div. 4.5, Chapter 18, §66268 et. seq.	Provides regulations that establish concentration limits and treatment criteria for the land disposal of hazardous waste.	**Applicable to excavated soil exceeding threshold levels requiring treatment prior to disposal at a permitted facility.**	IRP Sites 7, 10, 17, AOCs 33, Building 752

Table 3-1

Applicable or Relevant and Appropriate Requirements for Excavation Sites

Requirement	Citation	Scope	Comment	Applicable Site
South Coast Air Quality Management District Rules	Rule 403	Fugitive Dust. Limits on-site activities so that the concentration of fugitive dust at the property line will not be visible and the downwind particulate concentration will not be more than 100 micrograms per cubic meter, averaged over 5 hours, above the upwind particulate concentration.	**Applicable** to excavation of contaminated soils	IRP Sites 7, 10, 17, AOCs 33, Building 752
South Coast Air Quality Management District Rules	Rule 404	Particulate Matter (Concentration). Rule 404 (1) limits particulate emission to a range of 0.010 to 0.196 grain per standard cubic foot averaged over 1 hour for a volumetric gas flow rate of 7,000 cubic meters per hour to 23 cubic meters per hour, respectively.	**Applicable** to excavation of contaminated soils.	IRP Sites 7, 10, 17, AOCs 33, Building 752

AOC = Area of Concern
CCR = California Code of Regulations
CFR = Code of Federal Regulations
IRP = Installation Restoration Program
USC = United States Code

Table 3-2

Applicable or Relevant and Appropriate Requirements for Institutional Control Sites

Requirement	Citation	Scope	Comment	Applicable Site
State of California ARARs				
Land Use Covenant	CCR, title 22 section 67391.1(a)	Requires imposition of appropriate limitation on land use by recorded land use covenant when hazardous substances remain on the property at levels that are not suitable for unrestricted use of the land.	**Relevant and Appropriate**	IRP Sites 2, 5, 19 and SAR
Land Use Covenant	CCR, title 22 section 67391.1(b)	Requires that the cleanup decision document contain an implementation and enforcement plan of land use limitations.	**Relevant and Appropriate**	IRP Sites 2, 5, 19 and SAR
Land Use Covenant	CCR, title 22 section 67391.1(d)	Requires that the land use covenant be recorded in the county where the land is located	**Relevant and Appropriate**	IRP Sites 2, 5, 19 and SAR
Land Use Covenant	CCR, title 22 section 67391.1(i)	Definitions	**Relevant and Appropriate**	IRP Sites 2, 5, 19 and SAR
Land Use Covenant	CA Civil Code Section 1471(a) & (b)	Specifies requirements for land use covenants to apply to successors in title to the land.	**Relevant and Appropriate**	IRP Sites 2, 5, 19 and SAR

CCR = California Code of Regulations
IRP = Installation Restoration Program

Table 3-3

Applicable or Relevant and Appropriate Requirements to the Site 2 O&M Work Plan

Requirement	Citation	Scope	Comment	Applicable Site
Chemical Specific				
National Primary Drinking Water Standards	40 CFR Part 141.61	Requires meeting national primary drinking water standards.	**Relevant and Appropriate**	IRP Site 2
California Maximum Contaminant Levels – Organic Chemicals	CCR, title 22, section 64444 – Primary Standards	Provides numerical contaminant limits for certain organic chemicals in drinking water.	**Relevant and Appropriate** (if more stringent than the 40 CFR Part 141.61 standard)	IRP Site 2
Action Specific				
Monitoring Requirements	CCR, title 27, section 20385	Release monitoring requirements for solid waste management units.	**Applicable**	IRP Site 2
General Closure and Post-Closure Maintenance	CCR, title 27, section 20950(a), (e)	General closure and post-closure maintenance standards for solid waste landfills.	**Applicable**	IRP Site 2
General Post-Closure Maintenance	CCR, title 27, section 21090(b)(1), (c), (e)(2)	Closure and post-closure maintenance requirements for solid waste landfills.	**Applicable**	IRP Site 2
Gas Monitoring and Control During Closure and Post-closure	CCR, title 27, section 20921	Methane must not exceed 5% at the property boundary or other approved monitoring point	**Applicable**	IRP Site 2
Gas Monitoring	CCR, title 27, section 20923	Gas monitoring program required.	**Applicable**	IRP Site 2
Perimeter Monitoring Network	CCR, title 27, section 20925	Perimeter subsurface monitoring wells required.	**Applicable**	IRP Site 2
Structure Monitoring	CCR, title 27; section 20931	If there are structures, gas monitoring required	**Applicable**	IRP Site 2
Monitored Parameters	CCR, title 27; section 20932	Methane and any specific trace gases must be sampled	**Applicable**	IRP Site 2
Monitoring Frequency	CCR, title 27; section 20933	Quarterly monitoring required, at a minimum	**Applicable**	IRP Site 2
Reporting	CCR, title 27; section 20934	Results of monitoring to be submitted	**Applicable**	IRP Site 2
Gas Control	CCR, title 27; section 20937	Requires gas control system if methane concentrations exceed compliance levels	**Applicable**	IRP Site 2
Post-closure Maintenance	CCR, title 27; section 21180	The landfill's final cover and operating systems must be maintained and monitored for no less than 30 years following closure.	**Applicable**	IRP Site 2

Table 3-3

Applicable or Relevant and Appropriate Requirements to the Site 2 O&M Work Plan

Requirement	Citation	Scope	Comment	Applicable Site
Post-closure Land Use	CCR, title 27; section 21190	Specific restrictions and considerations in future land use	**Applicable**	IRP Site 2
Gas Control	SCAQMD Rule 1150.1	Requires controlling gaseous emissions	**Applicable**	IRP Site 2

CCR = California Code of Regulations
CFR = Code of Federal Regulations
SCAQMD = South Coast Air Quality Management District (California)

4.0 RESPONSIVENESS SUMMARY

PUBLIC COMMENTS ON THE BASEWIDE PROPOSED PLAN

Comments and responses are summarized below. Only one comment from the public was received during the public meeting held on August 11, 2004, or during the comment period from July 28 through September 10, 2004.

Comment: I'd just like to express appreciation of the agencies. As many of you know, when the base was closed it was leased and turned over to Inland Valley Development Agency and San Bernardino International Airport Authority, and that was in 1994 and 1995. And I've been here since 1998 working with all of these folks on this process, and there's a couple of things I want to mention.

There's Phil, EPA, State of California, and many others in the room who worked on this, and what's really important frankly is getting this cleanup approval and getting the title to the property because title to the property allows us to go into redevelopment.

And, in fact, we have a representative from Hillwood here tonight. They've been putting in some very modern and up-scale buildings into this project, which is a tremendous development for the community, adding jobs and so forth. So it's been a long road but I think, as Phil said too, we've been fortunate that the cleanup has gone very well.

A lot of money has been spent too. I don't know the number. Phil can maybe give us that number, but it's not just a lot of time. It's a lot of money. So tonight is really a milestone because as we finish the record of decision, we will shortly own all the property and will be in the full redevelopment program.

So again, thanks to you all. I've enjoyed working with you. I've spent about six to seven years myself that I've been here, and we've made an awful lot of progress. So thank you for the opportunity to comment.

Air Force Response: I did write down those numbers. Overall to date to the end of fiscal year (FY) 2004, $133 million. FY04 to completion, the estimated cost, $8.5 million. For the selected alternatives that we discussed, their estimated cost is around $3.4 million. These estimates are that, they're estimates. Hopefully there's still some cost savings. There isn't cost savings on the $133 million; that's already spent. As we go through to completion, hopefully we can spend less taxpayer dollars on the $8.5 million that we have estimated to complete.

5.0 REFERENCES

The number found with brackets [ ] at the end of each citation is the Administrative Record Index identifier for the document. The reviewer can use the Administrative Record document identifier to locate the document within the Norton AFB Administrative Record. The record can be accessed at the website www.afrpa.hq.af.mil/mcclellan or at the Norman Feldheym Central Library in San Bernardino.

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APPENDIX A

ADMINISTRATIVE RECORD INDEX

APPENDIX A

ADMINISTRATIVE RECORD

AR IR File Number	Document Date	Subject or Title	Author
02	Oct 82	Phase I, Records Search Report	Engineering-Science, Inc.
1310	22 Sep 83	Base Letter to CRWQCB Concerning Interim Status Documents, Groundwater Monitoring	Hearn, Max L, Col 63 ABG/DE
03	Aug 84	Phase II, Stage 1, Draft Final Technical Report, Problem Confirmation/Quantification Study, Vol I of II	Roy F Weston, Inc.
04	Feb 85	Phase II, Stage 1, Draft Final Report, Problem Confirmation Study, Vol II of II, Appendices	Roy F Weston, Inc.
05	Feb 85	Phase II, Stage 1, Draft Final Report, Problem Confirmation Study, Vol I of II	Roy F Weston, Inc.
06	25 Mar 85	CRWQCB Letter to Base Transmitting Draft Comments on Phase II, Stage 1, Draft Final Report	Anderson, James W California Regional Water Quality Control Board
07	02 Apr 85	CRWQCB Letter to HQ MAC Transmitting Comments on Phase II, Stage 1, Draft Final Report	Anderson, James W California Regional Water Quality Control Board
08	12 Apr 85	CDHS Letter to HQ MAC Concerning Comments on Phase II, Stage 1, Draft Final Report	Anderson, Chester E California Department of Health Services
11	Jul 85	Phase II, Stage 1, Final Report, Problem Confirmation Study, Vol I of II	Roy F Weston, Inc.
12	Jul 85	Phase II, Stage 1, Final Report, Problem Confirmation Study, Vol II of II, Appendices	Roy F Weston, Inc.
20	02 Aug 85	CRWQCB Letter to Base Concerning Probable Soil and Groundwater Pollution, Bldg 245 Waste Disposal Facilities	Baqai, Hisam A California Regional Water Quality Control Board
22	15 Aug 85	RPUD Letter to Base Concerning Review of Phase II, Stage 2, Draft Work Plan	Lee, Zora Riverside Public Utilities Department
29	03 Dec 85	CSWRCB Letter to Base Concerning Toxic Pits Cleanup Act	Johnson, Roger California State Water Resources Control Board
30	14 Nov 86	CRWQCB Letter to Base Concerning Cleanup and Abatement Order for IWTP Sludge Drying Beds	Bennett, James R California Regional Water Quality Control Board
33	16 May 86	Technical Operation Plan	Ecology and Environment, Inc.
3345	28 May 86	Project Quality Plan, Site 17	IT Corp.
34	10 Jun 86	Work Plan, Site 17	IT Corp.
36	25 Jul 86	EPA Letter to HQ MAC Concerning Receipt of Technical Operations Plan for Phase II, Stage 2	Clifford, Jerry EPA Region IX
37	08 Aug 86	Work Plan, Revision A, Site 17	IT Corp.
38	09 Sep 86	Phase IVA, Draft RA Plan, Task Report No. 11, Field Investigation Report, Site 17	IT Corp.
40	09 Sep 86	Phase IVA, RA Plan, Task Report No. 2, Screen Control Measures, Site 17	IT Corp.
41	09 Sep 86	Phase IVA, RA Plan Task Report No. 11, Field Investigation Report, Site 17	IT Corp.

AR IR File Number	Document Date	Subject or Title	Author
42	10 Oct 86	Phase IVA, RA Plan, Task Report No. 11, Field Investigation Report, Site 17	IT Corp.
30	14 Nov 86	CRWQCB Letter to Base Concerning Cleanup and Abatement Order for IWTP Sludge Drying Beds	Bennett, James R California Regional Water Quality Control Board
45	14 Nov 86	CRWQCB Letter to Base Concerning Issuance of Cleanup and Abatement Order for Violations and/or Threatened Violations of Waste Discharge	California Regional Water Quality Control Board
46	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol I of V	Ecology and Environment, Inc.
47	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol II of V, Appendices A-G	Ecology and Environment, Inc.
48 Part 1	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol III of V, Appendix H, Soils Data	Ecology and Environment, Inc.
48 Part 2	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol III of V, Appendix H, Soils Data	Ecology and Environment, Inc.
49 Part 1	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol IV of V, Appendix H, Water Data	Ecology and Environment, Inc.
49 Part 2	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol IV of V, Appendix H, Water Data	Ecology and Environment, Inc.
50	Dec 86	Phase II, Stage 2, Draft Confirmation/Quantification Report, Vol V of V, Appendices I-M	Ecology and Environment, Inc.
51	23 Dec 86	ORNL Letter to EPA Transmitting Addendum A to Work Plan, Site 17	Loyd, John R Oak Ridge National Laboratory
53	29 Jan 87	CRWQCB Letter to Base Concerning Disposal of Dried Sludge to Class II Landfill	Bennett, James R California Regional Water Quality Control Board
54	30 Jan 87	Base Letter to CRWQCB Transmitting Addendum A of Phase IV, RA Plan, Site 17	Bailey, Fred A 63 CES/DE
55	27 Feb 87	EPA Letter to ORNL Concerning Disposal of Soil Cuttings and Groundwater Generated During Field Investigations	Benner, Andria F EPA Region IX
56	02 Mar 87	EPA Letter to HQ MAC Transmitting Comments on Phase II, Stage 2, Draft Final Report	Benner, Andria F EPA Region IX
58	03 Mar 87	Draft IAG	Benner, Andria F EPA Region IX
59	10 Mar 87	Base Letter to CRWQCB Concerning Status of Compliance With Cleanup and Abatement Order, 14 Nov 86	Voigt, David A, Col 63 ABG/CC
60	19 Mar 87	EPA Letter to Base Concerning Proposed Schedule and Procedures for IAG Negotiation Meeting and Tentative Process and Schedule for Technical Meeting on Phase II, Stage 2, Report	Benner, Andria F EPA Region IX
61	27 Mar 87	CRWQCB Letter to MAJCOM Concerning Comments on Phase II, Stage 2, Draft Final Report	Bennett, James R California Regional Water Quality Control Board
63	17 Apr 87	CDHS Letter to EPA Transmitting Comments on Draft IAG	Hoffman, Robert P California Department of Health Services
64	30 Apr 87	SBCDEHS Letter to Base Concerning Alternatives to Disposal or Treatment of Tanks and Contaminated Soil, Bldg 719	Ruch, Donna L San Bernardino County Department of Environmental Health Services

AR IR File Number	Document Date	Subject or Title	Author
65	May 87	Phase II/IVA, QAPP	Ecology and Environment, Inc.
66	May 87	Phase II/IVA, Stage 1, Draft Work Plan	Ecology and Environment, Inc.
67	May 87	Phase II/IVA, Stage 3, HSP	Ecology and Environment, Inc.
68	04 May 87	Base Letter to EPA Transmitting Review Comments on Draft IAG	Calhoun, Thomas J, Capt 63 CES/DEEV
69	07 May 87	USAF OEHL Letter to Base Transmitting Phase II/IVA, Stage 1, Draft Work Plan	Gibson, David P, Jr, Capt USAF OEHL/TSS
70	28 May 87	EPA Letter to USAF OEHL Transmitting Comments on Phase II/IVA, Stage 1, Draft Work Plan	Benner, Andria F EPA Region IX
71	04 Jun 87	EPA Letter to USAF OEHL Transmitting Additional Comments on Phase II/IVA, Stage 1, Draft Work Plan	Benner, Andria F EPA Region IX
72	08 Jun 87	CRWQCB Letter to USAF OEHL Concerning Comments on Phase II/IVA, Stage 1, Work Plan	Berchtold, Kurt V California Regional Water Quality Control Board
73	16 Jun 87	Base Letter to SBCDEHS Concerning Results of Water Sampling	Bush, Mark J, Capt USAF Clinic/SGPB
74	23 Jun 87	EPA Letter to Base Concerning Comments on Revised Draft IAG	Benner, Andria F EPA Region IX
75	23 Jun 87	EPA Letter to USAF OEHL Transmitting Comments on Phase II/IVA, Stage 1, QAPP	Benner, Andria F EPA Region IX
76	01 Jul 87	EPA Letter to USAF OEHL Transmitting Second Set of Comments on Phase II/IVA, Stage 1, QAPP	Benner, Andria F EPA Region IX
77	01 Jul 87	EPA Letter to USAF OEHL Transmitting Summary of Preliminary Review of Local Groundwater Quality Data	Benner, Andria F EPA Region IX
78	08 Jul 87	EPA Letter to USAF OEHL Transmitting Comments on Phase II/IVA, Stage 1, Containerization Proposal	Benner, Andria F EPA Region IX
79	09 Jul 87	EPA Letter to Base Concerning Interim Guidance on Compliance with ARARs	Porter, Winston, J EPA Region IX
81	21 Aug 87	CRWQCB Letter to Base Concerning Comments on Phase II/IVA, Stage 1, Work Plan	Holub, Robert L California Regional Water Quality Control Board
82	Sep 87	Phase II, Stage 3, Work Plan	Ecology and Environment, Inc.
83	Sep 87	Phase II, Stage 3, Quality Assurance Plan	Ecology and Environment, Inc.
84	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol I of VI	Ecology and Environment, Inc.
85	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol II of VI, Appendices A-G	Ecology and Environment, Inc.
86	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol III of VI, Appendix H, Soils Data	Ecology and Environment, Inc.
87	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol IV of VI, Appendix H, Water Data	Ecology and Environment, Inc.
88	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol V of VI, Appendix H, Water Data	Ecology and Environment, Inc.
89	Sep 87	Phase II, Stage 2, Confirmation/Quantification Report, Vol VI of VI, Appendices I-M	Ecology and Environment, Inc.
3814	Sep 87	Update Pages, Phase II, Stage 2, Confirmation/Quantification Report, Vol I of VI	Ecology and Environment, Inc.

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91	10 Sep 87	CRWQCB Letter to Base Concerning Report Requirements of Cleanup and Abatement Order	Bennett, James R California Regional Water Quality Control Board
43	Oct 87	Stage 3, Site HSP	Ecology and Environment, Inc.
92	02 Oct 87	EPA Letter to USAF OEHL Transmitting Comments on Stage 3, Work Plan	Benner, Andria F EPA Region IX
93	06 Oct 87	EPA Letter to USAF OEHL Transmitting Comments on Phase II, Stage 3, QAPP	Benner, Andria F EPA Region IX
94	14 Oct 87	USAF OEHL Letter to EPA Concerning Response to Comments on Phase II, Stage 3, Work Plan and QAPP	Gibson, David P, Jr, Capt USAF OEHL/TSS
95	16 Oct 87	EPA Letter to USAF OEHL Transmitting Additional Comments on Stage 3 Work Plan	Benner, Andria F EPA Region IX
3346	23 Oct 87	EPA Letter to USAF OEHL Concerning Comments on Stage 3 Work Plan and QAPP	Benner, Andria F EPA Region IX
96	02 Nov 87	Revised Draft IAG	Woods, Shauna EPA Region IX
97	12 Nov 87	EPA Letter to Base Concerning Comments on Draft CRP	Benner, Andria F EPA Region IX
98	Dec 87	Phase II, Stage 3, Work Plan	Ecology and Environment, Inc.
99	Dec 87	Phase II, Stage 3, QAPP	Ecology and Environment, Inc.
108	14 Jan 88	Draft Closure Requirements for RCRA Units Report	Ecology and Environment, Inc.
102	22 Jan 88	EPA Letter to Base Concerning Revised Draft Technical Attachments to Federal Facility IAG	Benner, Andria F EPA Region IX
109	29 Jan 88	Draft Site Management Plan, Outline and Schedule	Ecology and Environment, Inc.
110	29 Jan 88	Newspaper Article, "Well Test Turns Up Radioactivity"	Whitehair, John The San Bernardino Sun
1464	29 Jan 88	RD/RA, and O&M, Draft Report	Ecology and Environment, Inc.
1470	29 Jan 88	Draft Technical Description Report of Superfund Site	63 CES/DEEV
112	01 Feb 88	HQ MAC Letter to USAF OEHL/TS Concerning Additional Changes to Phase II, Stage 3, Work Plan	Allan, Andrew A HQ MAC/DEEV
113	02 Feb 88	Base Letter to CRWQCB Concerning Stage 3 Work Plan	Voigt, David A, Col 63 ABG/CC
114	23 Feb 88	CRWQCB Letter to Base Concerning Enforcement Provision Applicable to Solid Waste Assessment Test Program Submittals	Bennett, James R California Regional Water Quality Control Board
115	01 Mar 88	EPA Letter to Base Concerning Revised Draft Federal Facility IAG	Woods, Shauna EPA Region IX
116	03 Mar 88	OFWS Letter to Pacific SW Region DOI Concerning Preliminary Natural Resources Survey	Robinson, Andrew F Oregon Fish and Wildlife Service
117	06 Mar 88	EPA Letter to Base Concerning FFA Negotiations	Zelikson, Jeffrey EPA Region IX
124	07 Mar 88	DOI Memorandum Concerning Preliminary Natural Resources Survey	Sanderson-Port, Patricia US Department of the Interior
119	28 Mar 88	US Senate Letter to Base Concerning Visit	Wilson, Pete US Senate

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120	29 Mar 88	CRWQCB Letter to Base Concerning Requirements of the Toxic Pits Cleanup Act	Bennett, James R California Regional Water Quality Control Board
122	07 Apr 88	EPA Letter to Base Concerning Comments on Draft IAG, 26 Feb 88	Woods, Shauna EPA Region IX
125	18 May 88	EPA Letter to Base Concerning ARARs	Benner, Andria F EPA Region IX
126	26 May 88	Base Letter to EPA Concerning Thiosulfate Pond IRA	Deegan, William M, LtCol 63 CES/DEV
128	Jun 88	Interim Solid Waste Assessment Test Study	Ecology and Environment, Inc.
131	27 Jun 88	EPA Letter to Base Concerning Comments on Work Plans for On/Off Base Groundwater Monitoring Program	Clifford, Jerry EPA Region IX
132	27 Jun 88	EPA Letter to Base Concerning Phase II, Stage 3, Investigation	EPA Region IX
134	27 Jun 88	EPA Letter to Base Concerning EA, Comprehensive RI/FS Work Plan	Benner, Andria F EPA Region IX
135	27 Jun 88	EPA Letter to Base Concerning Interim Closure of Thiosulfate Pond	Anderson, Julie EPA Region IX
136	27 Jun 88	EPA Letter to Base Concerning CRP	Benner, Andria F EPA Region IX
137	Jul 88	Draft Well Monitoring Data Report	Ecology and Environment, Inc.
138	Jul 88	Well Monitoring Data Report	Ecology and Environment, Inc.
139	11 Jul 88	CRWQCB Letter to Base Concerning Interim Closure of Thiosulfate Pond - AAVS Area	Bailey, Richard D California Regional Water Quality Control Board
141	27 Jul 88	USDOI Letter to Base Concerning Endangered Species	Allan, William C US Department of the Interior
143	08 Sep 88	EPA Letter to Base Concerning RAs and a Request for Technical Data	Strauss, Alexis EPA Region IX
145	Oct 88	Draft Scoping Document Report, Technical Attachment for IAG	Tetra Tech, Inc.
151	18 Oct 88	Base Letter to EPA Concerning Progress of RAs and Technical Data	Deegan, William M, LtCol 63 CES/DEV
153	02 Nov 88	CRWQCB Letter to Base Concerning Disposal of Contaminated Well Development Water to IWTP	Berchtold, Kurt V California Regional Water Quality Control Board
154	02 Nov 88	CDHS Letter to EPA Concerning Scope Document	Anderson, Chester E California Department of Health Services
156	10 Nov 88	CDHS Letter to EPA Concerning Draft Scoping Document	Rahman, Sazedur California Department of Health Services
3391	28 Nov 88	CDHS Letter to Distribution Concerning Sample Results for Organics and Radioactivity	Anderson, Chester E California Department of Health Services
157	30 Nov 88	EPA Letter to Base Concerning Draft Scoping Document	Anderson, Julie EPA Region IX
158	Dec 88	Stage 3, Draft Final Report, Vol I of X	Ecology and Environment, Inc.

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159	Dec 88	Stage 3, Draft Final Report, Vol II of X	Ecology and Environment, Inc.
160	Dec 88	Stage 3, Draft Final Report, Vol III of X, Appendices A-C	Ecology and Environment, Inc.
161	Dec 88	Stage 3, Draft Final Report, Vol IV of X, Appendices D-F	Ecology and Environment, Inc.
162	Dec 88	Stage 3, Draft Final Report, Vol V of X, Appendix G.1	Ecology and Environment, Inc.
163 Part 1	Dec 88	Stage 3, Draft Final Report, Vol VI of X, Appendix G.3	Ecology and Environment, Inc.
163 Part 2	Dec 88	Stage 3, Draft Final Report, Vol VI of X, Appendix G.3	Ecology and Environment, Inc.
164	Dec 88	Stage 3, Draft Final Report, Vol VII of X, Appendix G.3 (Cont.)	Ecology and Environment, Inc.
165	Dec 88	Stage 3, Draft Final Report, Vol VIII of X, Appendices G.3 (Cont.)	Ecology and Environment, Inc.
166	Dec 88	Stage 3, Draft Final Report, Vol IX of X, Appendices G.3 (Cont.)	Ecology and Environment, Inc.
167	Dec 88	Stage 3, Draft Final Report, Vol X of X, Appendices H-K	Ecology and Environment, Inc.
170	19 Dec 88	ITIR, Results of Investigation of Southwest Base Area	EA Engineering, Science, and Technology, Inc.
3397	19 Dec 88	CDHS Letter to Distribution Concerning Sample Results for Organics and Radioactivity	Anderson, Chester E California Department of Health Services
133	89	Phase I, Wells Survey, Technical Report	The Earth Technology Corp.
171	Jan 89	AFRCE Letter to EPA Concerning IAG Negotiations on Technical Attachments and Schedules	Hannah, John S, LtCol AFRCE-WR
172	12 Jan 89	ITIR, Analytical Reports, Methods Summary, Holding Time Summary, Vol I of II	EA Engineering, Science, and Technology, Inc.
173	12 Jan 89	ITIR, QA/QC Summary, Chain-of-Custody Forms, Well Information, Field Sampling Forms, Vol II of II	EA Engineering, Science, and Technology, Inc.
3353	12 Jan 89	TRC Meeting Minutes, 12 Jan 89	Blank, Richard A, LtCol 63 CES/DEV
175	26 Jan 89	EPA Letter to AFRCE Concerning Technical Attachments to IAG	Woods, Shauna EPA Region IX
176	30 Jan 89	Base Letter to EPA Concerning IAG Negotiations	Deegan, William M, LtCol 63 ABG/DEV
3139	Feb 89	Aerial Photographic Analysis	Divers, A B Lockheed Engineering and Sciences Company
178	14 Feb 89	EPA Letter to SAF Concerning Technical Attachments to IAG	Diamond, Bruce M EPA Region IX
180	21 Feb 89	AFRCE Letter to EPA Concerning Resuming IAG Negotiations	Hannah, John S, LtCol AFRCE-WR
182	Mar 89	Draft Final Comprehensive Work Plan	Ecology and Environment, Inc.
183	Mar 89	Final Comprehensive Work Plan	Ecology and Environment, Inc.
184	Mar 89	Stage 3, Groundwater Monitoring Plan	Ecology and Environment, Inc.

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185	Mar 89	Stage 3, Briefing Report	Ecology and Environment, Inc.
186	Mar 89	Stage 3, Draft Briefing Report	Ecology and Environment, Inc.
187	02 Mar 89	EPA Letter to Base Concerning Comments on Draft Work Scope, Groundwater Sampling and Analysis	Flaherty, Michael EPA Region IX
190	13 Mar 89	Base Letter to EPA Concerning Resuming IAG Negotiations	Wood, Dennis D, Col 63 ABG/CC
146	15 Mar 89	Newspaper Article, "Closure Raises Fears Over Toxic Cleanup at Norton AFB"	The Riverside Press-Enterprise
192	21 Mar 89	Base Letter to EPA Concerning Meeting of Government and Regulatory Officials	Wood, Dennis D, Col 63 ABG/CC
193	22 Mar 89	CRWQCB Letter to Base Concerning Comments on Phase II, Stage 3, Draft Report	Overman, Steven D California Regional Water Quality Control Board
194	31 Mar 89	EPA Letter to Base Transmitting Draft General Comments on Draft Phase II, Stage 3, Report	Flaherty, Michael EPA Region IX
195	Apr 89	Draft Groundwater Monitoring Plan, Vol II of II	Ecology and Environment, Inc.
3398	04 Apr 89	CDHS Letter to Distribution Concerning Sample Results for Organics and Radioactivity	Anderson, Chester E California Department of Health Services
207	10 Apr 89	Preliminary Health Assessment Study	Agency for Toxic Substances and Disease Registry
199	19 Apr 89	CRWQCB Letter to Base Concerning Comments on Comprehensive Work Plan	Overman, Steven D California Regional Water Quality Control Board
200	25 Apr 89	EPA Letter to Base Transmitting Review Comments on Phase II, Stage 3, Draft Report	Flaherty, Michael EPA Region IX
204	22 May 89	EPA Letter to Base Concerning Comments on Hazardous Waste Demolition Study	Flaherty, Michael EPA Region IX
205	22 May 89	USAWRA Letter to EPA Concerning Potential Groundwater Contamination	Pace, Ira B Upper Santa Ana Water Resources Association
206	23 May 89	CRWQCB Letter to Base Concerning Proposed Groundwater Monitoring Plan	Overman, Steven D California Regional Water Quality Control Board
208	Jun 89	Draft Amendments to FFA	EPA Region IX
211	19 Jun 89	EPA Letter to USAWRA Concerning Position on Cleanup of Improperly Disposed Hazardous Substances	Flaherty, Michael EPA Region IX
212	19 Jun 89	EPA Letter to Base Transmitting Comments on Comprehensive Work Plan and Changes to Draft Scoping Document	Flaherty, Michael EPA Region IX
213	20 Jun 89	EPA Letter to Base Concerning Comments on Draft Stage 3 Groundwater Monitoring Plan	Flaherty, Michael EPA Region IX
214	28 Jun 89	Newspaper Article, "After Two Years, EPA, Norton AFB Agree on Cleanup of Toxic Wastes"	Whitehair, John The San Bernardino Sun
174	29 Jun 89	Newspaper Article, "Pact Paves Way for Norton AFB Cleanup"	Peraza, Richard The Redlands Daily Facts
215	29 Jun 89	Federal Facility Agreement	EPA Region IX
2891	29 Jun 89	Video Tape, Press Conference	63 ABG/CEV

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181	30 Jun 89	Newspaper Article, "Air Force Dragged Feet on Cleanup of Norton AFB Toxic Wastes, EPA Says"	Whitehair, John The San Bernardino Sun
218	Jul 89	Draft Community Relations Plan (CRP)	63 CES/DEEV
231	Jul 89	Newspaper Article, "Public Notice IAG"	The Riverside Press-Enterprise The Redlands Daily Facts
202	07 Jul 89	Newspaper Article, "Air Force Regulators Sign Clean-Up Agreement"	The El Chicano
188	14 Jul 89	Newspaper Article, "Public Notice IAG"	The San Bernardino Sun
221	04 Aug 89	Hazardous Waste Demolition Study	O'Brien Consulting Engineers
3347	11 Aug 89	Closure Plan, Demolition of Burning Lagoons, IWTP	O'Brien Consulting Engineers
226	15 Aug 89	CDHS Letter to Interested Agencies Concerning Summary of Analysis of Special Groundwater Monitoring Program	Anderson, Chester E California Department of Health Services
228	28 Aug 89	CWMB Letter to Base Concerning Comments on IAG	Larson, George H California Waste Management Board
229	28 Aug 89	USAWRA Letter to Base Concerning Comments on IAG	Rowe, Larry W Upper Santa Ana Water Resources Association
230	31 Aug 89	Base Letter to EPA Transmitting Draft CRP	Maneri, G T 63 CES/DEV
232	Sep 89	Groundwater Monitoring Plan, Vol I of II	Ecology and Environment, Inc.
233	Sep 89	Groundwater Monitoring Plan, Vol II of II	Ecology and Environment, Inc.
244	Oct 89	Conceptual Design Report for RA	CDM Federal Programs Corp.
253	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Vol I of VI	Ecology and Environment, Inc.
254	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Vol II of VI	Ecology and Environment, Inc.
255	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Vol III of VI	Ecology and Environment, Inc.
256	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Appendices A-F, Vol IV of VI	Ecology and Environment, Inc.
257	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Appendix G, Vol V of VI	Ecology and Environment, Inc.
258 Part 1	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Appendix G (Continued), Vol VI of VI	Ecology and Environment, Inc.
258 Part 2	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Appendix G (Continued), Vol VI of VI	Ecology and Environment, Inc.
259	Nov 89	Phase II, Stage 3, Draft Final Report, Sep 87-Dec 88, Appendices H-K	Ecology and Environment, Inc.
260	Nov 89	Conceptual Design Report for RA	CDM Federal Programs Corp.
261	14 Nov 89	Conceptual Design for RAs Presentation Slides Package/Information	CDM Federal Programs Corp.
262	17 Nov 89	EPA Letter to Base Concerning Delay in Submittal of Comments on Sludge Bed and Burning Lagoon Closure Plans	Flaherty, Michael EPA Region IX

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265	04 Dec 89	Base Letter to EPA Transmitting Revised CRP and Responses to Comments on Previous CRP	Maneri, G T 63 CES/DEV
266	05 Dec 89	Meeting Minutes, Conceptual Design Review, CRP Review, 14-15 Nov 89	CDM Federal Programs Corp.
267	07 Dec 89	ICF Letter to EPA Transmitting Comments on Scope of Work for Radionuclide Sampling	Gymala, Perry ICF Kaiser Engineers
268	12 Dec 89	EPA Letter to Base Transmitting Comments on Work Scope for Groundwater Sampling and Analysis	Flaherty, Michael EPA Region IX
269	13 Dec 89	EPA Letter to Base Concerning Completion of Review of Conceptual Design for RAs, Nov 89	Flaherty, Michael EPA Region IX
270	14 Dec 89	CDHS Letter to Base Concerning Draft Comments on IAG	Peterson, Pete California Department of Health Services
272	22 Dec 89	EPA Letter to Base Concerning Comments on Closure Plan for Demolition of Sludge Beds (IWTP), Section 02050 Specs for Demolition of Burning Lagoons, and Hazardous Waste Demolition Study	Flaherty, Michael EPA Region IX
273	22 Dec 89	EPA Letter to Base Transmitting Comments on Internal Draft Site Characterization Plan for CBA and Comments on Associated Internal Draft QAPP	Flaherty, Michael EPA Region IX
275	Jan 90	Draft Final FSP, Site Characterization, and TCE Investigation for CBA	CDM Federal Programs Corp.
276	17 Jan 90	EPA Letter to AFRCE Transmitting EPA Comments on Draft Response to Comments on IAG	Woods, Shauna EPA Region IX
278	30 Jan 90	EPA Letter to Base Transmitting Review Comments on Abandoned Well Survey Report, Nov 88	Ricks, James A, Jr EPA Region IX
274	31 Jan 90	Project Managers Meeting Minutes, 15 Dec 89	CDM Federal Programs Corp.
280	Feb 90	Draft Final Conceptual Design Report for RA	CDM Federal Programs Corp.
284	13 Feb 90	Summary of IAG	Riverside Public Utilities Department San Bernardino County Public Works Agency California Waste Management Board Upper Santa Ana Water Resources Association
285	14 Feb 90	CDHS Letter to Base Concerning Draft Responses to Public Comments on IAG	Peterson, Pete California Department of Health Services
286	26 Feb 90	CDHS Letter to Base Concerning Draft Responses to Public Comments on IAG	Peterson, Pete California Department of Health Services
241	Mar 90	Technical Review Committee Charter	63 CES/DEEV
287	01 Mar 90	RPM Meeting Minutes, 20-21 Feb 90	CDM Federal Programs Corp.
288	07 Mar 90	RPUD Letter to CDHS Concerning Delay of Implementation of IAG for Clean Up of Underground Contamination	Carnahan, Bill D Riverside Public Utilities Department
290	08 Mar 90	Base Responses to Public Comments Concerning IAG	63 CES/DEEV
291	09 Mar 90	EPA Letter to Base Concerning Review of Comment Letters Concerning IAG	Strauss, Alexis EPA Region IX

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303	20 Mar 90	Project Managers Meeting Minutes, 20-21 Mar 90	CDM Federal Programs Corp.
292	21 Mar 90	Base Letter to EPA Concerning Effective Date of IAG	Root, William L, LtCol 63 CES/DEV
293	27 Mar 90	Project Managers Meeting Minutes, 20-21 Mar 90	CDM Federal Programs Corp.
294	28 Mar 90	Base Letter to Distribution Concerning Effective Date of IAG	Wood, Dennis D, Col 63 ABG/CC
297	Apr 90	Community Relations Plan (CRP)	63 CES/DEEV
301	Apr 90	EPA Letter to Base Concerning Acceptance of CRP as Final	Ricks, James A, Jr EPA Region IX
305	13 Apr 90	Base Letter to CRWQCB Concerning Establishment of a TRC to Provide Comments on Proposed Actions, Site Remediation	Underwood, Gary R, Col 63 CSG/CC
306	13 Apr 90	Base Letter to Congressman Concerning Nominees to Participate on the TRC	Underwood, Gary R, Col 63 CSG/CC
308	20 Apr 90	CDHS Letter to CSWRCB Concerning Assistance in Compiling Potential ARARs	Arellano, Albert A, Jr California Department of Health Services
307	24 Apr 90	Project Managers Meeting Minutes, 17-18 Apr 90	CDM Federal Programs Corp.
313	30 Apr 90	CRWQCB Letter to Base Concerning Review of Technical Memorandums and FSP	Williams, Kenneth R California Regional Water Quality Control Board
317	04 May 90	CDHS Letter to Base Transmitting Preliminary Draft ARAR	Arellano, Albert A, Jr California Department of Health Services
314	18 May 90	EPA Comments on Site Characterization Plan, 05 Jan 90	EPA Region IX
320	18 May 90	EPA Letter to Base Transmitting Review Comments on FSP	Ricks, James A, Jr EPA Region IX
323	18 May 90	EPA Letter to Base Concerning Review of Agency Comments on Radionuclide Sampling Plan	Ricks, James A, Jr EPA Region IX
196	Jun 90	TRC Draft Meeting Minutes, Jun 90	63 CES/DEEV
331	04 Jun 90	Project Managers Meeting Minutes, 21-23 May 90	CDM Federal Programs Corp.
279	Jul 90	Draft Final Project Report for Investigation, Site 20	Chem-Nuclear Systems, Inc.
340	06 Jul 90	IAG Between Dept of Health and Human Services, Public Health Service, and Agency for Toxic Substances and Disease Registry on Health Assessments and Related Activities at Air Force Facilities	Vest, Gary D Johnson, Barry L Deputy Assistant Secretary of the Air Force Agency for Toxic Substances and Disease Registry
342	06 Jul 90	EPA Letter to Base Transmitting Review Comments for Abandoned Wells Survey	Ricks, James A, Jr EPA Region IX
344	09 Jul 90	CDHS Letter to Base Transmitting Comments from TRC on Site Characterization Plan	Best, Claire, T California Department of Health Services
347	12 Jul 90	RPM Meeting Minutes, 10 Jul 90	CDM Federal Programs Corp.
358	24 Jul 90	Well Depths and Perforation Location Gross Alpha Radioactivity (pCi/l), May 90	Riverside Public Utilities Department

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365	Aug 90	RI/FS, Draft Work Plan	CDM Federal Programs Corp.
366	Aug 90	Final Potential Receptor Study Report	CDM Federal Programs Corp.
371	29 Aug 90	Base Letter to EPA Concerning Groundwater Sampling and Analysis for Radioactivity	Root, William L, LtCol 63 CES/DEV
370	30 Aug 90	Base Letter to CRWQCB Concerning Disposal Alternatives for Treated Water from Pump and Treat System	Daneke, Steven K 63 CES/DEV
369	31 Aug 90	USAWRA Letter to Base Concerning Identification of Sources of Possible Radioactive Contamination	Rowe, Larry W Upper Santa Ana Water Resources Association
389	Sep 90	RI/FS, Draft FSP, Vol I of II	CDM Federal Programs Corp.
390	Sep 90	RI/FS, Draft FSP, Vol II of II	CDM Federal Programs Corp.
391	Sep 90	Fact Sheet No. 1, Installation Restoration Program	63 MAW/PA
393	06 Sep 90	EPA Letter to Base Concerning Review of Water Level Measurements, Radionuclide Groundwater Investigation	Ricks, James A, Jr EPA Region IX
394	06 Sep 90	CDHS Letter to Base Concerning Groundwater Sampling and Analysis for Radioactivity	Alonzo, Manuel J California Department of Health Services
396	12 Sep 90	RPM Meeting Minutes, 11 Sep 90	CDM Federal Programs Corp.
398	14 Sep 90	Base Letter to Regulators Concerning Groundwater Sampling and Analysis for Radionuclides	Gallagher, Michael R, Col 63 CES/DEV
399	17 Sep 90	TRC Meeting Minutes, 13 Aug 90	Daneke, Steven K 63 CES/DEV
400	17 Sep 90	CDHS Letter to RHWC Concerning RI/FS, Draft FSP	Best, Claire, T California Department of Health Services
407	10 Oct 90	CDHS Letter to Base Transmitting Comments on RI/FS, Draft Work Plan	Alonzo, Manuel J California Department of Health Services
408	15 Oct 90	EPA Letter to Base Transmitting Review Comments on RI/FS, Draft Work Plan	Ricks, James A, Jr EPA Region IX
409	15 Oct 90	CRWQCB Letter to Base Concerning Review of RI/FS, Draft Work Plan	Williams, Kenneth R California Regional Water Quality Control Board
411	15 Oct 90	CRWQCB Letter to Base Concerning FFA	Thibeault, Gerard J California Regional Water Quality Control Board
414	18 Oct 90	EPA Letter to Base Concerning Review of Water Level Data Summary, Radionuclide Groundwater Investigation	Ricks, James A, Jr EPA Region IX
417	26 Oct 90	Base Letter to Regulators Transmitting Comments on RI/FS, Work Plan	Daneke, Steven K 63 CES/DEEV
424	02 Nov 90	Meeting Minutes, Agency Comments on RI/FS, Draft Work Plan, 31 Oct 90	CDM Federal Programs Corp.
425	05 Nov 90	RPUD Letter to CDHS Transmitting Comments on RI/FS, Draft FSP	Makinde-Odusola, Babs Riverside Public Utilities Department
426	08 Nov 90	CRWQCB Letter to Base Concerning Review of RI/FS, Draft FSP	Williams, Kenneth R California Regional Water Quality Control Board

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427	09 Nov 90	EPA Letter to Base Transmitting Comments on RI/FS, QAPP	Ricks, James A, Jr EPA Region IX
428	11 Nov 90	CDHS Letter to Base Transmitting Comments on RI/FS, Draft QAPP	Alonzo, Manuel J California Department of Health Services
429	12 Nov 90	CDHS Letter to Base Transmitting Comments on RI/FS, Draft FSP	California Department of Health Services
430	16 Nov 90	Meeting Minutes, Agency Comments on Draft FSP, Site Characterization TCE Source Investigation for CBA, 13 Nov 90	CDM Federal Programs Corp.
433	Dec 90	RI/FS, Draft Final Work Plan	CDM Federal Programs Corp.
434	Dec 90	Field Laboratory QA/QC Plan for CBA	Woodward-Clyde Federal Services
441	17 Dec 90	RPM Meeting Minutes, 11-12 Dec 90	CDM Federal Programs Corp.
443	19 Dec 90	TRC Meeting Minutes and Corrected Minutes, 19 Dec 90	Walker, Belinda R 63 CES/DEV
445	31 Dec 90	CWMB Letter to CDHS Concerning ARARs	Formanek, Roger A California Waste Management Board
450	Jan 91	Draft Interim Report, Groundwater Sampling and Analysis	Sirrine Environmental Consultants
451	Jan 91	Draft Technology Screening Report	CDM Federal Programs Corp.
459	14 Jan 91	EPA Letter to Base Concerning RI/FS, Draft Final Comprehensive Work Plan	Ricks, James A, Jr EPA Region IX
463	15 Jan 91	CRWQCB Letter to Base Concerning Review of RI/FS, Draft Final Work Plan	Williams, Kenneth R California Regional Water Quality Control Board
465	21 Jan 91	RPM Meeting Minutes, 18 Jan 91	CDM Federal Programs Corp.
469	Feb 91	Draft Interim Report, Groundwater Sampling and Analysis	Sirrine Environmental Consultants
470	Feb 91	RI/FS, Final Comprehensive Work Plan	CDM Federal Programs Corp.
480	13 Feb 91	CDHS Letter to Base Concerning RI/FS, Draft Final FSP	Alonzo, Manuel J California Department of Health Services
481	14 Feb 91	EPA Letter to Base Concerning Draft Final QAPP	Ricks, James A, Jr EPA Region IX
482	14 Feb 91	CRWQCB Letter to Base Concerning Review of RI/FS, Draft Final FSP	Williams, Kenneth R California Regional Water Quality Control Board
484	14 Feb 91	Base Letter to EPA Transmitting RI/FS, Final Work Plan	Daneke, Steven K 63 CES/DEV
495	Mar 91	RI/FS, Final QAPP	CDM Federal Programs Corp.
496	Mar 91	RI/FS, Final FSP, Vol I of II	CDM Federal Programs Corp.
497	Mar 91	RI/FS, Final FSP, Vol II of II	CDM Federal Programs Corp.
513	01 Mar 91	Project Managers Meeting Minutes, 26 Feb 91	63 CES/DEEV

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546	23 Apr 91	CDHS Letter to Base Concerning ARARs Listed in Draft Technology Screening	Alonzo, Manuel J California Department of Health Services
547	23 Apr 91	EPA Letter to Base Concerning Comments on Draft Technology Screening	Ricks, James A, Jr EPA Region IX
552	25 Apr 91	RPM Meeting Minutes, 23 Apr 91	CDM Federal Programs Corp.
570	28 May 91	RPM Meeting Minutes, 22 May 91	CDM Federal Programs Corp.
574	Jun 91	Draft Monitoring Well Replacement Plan	CDM Federal Programs Corp.
581	19 Jun 91	RPM Meeting Minutes, 19 Jun 91	CDM Federal Programs Corp.
587	02 Jul 91	EPA Letter to Base Concerning Review Comments on EE/CA, Draft Final Removal Action	Ricks, James A, Jr EPA Region IX
589	10 Jul 91	CDHS Letter to Base Concerning Comments on Draft Monitoring Wells Replacement Plan	Arellano, Albert A, Jr California Department of Health Services
592	12 Jul 91	EPA Letter to Base Transmitting Review Comments on Draft Monitoring Well Replacement Plan	Ricks, James A, Jr EPA Region IX
598	26 Jul 91	EPA Letter to Base Concerning Reschedule of TRC and Project Managers' Meeting to 01 Aug 91	Ricks, James A, Jr EPA Region IX
602	Aug 91	Draft Final Monitoring Well Replacement Plan	CDM Federal Programs Corp.
603	Aug 91	Groundwater Sampling and Radiological Analyses Report	Chem-Nuclear Systems, Inc.
604	Aug 91	EA, Removal of Low-Level Radioactive Waste Bunker, Site 20	LABAT-ANDERSON INCORPORATED
606	02 Aug 91	RPM Meeting Minutes, 31 Jul 91	CDM Federal Programs Corp.
614	16 Aug 91	CDTSC Letter to Base Concerning Phase I, Wells Survey Technical Report	Arellano, Albert A, Jr California Department of Toxic Substances Control
620	30 Aug 91	EPA Comments on Phase I, Wells Survey Technical Report	EPA Region IX
622	Sep 91	EA, Removal of Low-Level Radioactive Waste Bunker, Site 20	LABAT-ANDERSON INCORPORATED
3401	03 Oct 91	Project Managers Meeting Minutes, 03 Oct 91	63 CES/DEV
660	28 Oct 91	CDTSC Letter to Base Concerning RPM Meeting	Arellano, Albert A, Jr California Department of Toxic Substances Control
661	30 Oct 91	Base Letter to EPA Concerning Phase I, Abandoned Well Survey Comments	Hurt, Alan C 63 CES/DEEV
664	01 Nov 91	RPM Meeting Minutes, 30 Oct 1991	CDM Federal Programs Corp.
666	08 Nov 91	Base Letter to EPA Concerning RPM Meeting Minutes, 30 Oct 91	Hurt, Alan C 63 CES/DEEV
667	11 Nov 91	Technical Memorandum Report, Rationale for Comprehensive Groundwater Sampling, Dec 91	CDM Federal Programs Corp.
3829	19 Nov 91	Technical Memorandum Report, Proposed Federal and State of California ARAR	CDM Federal Programs Corp.
670	23 Nov 91	IAG Project Managers Teleconference Meeting Minutes Report, 20 Nov 91	CDM Federal Programs Corp.

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671	24 Nov 91	Base Letter to EPA Concerning RPM Meeting, Dec 91	Hurt, Alan C 63 CES/DEEV
3354	26 Nov 91	Base Letter to Regulators Concerning Response to Comments on Phase I, Abandoned Well Survey	Hurt, Alan C 63 CES/DEV
3820	26 Nov 91	FS, Technical Memorandum Report OU1	
673	Dec 91	Final Monitoring Well Replacement Plan	CDM Federal Programs Corp.
677	06 Dec 91	IAG Project Managers Meeting Minutes, 04 Dec 91	CDM Federal Programs Corp.
680	19 Dec 91	EPA Letter to Base Concerning Site 20	Ricks, James A, Jr EPA Region IX
681	19 Dec 91	Base Letter to TRC Members Concerning Meeting, Dec 91	Hurt, Alan C 63 CES/DEEV
688	Jan 92	Draft Final Project Report for Investigation, Site 20	Chem-Nuclear Systems, Inc.
690	08 Jan 92	Geotech, Inc. Letter to Base Transmitting Proposed Work Plan for Geophysical Surveys	Dickerson, John W Geotech, Inc.
689	13 Jan 92	CDTSC Letter to Base Concerning Comments on RI/FS, Proposed Federal and State ARARs	Arellano, Albert A, Jr California Department of Toxic Substances Control
699	22 Jan 92	EPA Memorandum Concerning Base Involvement in Atmospheric Nuclear Testing	Dempsey, Gregg EPA Region IX
703	29 Jan 92	IAG Project Managers Meeting Minutes, 28 Jan 92	CDM Federal Programs Corp.
710	10 Feb 92	Base Letter to EPA Concerning Status Update, Site 20	Hurt, Alan C 63 CES/DEEV
717	19 Feb 92	CDTSC Letter to Base Concerning Amendment to IAG Minutes, 28 Jan 92	Arellano, Albert A, Jr California Department of Toxic Substances Control
718	26 Feb 92	CDTSC Letter to Base Transmitting Comments on Draft Investigation Report of Site 20	Arellano, Albert A, Jr California Department of Toxic Substances Control
725	27 Feb 92	USAWRA Letter to Base Concerning Review of Draft Report, Investigation of Site 20	McMeans, Eugene P Upper Santa Ana Water Resources Association
726	Mar 92	Fact Sheet No. 4, Visit to Norton AFB by Environmental Investigators	63 MAW/PA
728	Mar 92	Activities to Date Report, Site 20 & Hot Washdown Area Investigations	Dynamac Corp.
730	02 Mar 92	Base Letter to TRC Members Concerning Review of Draft Report, Site 20	Hurt, Alan C AFBDA/BDV
734	06 Mar 92	EPA Letter to Base Concerning Review Comments on Final Project Report, Site 20	Ricks, James A, Jr EPA Region IX
738	12 Mar 92	AFLC/EM Letter to Base Concerning Information on Radioactive Waste	Bailey, Lawrence O, Jr AFLC/EM
746	23 Mar 92	USAWRA Letter to Base Concerning Site 20	McMeans, Eugene P Upper Santa Ana Water Resources Association
759	02 Apr 92	Base Letter to EPA Concerning Review of ARARs	Hurt, Alan C AFBDA/BDV
760	03 Apr 92	Base Letter to RHWC Concerning Abandoned Well Location and Decommissioning	Hurt, Alan C AFBDA/BDV

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761	03 Apr 92	Base Letter to EPA Concerning Proposed Removal Action	Hurt, Alan C AFBDA/BDV
762	03 Apr 92	EPA Letter to Base Concerning Proposed Removal Action	Ricks, James A, Jr EPA Region IX
768	03 Apr 92	Base Letter to Regulators Concerning Intention to Initiate Removal Actions	Hurt, Alan C AFBDA/BDV
774	03 Apr 92	EPA Letter to Base Transmitting Comments on Proposed Removal Actions	Ricks, James A, Jr EPA Region IX
773	13 Apr 92	IAG Project Managers Amended Meeting Minutes Report, 11 Mar 92	CDM Federal Programs Corp.
772	29 Apr 92	CDM Letter to CDTSC Concerning Response to Comments on RI, Draft Report, CBA OU	CDM Federal Programs Corp.
780	30 Apr 92	IAG Project Managers Meeting Minutes, 29 Apr 92	CDM Federal Programs Corp.
783	06 May 92	RPM Meeting Minutes, 29 Apr 92	Hurt, Alan C AFBDA/BDV
800	Jun 92	Second Draft Investigation Report, Site 20	Chem-Nuclear Systems, Inc.
801	Jun 92	Technical Memorandum Report, Rationale for Groundwater Sample Analytes, Jun 92	CDM Federal Programs Corp.
807	04 Jun 92	EPA Letter to Base Transmitting Comments on Technical Memorandum	Ricks, James A, Jr EPA Region IX
810	04 Jun 92	RI, Draft Report, Vol I of X, Text, IRP Sites OU	CDM Federal Programs Corp.
811	04 Jun 92	RI, Draft Report, Vol II of X, Text, IRP Sites OU	CDM Federal Programs Corp.
812	04 Jun 92	RI, Draft Report, Vol III of X, Baseline Risk Assessment, IRP Sites OU	CDM Federal Programs Corp.
813	04 Jun 92	RI, Draft Report, Vol V of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
814	04 Jun 92	RI, Draft Report, Vol VI of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
815	04 Jun 92	RI, Draft Report, Vol VII of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
816	04 Jun 92	RI, Draft Report, Vol VIII of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
817 Part 1	04 Jun 92	RI, Draft Report, Vol IX of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
817 Part 2	04 Jun 92	RI, Draft Report, Vol IX of X, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
818 Part 1	04 Jun 92	RI, Draft Report, Vol X of X, Appendices L-S, IRP Sites OU	CDM Federal Programs Corp.
818 Part 2	04 Jun 92	RI, Draft Report, Vol X of X, Appendices L-S, IRP Sites OU	CDM Federal Programs Corp.
826	29 Jun 92	EPA Letter to Base Concerning Second Draft of Investigation, Site 20	Arellano, Albert A, Jr EPA Region IX
830	Jul 92	Draft Groundwater Data Trends Report, Appendices C - G	CDM Federal Programs Corp.
831	Jul 92	Draft Summary Report on Activities to Date of Site 20 & Hot Washdown Area Investigations	Dynamac Corp.
833	Jul 92	California EPA Criteria for Carcinogens Report	EPA Region IX

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3403	06 Jul 92	CDTSC Letter to Base Concerning Comments on RI, Report, IRP Sites OU	Arellano, Albert A, Jr California Department of Toxic Substances Control
853	03 Aug 92	EPA Review Comments on RI, Draft Report	Ricks, James A, Jr EPA Region IX
898	20 Aug 92	IAG Project Managers Teleconference Meeting Minutes, 20 Aug 92	Hurt, Alan C AFBDA/BDV
903	16 Sep 92	Base Letter to CDTSC Concerning Comments on Site 20 Report	Hurt, Alan C AFBDA/BDV
905	17 Sep 92	Base Letter to Regulators Concerning Proposed Additional FFA Deliverables	Hurt, Alan C AFBDA/BDV
906	17 Sep 92	Base Letter to Regulators Concerning Request for Subsequent Modification of Final Reports	Hurt, Alan C AFBDA/BDV
907	17 Sep 92	Base Letter to Regulators Concerning Delivery Extension for Base RI, Draft Final Report	Hurt, Alan C AFBDA/BDV
922	24 Sep 92	CDTSC Letter to Base Concerning Subsequent Modification of Final Reports	Arellano, Albert A, Jr California Department of Toxic Substances Control
924	25 Sep 92	Base Letter to Regulators Concerning New Data on Radiological Issues	Hurt, Alan C AFBDA/BDV
928	25 Sep 92	HQ AFBDA Letter to Base Concerning Corrections Made to the Project Managers Meeting Minutes	Kelkenberg, Kelvin J, LtCol AFBDA/SPEV
933	29 Sep 92	Notes on Study Areas, Radiation Issues, Site 20	AFBDA/BDV
935	Oct 92	RI/FS, Draft Addendum, FSP	CDM Federal Programs Corp.
937	Oct 92	Fact Sheet No. 6A, Draft Proposed Cleanup Plan, IRP Sites	Hurt, Alan C AFBDA/BDV
941	Oct 92	Base Groundwater Data and Volatiles Results, Appendix A-1	EPA Region IX
943	02 Oct 92	FS, Draft Report, IRP Sites OU	CDM Federal Programs Corp.
954	13 Oct 92	CDTSC Letter to Base Concerning Solid Waste Assessment Tests, Landfills 1 and 2	Arellano, Albert A, Jr California Department of Toxic Substances Control
955	13 Oct 92	CDTSC Letter to Base Concerning the Proposal for Additional Characterization and Deliverable Documents	Arellano, Albert A, Jr California Department of Toxic Substances Control
966	21 Oct 92	Draft Groundwater Monitoring Plan, Vol I of II	CDM Federal Programs Corp.
967	21 Oct 92	Draft Groundwater Monitoring Plan, Vol II of II	CDM Federal Programs Corp.
687	Nov 92	RI, Report, Revisions and Additions to Appendices, IRP Sites OU	CDM Federal Programs Corp.
983	04 Nov 92	RI, Draft Final Report, Vol II, Text, IRP Sites OU	CDM Federal Programs Corp.
984	04 Nov 92	RI, Draft Final Report, Vol III, Baseline Risk Assessment, IRP Sites OU	CDM Federal Programs Corp.
985	04 Nov 92	RI, Draft Final Report, Vol IV, Appendices A-J, IRP Sites OU	CDM Federal Programs Corp.
986	04 Nov 92	RI, Draft Final Report, Vol V, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
987	04 Nov 92	RI, Draft Final Report, Vol VI, Appendix K, IRP Sites OU	CDM Federal Programs Corp.

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988 Part 1	04 Nov 92	RI, Draft Final Report, Vol IX, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
988 Part 2	04 Nov 92	RI, Draft Final Report, Vol IX, Appendix K, IRP Sites OU	CDM Federal Programs Corp.
3544 Part 1	04 Nov 92	RI, Draft Final Report, Vol X, Appendices M-T, IRP Sites OU	CDM Federal Programs Corp.
3544 Part 2	04 Nov 92	RI, Draft Final Report, Vol X, Appendices M-T, IRP Sites OU	CDM Federal Programs Corp.
3947	Dec 92	IWL Investigation	Tetra Tech, Inc.
1023	08 Dec 92	CDTSC Letter to Base Concerning FS, Draft Report, IRP Sites OU	Arellano, Albert A, Jr California Department of Toxic Substances Control
1025	09 Dec 92	CRWQCB Letter to Base Concerning RI, Draft Final Report	Broderick, John C California Regional Water Quality Control Board
1030	15 Dec 92	RPM Meeting Minutes, 15-16 Dec 92	AFBDA/BDV
1031	16 Dec 92	Base Letter to EPA Concerning RI, Report	Hurt, Alan C AFBDA/BDV
1035	21 Dec 92	CRWQCB Letter to Base Concerning FS, Draft Report	Broderick, John C California Regional Water Quality Control Board
1042	28 Dec 92	CDTSC Letter to Base Concerning RI, Draft Final Report	Arellano, Albert A, Jr California Department of Toxic Substances Control
1047	30 Dec 92	CDTSC Letter to Base Concerning Comments on RI, Draft Report	Arellano, Albert A, Jr California Department of Toxic Substances Control
1048	31 Dec 92	EPA Letter to Base Transmitting Comments on RI, Draft Report, IRP Sites OU	Ricks, James A, Jr EPA Region IX
1049	Jan 93	Draft Groundwater Trends Report, Appendix A-2	CDM Federal Programs Corp.
1050	04 Jan 93	Base Letter to CDTSC Concerning RI, Report	Hurt, Alan C AFBDA/BDV
1052	05 Jan 93	CDTSC Letter to Base Transmitting Comments on Draft Groundwater Monitoring Plan	Arellano, Albert A, Jr California Department of Toxic Substances Control
1055	07 Jan 93	CRWQCB Letter to Base Concerning Completed Review of Draft Addendum to FSP	Broderick, John C California Regional Water Quality Control Board
1056	07 Jan 93	CRWQCB Letter to Base Concerning Review of Draft Groundwater Monitoring Plan	Broderick, John C California Regional Water Quality Control Board
1076	21 Jan 93	Draft Basewide Records Search Report, Vol I	CDM Federal Programs Corp.
1077	21 Jan 93	IVDA Letter to Base Concerning IVDA Meeting Minutes, 23 Nov 92	Viera, Sandra L Inland Valley Development Agency
1080	28 Jan 93	IAG Project Managers Meeting Minutes, 27-28 Jan 93	AFBDA/BDV
3364	01 Feb 93	Base Letter to Regulators Concerning Negotiated Schedule for Deliverables, IRP Sites OU	Hurt, Alan C 63 CES/DEV
3522	02 Feb 93	CDTSC Letter to Base Concerning Approval of Negotiated Schedule for Deliverables, IRP Sites OU	Arellano, Albert A, Jr California Department of Toxic Substances Control

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1088	05 Feb 93	RI/FS, Draft Final Addendum to FSP	CDM Federal Programs Corp.
1091	05 Feb 93	CRWQCB Letter to Base Concerning Draft Basewide Records Search	Broderick, John C California Regional Water Quality Control Board
1103	22 Feb 93	CDTSC Letter to Base Transmitting Comments on Draft Basewide Records Search	Alonzo, Manuel J California Department of Toxic Substances Control
1107	24 Feb 93	RPM Meeting Minutes, 27-28 Jan 93	Hurt, Alan C AFBDA/BDV
1109	25 Feb 93	Meeting Minutes, Base and CRWQCB Landfill Discussion	AFBDA/BDV
1110	26 Feb 93	EPA Letter to Base Concerning Comments on Draft Basewide Records Search	Ricks, James A, Jr EPA Region IX
4001	Mar 93	SAP, RCRA Closure Plan for IWL	A. L. Burke Engineers, Inc.
1113	Mar 93	Landfill Gas Test Report	Air Tech International
1120	11 Mar 93	RPM Meeting Minutes, 10-11 Mar 93	CDM Federal Programs Corp.
1121	17 Mar 93	RI, Final Report, Rev 0, Vol I of II, Text, IRP Sites OU	CDM Federal Programs Corp.
1122	17 Mar 93	RI, Final Report, Rev 0, Vol II of II, Text, IRP Sites OU	CDM Federal Programs Corp.
1124	18 Mar 93	Draft Data Validation Report, CBA OU and IRP Sites OU	CDM Federal Programs Corp.
1127	23 Mar 93	EPA Comments on FS, Draft Report, IRP Sites OU	EPA Region IX
765	05 Apr 93	RI/FS, Final Addendum, FSP	CDM Federal Programs Corp.
1139	21 Apr 93	RPM Meeting Minutes, 21 Apr 93	AFBDA/BDV
1140	22 Apr 93	USAWRA Letter to HQ AFBDA Concerning Contamination Remedial Projects	Upper Santa Ana Water Resources Association
1147	29 Apr 93	Phase I, Work Plan, Data Quality Objectives	CDM Federal Programs Corp.
1150	May 93	Basewide Groundwater Data	AFBDA/BDV
1167	Jun 93	Draft Technical Memorandum Report, Additional Fieldwork for Landfill, Sites 02, 10	CDM Federal Programs Corp.
1168	01 Jun 93	Draft Data Quality Objective Fact Sheets, Confirmation Study	CDM Federal Programs Corp.
39	18 Jun 93	CDTSC Letter to Base Concerning Community Environmental Response Facilitation Act Compliance	Wang, David California Department of Toxic Substances Control
362	18 Jun 93	CRWQCB Letter to Base Concerning Landfills, Approval of Solid Waste Water Quality Assessment Test	Thibeault, Gerard J California State Water Resources Control Board
351	21 Jun 93	Preliminary Draft Technical Memorandum Report, Additional Fieldwork for Landfill, Site 02, Site 10	CDM Federal Programs Corp.
535	Jul 93	Technical Memorandum Report, Groundwater Sampling Under the Comprehensive Groundwater Monitoring Program, Aug 93	CDM Federal Programs Corp.
2970	Jul 93	Technical Memorandum Report, Groundwater Sampling Under the Comprehensive Groundwater Monitoring Program, Aug 93	CDM Federal Programs Corp.
453	09 Jul 93	RPM Meeting Minutes, 09 Jul 93	AFBDA/BDV

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511	30 Jul 93	CRWQCB Letter to Base Concerning Review of Draft Technical Memorandum, Sites 02, 10	Broderick, John C California Regional Water Quality Control Board
516	30 Jul 93	CDTSC Letter to Base Concerning Draft Technical Memorandum on Landfills, Sites 02, 10	Alonzo, Manuel J California Department of Toxic Substances Control
531	Aug 93	Draft HSP, Investigation and RAs, Site 05	The Earth Technology Corp.
1283	04 Aug 93	Base Letter to Regulators Concerning Proposed Time Critical Removal Action, Site 05	Raines, Bret K AFBDA/BDV
567	12 Aug 93	IAG Project Managers Meeting Minutes, 03-04 Aug 93	AFBDA/BDV
579	20 Aug 93	Base Response to EPA Comments Concerning Meeting Minutes, 27 Jul 93	AFBDA/BDV
583	20 Aug 93	Draft Treatability Test Plan, Soil Remediation, Site 05	The Earth Technology Corp.
593	20 Aug 93	Preliminary Draft Construction Quality Plan, Soil Remediation, Site 05	The Earth Technology Corp.
630	26 Aug 93	Base Letter to Regulators Concerning Removal Action, Site 05	Warren, Patricia A AFBDA/BDV
3742	Sep 93	Final Technical Memorandum Report, Additional Fieldwork, Sites 02, 10	CDM Federal Programs Corp.
644	08 Sep 93	Base Letter to EPA Concerning Response to Comments on Draft Technical Memorandum: Additional Fieldwork for Landfill	Warren, Patricia A AFBDA/BDV
656	17 Sep 93	RPM Meeting Minutes, 09 Sep 93	AFBDA/BDV
701	20 Sep 93	Draft Treatability Test Plan, Soil Remediation, Site 05	The Earth Technology Corp.
713	29 Sep 93	Draft Confirmation Study Work Plan	CDM Federal Programs Corp.
854	20 Oct 93	EPA Review Comments on Draft Treatability Test Plan, Soil Remediation, Site 05	Ricks, James A, Jr EPA Region IX
861	20 Oct 93	CDTSC Letter to Base Concerning Draft Treatability Test Plan, Soil Remediation, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
1312	22 Oct 93	CDTSC Letter to Base Concerning Establishment of RAB	Wang, David California Department of Toxic Substances Control
871	29 Oct 93	Final Basewide Records Search Report, Vol I of III, Text	CDM Federal Programs Corp.
3284	29 Oct 93	Final Basewide Records Search Report, Vol II of III, Appendices A-D	CDM Federal Programs Corp.
3285	29 Oct 93	Final Basewide Records Search Report, Vol III of III, Appendices E-G	CDM Federal Programs Corp.
892	Nov 93	Draft Site Specific Construction Quality Plan, Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
895	Nov 93	Draft Site Specific HSP, Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
904	Nov 93	Draft Site Specific SAP, Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
915	01 Nov 93	CDTSC Letter to Base Concerning Draft Confirmation Study Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control

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3564	04 Nov 93	CRWQCB Letter to Base Concerning Rescission of Waste Discharge Requirements for Specific Facilities	Schneider, Joanne E California Regional Water Quality Control Board
1291	05 Nov 93	Base Letter to Regulators Concerning Response to EPA and CDTSC Comments on Draft Treatability Plan, Site 05	Daneke, Steven K AFBCA/SPEV
960	11 Nov 93	Action Memorandum, Activities and Investigations Being Conducted at Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
3546	15 Nov 93	HSP, Soil Remediation, Site 05	The Earth Technology Corp.
1293	18 Nov 93	Final Treatability Test Plan, Soil Remediation, Site 05	The Earth Technology Corp.
1036	23 Nov 93	CDTSC Letter to Base Concerning Establishment of RAB	Wang, David California Department of Toxic Substances Control
4002	10 Dec 93	RCRA Closure Plan for IWTP and Contingent Post-Closure Plan	GEC Environmental Consultants, Inc
1128	Jan 94	Fact Sheet No. 7, RAB	AFBCA/SPEV
1315	09 Jan 94	EPA Letter to Base Concerning Comments on Draft Technical Document to Support NFRAP, Site 06	Paull, Jeffrey M EPA Region IX
1019	10 Jan 94	RI, Draft Report, Addendum 1, Vol I of II, IRP Sites OU	CDM Federal Programs Corp.
1020	10 Jan 94	RI, Draft Report, Addendum 1, Vol II of II, IRP Sites OU	CDM Federal Programs Corp.
1155	20 Jan 94	Basewide Confirmation Study Work Plan	CDM Federal Programs Corp.
1160	Feb 94	RI, Report, Addendum 2, Draft Landfill Investigation Data, Sites 02, 10	CDM Federal Programs Corp.
3368	07 Mar 94	CDTSC Letter to Base Concerning No Comments on Technical Memorandum, Groundwater Sampling, Jan 94	Alonzo, Manuel J California Department of Toxic Substances Control
3247	22 Mar 94	CDTSC Letter to Base Concerning Comments on Soil Removal, Site Specific SAP and Soil Removal, Site Specific Construction Quality Plan, Sites 13, 14, 22	Alonzo, Manuel J California Department of Toxic Substances Control
1333	23 Mar 94	Base Letter to Regulators Concerning Additional Confirmatory Sampling, Site 08	Daneke, Steven K AFBCA/SPEV
1334	23 Mar 94	CDTSC Letter to Base Concerning Addendum No. 2, Landfill Investigation Data Report, Sites 02, 10	Alonzo, Manuel J California Department of Toxic Substances Control
1335	23 Mar 94	CDTSC Letter to Base Concerning RI, Report, Draft Addendum No. 1	Alonzo, Manuel J California Department of Toxic Substances Control
1336	24 Mar 94	EPA Letter to Base Concerning Comments on RD Work Plan and Site Construction Quality Plan	Hausladen, Martin M EPA Region IX
3369	24 Mar 94	CDTSC Letter to Base Concerning RD, Draft Work Plan, Site 01	Alonzo, Manuel J California Department of Toxic Substances Control
1260	28 Mar 94	Final Soil and Water Sampling Report, Jun 93, Vol II of III	Advanced Sciences, Inc.
1261	28 Mar 94	Final Soil and Water Sampling Report, Jun 93, Vol III of III	Advanced Sciences, Inc.
1184	Apr 94	RI, Draft Final Landfill Investigation Data Report, Addendum No 2, Sites 02, 10	CDM Federal Programs Corp.
3286	11 Apr 94	Base Letter to EPA Concerning Agreement to Withdraw Deficient Documents Referenced in EPA Letter Dated 24 Mar 94	Daneke, Steven K AFBCA/SPEV

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3287	12 Apr 94	Base Letter to CDTSC Concerning Withdraw and Replacement of Documents by EE/CA	Daneke, Steven K AFBCA/SPEV
3371	13 Apr 94	EPA Letter to Base Concerning No Comments on RI, Draft Landfill Investigation Data Report Addendum No 2, Sites 02, 10	Hausladen, Martin M EPA Region IX
1342	18 Apr 94	EPA Letter to HQ AFBCA Concerning Uncontaminated Property Identification	Anderson, Julie EPA Region IX
1345	29 Apr 94	Base Response to CDTSC Comments on RI, Draft Addendum No. 2, Landfill Investigation Data Report, 23 Mar 94	AFBCA/SPEV
1347	02 May 94	CDTSC Letter to Base Concerning Comments on Technical Memorandum, Development and Evaluation of Preliminary Remediation Goals, Industrial Scenario IRP Sites Cleanup	Alonzo, Manuel J California Department of Toxic Substances Control
1190	06 May 94	Draft Addendum No. 1 to the Final Basewide Confirmation Study Work Plan	CDM Federal Programs Corp.
1356	26 May 94	CDTSC Letter to Base Transmitting Guidance on Ecological Assessments	Alonzo, Manuel J California Department of Toxic Substances Control
3310	27 May 94	Base Letter to Regulators Concerning Revised Schedule for OU 2 and 3	Daneke, Steven K AFBCA/SPEV
1357	31 May 94	EPA Letter to Base Concerning Comments on Preliminary Remediation Goals, Industrial Reuse Scenario	Hausladen, Martin M EPA Region IX
1359	01 Jun 94	NFRAP, Draft Decision Document, PCB Spill Area, Site 08	Martin Marietta Energy Systems, Inc.
3373	01 Jun 94	EPA Letter to Base Concerning No Comments on RI, Draft Report, IRP Sites OU	Hausladen, Martin M EPA Region IX
1191	15 Jun 94	Draft Technical Memorandum Report, Preliminary Results of the Confirmation Study, Rev 1	CDM Federal Programs Corp.
1192	16 Jun 94	RI, Final Landfill Investigation Data Report, Addendum No 2, Sites 02, 10	CDM Federal Programs Corp.
1193	16 Jun 94	RI, Final Report Addendum No. 1, IRP Sites OU	CDM Federal Programs Corp.
1177	Jul 94	BRAC Archives Search Report	US Army Corps of Engineers - St. Louis District
1178	Jul 94	BRAC Archives Search Report, Conclusions and Recommendations	US Army Corps of Engineers - St. Louis District
3378	06 Jul 94	EPA Memorandum Concerning Comments on Draft Decision Document to Support NFRAP, Site 08	Paull, Jeffrey M EPA Region IX
1305	08 Jul 94	HSC Letter to Ogden Environmental Concerning CDTSC Comments on SAP and Construction Quality Plan for Soil Removal at Sites 13, 14, 22	Orton, Anne E HSC/PKVCC
3379	27 Jul 94	EPA Memorandum Concerning Application of Modified EPA Preliminary Remediation Goals	Paull, Jeffrey M EPA Region IX
1369	Aug 94	Draft Base Responses to EPA Comments Concerning Draft Decision Document to Support NFRAP, Site 08	AFBCA/SPEV
1370	01 Aug 94	EPA Letter to Base Transmitting Update to EPA Preliminary Remediation Goals Table	Smucker, Standford J EPA Region IX
3382	08 Aug 94	CDTSC Letter to Base Concerning Comments on Draft Technical Memorandum, Preliminary Results of Confirmation Study	Alonzo, Manuel J California Department of Toxic Substances Control

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3383	10 Aug 94	CDTSC Letter to Base Concerning Comments on Draft Decision Document to Support NFRAP, Site 08	Alonzo, Manuel J California Department of Toxic Substances Control
1483	17 Aug 94	Wildlife Survey Study, Spring 94	Oak Ridge National Laboratory
1201	18 Aug 94	Draft Technical Memorandum Report, Preliminary Results of the Confirmation Study, Rev 2	CDM Federal Programs Corp.
3385	24 Aug 94	CDTSC Letter to Base Concerning Comments on Final Basewide Confirmation Study Work Plan, Addendum No 1	Alonzo, Manuel J California Department of Toxic Substances Control
1374	25 Aug 94	Base Letter to USFWS Concerning Endangered Species	Warren, Patricia A AFBCA/SPEV
1205	Sep 94	Draft Construction Quality Plan	Bechtel Environmental, Inc.
1206	Sep 94	Draft Environmental HSP	Bechtel Environmental, Inc.
1207	Sep 94	Draft Environmental SAP	Bechtel Environmental, Inc.
1344	Sep 94	Base Response to CDTSC Comments on Draft Decision Document to Support NFRAP, Site 08	AFBCA/OL-E
1488	Sep 94	Draft Chemical Data Acquisition Plan, RCRA Closure of IWTP	Tetra Tech, Inc.
1489	Sep 94	Draft Site Assessment Work Plan, RCRA Closure of IWTP	Tetra Tech, Inc.
1490	Sep 94	Draft Site-Specific HSP, RCRA Closure of the IWTP	Tetra Tech, Inc.
1377	08 Sep 94	Base Letter to Regulators Transmitting Draft Technical Memorandum, Data Quality Objective Fact Sheets for Expanded Source Investigation	Daneke, Steven K AFBCA/OL-E
1379	14 Sep 94	CDTSC Letter to Base Transmitting Comments on Target Soil Cleanup Level Development Executive Summary	Alonzo, Manuel J California Department of Toxic Substances Control
1247	22 Sep 94	Final Addendum No. 1 to the Final Basewide Confirmation Study Work Plan	CDM Federal Programs Corp.
1208	27 Sep 94	Draft Technical Memorandum Report, Development and Evaluation of Soil Target Cleanup Goals, Industrial/Commercial Reuse Scenario	CDM Federal Programs Corp.
1382	27 Sep 94	Base Letter to CDTSC Concerning Comments on Technical Memorandum, Development and Evaluation of Preliminary Remediation Goals, Industrial Scenario Site Cleanup	AFBCA/OL-E
1383	28 Sep 94	EPA Memorandum Concerning Target Soil Cleanup Level Development Executive Summary	Paull, Jeffrey M EPA Region IX
4014	Oct 94	Work Plan and Site Specific HSP Site Demolition, SAP, and Removal of Materials from Selected buildings	CKY Incorporated
1385	Oct 94	Base Letter to CDTSC Concerning Comments on Target Soil Cleanup Level Development Executive Summary	AFBCA/OL-E
2763	Oct 94	Draft Community Relations Plan (CRP)	Gutierrez-Palmenberg Inc.
2823	Oct 94	Final RCRA Closure Plan, Air Combat Camera Services	Tetra Tech, Inc.
1213	06 Oct 94	Draft Technical Memorandum, NFRAP Data Summary Report, Site 08	CDM Federal Programs Corp.
1214	06 Oct 94	NFRAP, Draft Final Decision Document, Site 08, PCB Spill Area	CDM Federal Programs Corp.
1391	11 Oct 94	Base Letter to Regulators Transmitting Draft EE/CA, Site 05	Daneke, Steven K AFBCA/OL-E
1211	12 Oct 94	EE/CA, Draft Report, Site 05	Earth Tech, Inc.

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1217	20 Oct 94	Draft Investigation Integrated Work Plans SI Work Plan, SAP, HSP, Site 20	IT Corp.
3556	20 Oct 94	Biological Assessment Study, Development of SBIA	Tom Dodson and Associates
1393	25 Oct 94	Base Letter to Norton Coalition Concerning ATSDR	Daneke, Steven K AFBCA/OL-E
3392	28 Oct 94	CDTSC Memorandum Concerning Outline for Using EPA Preliminary Remediation Goals in Screening Risk Assessments at Military Facilities	Wade, Michael J Valoppi, Laura Christopher, John, PhD California Department of Toxic Substances Control California Department of Toxic Substances Control California Department of Toxic Substances Control
1219	Nov 94	NFRAP, Draft Technical Document, Former Waste Oil UST, Site 06	CDM Federal Programs Corp.
1220	Nov 94	NFRAP, Draft Final Decision Document, PCB Spill Area, Site 08	CDM Federal Programs Corp.
1221	Nov 94	NFRAP, Draft Technical Document, Site 10, Landfill Number 1	CDM Federal Programs Corp.
1222	Nov 94	ROD, Draft Partial, Drummed Waste Storage Area No. 1, Site 19	CDM Federal Programs Corp.
1223	Nov 94	NFRAP, Draft Technical Document	CDM Federal Programs Corp.
1226	Nov 94	Draft Construction Quality Plan, UST Removal Program	Bechtel Environmental, Inc.
1227	Nov 94	Draft Environmental HSP, Attachment C, UST Removal Program	Bechtel Environmental, Inc.
1772	Nov 94	Environmental HSP, Closure of the IWL	Bechtel Environmental, Inc.
3524	Nov 94	HSP, Addendum I, Site 05	Earth Tech, Inc.
3525	Nov 94	Final Site-Specific HSP, RCRA Closure of IWTP	Tetra Tech, Inc.
3526	Nov 94	Final Chemical Data Acquisition Plan, RCRA Closure of IWTP	Tetra Tech, Inc.
3549	Nov 94	Final Site Assessment Work Plan, RCRA Closure of IWTP	Tetra Tech, Inc.
1224	02 Nov 94	Draft Technical Memorandum Report, Basewide Confirmation Study Results, Expanded Source Investigation Work Plan, Vol I of II, Text	CDM Federal Programs Corp.
1225 Part 1	02 Nov 94	Draft Technical Memorandum Report, Basewide Confirmation Study Results, Expanded Source Investigation Work Plan, Vol II of II, Appendix B	CDM Federal Programs Corp.
1225 Part 2	02 Nov 94	Draft Technical Memorandum Report, Basewide Confirmation Study Results, Expanded Source Investigation Work Plan, Vol II of II, Appendix B	CDM Federal Programs Corp.
1396	14 Nov 94	CDTSC Letter to Base Transmitting Comments on Spring 94 Wildlife Survey	Alonzo, Manuel J California Department of Toxic Substances Control
1398	28 Nov 94	EPA Memorandum Concerning Comments on EE/CA, Site 05	Erickson, Kenneth J EPA Region IX
1242	Dec 94	Draft Environmental SAP, UST Removal Program	Bechtel Environmental, Inc.

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1243	Dec 94	Draft Environmental Cleanup Plan, UST Removal Program	Bechtel Environmental, Inc.
1244	Dec 94	Soil Treatment Alternatives Study, UST Removal Program	Bechtel Environmental, Inc.
1246	Dec 94	Basewide Radionuclide Characterization Draft Integrated Work Plan, SAP, FSP, HSP	IT Corp.
2567	01 Dec 94	CDTSC Letter to Base Concerning Draft Basewide Confirmation Study Results, Expanded Source Investigation Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
1399	02 Dec 94	EPA Memorandum Concerning Investigation Work Plan, SAP, and HSP, Site 20	Wood, Periann EPA Region IX
1400	05 Dec 94	EPA Letter to Base Concerning Expanded Source Investigation As Amended	Hausladen, Martin M EPA Region IX
1401	05 Dec 94	EPA Letter to Base Concerning Usage of Modified Preliminary Remediation Goals for Target Cleanup Goals	Paull, Jeffrey M EPA Region IX
1402	06 Dec 94	EPA Memorandum Concerning Draft QAPP, Site 20	Fong, Vance EPA Region IX
1403	07 Dec 94	EPA Memorandum Concerning Draft Final Decision Document to Support NFRAP, Site 08	Paull, Jeffrey M EPA Region IX
1408	09 Dec 94	CDTSC Letter to Base Concerning Draft Investigation Work Plan and SAP, Site 20	Alonzo, Manuel J California Department of Toxic Substances Control
1409	10 Dec 94	CDTSC Letter to Base Transmitting Comments on Draft EE/CA, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
1237	13 Dec 94	Draft Ecological Risk Assessment Work Plan	CDM Federal Programs Corp.
1410	14 Dec 94	CDTSC Letter to Base Concerning Draft Final Decision Document to Support NFRAP, Site 08	Alonzo, Manuel J California Department of Toxic Substances Control
1236	15 Dec 94	Wildlife and Vegetation Survey Study, Fall 94	Oak Ridge National Laboratory
1415	22 Dec 94	EPA Memorandum Concerning Proposed Soil Target Cleanup Goals	Paull, Jeffrey M EPA Region IX
1218	23 Dec 94	Final Investigation Integrated SI Work Plan, SAP, FSP, HSP, Site 20	IT Corp.
3560	30 Dec 94	Technical Memorandum Report, Development and Evaluation of Soil Target Cleanup Goals, Industrial/Commercial Reuse Scenario	CDM Federal Programs Corp.
3189	95	EPA Memorandum Concerning Comments on Draft Work Plan and Habitat Assessment	Barnett, Roxy EPA Region IX
1228	Jan 95	Construction Quality Plan, UST Removal Program	Bechtel Environmental, Inc.
1417	Jan 95	Work Plan, Final Drive-Over Radionuclide Survey	IT Corp.
1437	Jan 95	Fact Sheet No. 8, IRP	Woolfolk, Lisa Gutierrez-Palmenberg, Inc.
2764	Jan 95	Draft Revised Community Relations Plan (CRP)	Gutierrez-Palmenberg, Inc.
1418	03 Jan 95	CDTSC Letter to Base Transmitting Comments on Fact Sheet No. 8	Alonzo, Manuel J California Department of Toxic Substances Control

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1419	04 Jan 95	Base Letter to Regulators Concerning UST Removal Program	Jungwirth, Gary J AFBCA/OL-E
1420	06 Jan 95	CDTSC Letter to Base Transmitting Comments on Technical Memorandum, Soil Target Cleanup Goals	Alonzo, Manuel J California Department of Toxic Substances Control
1421	07 Jan 95	CDTSC Letter to Base Transmitting Comments on Draft Technical Document to Support NFRAP, Site 06	Alonzo, Manuel J California Department of Toxic Substances Control
1422	07 Jan 95	CDTSC Letter to Base Transmitting Comments on Draft Technical Document to Support NFRAP, Site 10	Alonzo, Manuel J California Department of Toxic Substances Control
3807	10 Jan 95	CDTSC Letter to Base Concerning Comments on ROD, Draft Partial, Site 19	Alonzo, Manuel J California Department of Toxic Substances Control
1424	17 Jan 95	CDTSC Letter to Base Transmitting Comments on Draft Technical Document to Support NFRAP	Alonzo, Manuel J California Department of Toxic Substances Control
1426	19 Jan 95	EPA Memorandum Concerning Basewide Radionuclide Characterization Draft Integrated Work Plan	Hanusiak, Lisa EPA Region IX
1266	23 Jan 95	EE/CA, Draft Final Report, Site 05	Earth Tech, Inc.
1427	24 Jan 95	Base Letter to Regulators Transmitting Draft Final EE/CA, Site 05	Jungwirth, Gary J AFBCA/OL-E
1552	26 Jan 95	RI, Draft Report Addendum, Data Validation Summary Report	CDM Federal Programs Corp.
1438	Feb 95	Fact Sheet No. 9, IRP Sites	Woolfolk, Lisa Gutierrez-Palmenberg, Inc.
1457	Feb 95	EE/CA, Draft Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
1428	01 Feb 95	EPA Letter to Base Concerning Anonymous Telephone Call Regarding Radionuclear Waste	Hausladen, Martin M EPA Region IX
1429	03 Feb 95	Base Letter to SBIAA Concerning Summary of Environmental Resources Applicable to 20 Inch Water Main Project Through Parcel B-2	Jungwirth, Gary J AFBCA/OL-E
1430	03 Feb 95	IT Corp Letter to Base Concerning Reduction of Fixed Facility Analyses, Site 20	IT Corp.
3288	05 Feb 95	City of Riverside Letter to Base Concerning No Comments on Draft Technical Memorandum, Results of the Confirmation Study Addendum No 1 or EE/CA Parcel I-3	Panahi, Zahra, Dr City of Riverside
1251	06 Feb 95	Final Technical Memorandum Report, Basewide Confirmation Study Results, Expanded Source Investigation Work Plan	CDM Federal Programs Corp.
1431	06 Feb 95	Base Letter to Regulators Concerning Revision in Number of Soil Samples Analyzed for Site 20	Jungwirth, Gary J AFBCA/OL-E
3841	06 Feb 95	Base Letter to BCT regarding RCRA Closure Plan for Air Combat Camera Facility	Jungwirth, Gar J AFBCA/OL-E
3394	10 Feb 95	CDTSC Letter to Base Concerning Comments on Wildlife and Vegetation Survey, Fall 94	Alonzo, Manuel J California Department of Toxic Substances Control
2987	14 Feb 95	CRWQCB Letter to Base Concerning Summary of Environmental Restoration Activities	Broderick, John C California Regional Water Quality Control Board

AR IR File Number	Document Date	Subject or Title	Author
3395	14 Feb 95	CDTSC Letter to Base Concerning Comments on Draft Ecological Risk Assessment Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
3289	21 Feb 95	CDTSC Letter to Base Concerning Comments on Basewide Radionuclide Characterization Draft Integrated Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
3806	27 Feb 95	RPUD Letter to Base Concerning Comments on Draft Integrated Work Plan, Basewide Radionuclide Characterization	Garcia, David V Riverside Public Utilities Department
1453	Mar 95	RAB Meeting Minutes, Mar 95	Gutierrez-Palmenberg, Inc.
2618	01 Mar 95	Newspaper Article, "No Radioactive Waste Found in Norton AFB Base Excavations"	The Riverside Press-Enterprise
3804	01 Mar 95	RPUD Letter to Base Concerning EE/CA, Site 05	Garcia, David V Riverside Public Utilities Department
1439	02 Mar 95	Fact Sheet, Investigation At Golf Course Finds No Bunker, No Radium Paint Wastes, No Radioactivity Above Background	Jungwirth, Gary J AFBCA/OL-E
2988	02 Mar 95	CDTSC Letter to Base Concerning Authorization Renewal to Operate Fixed Treatment Unit	Horner, Michael S California Department of Toxic Substances Control
1447	13 Mar 95	Treatability Test Plan, Addendum 1, Soil Remediation, Site 05	Earth Tech, Inc.
1448	13 Mar 95	EE/CA, Draft Report, Site 05	Earth Tech, Inc.
1458	22 Mar 95	IT Letter to Base Concerning Work Plan Scope Revision for Basewide Radionuclide Characterization	Doyle, Greg N Winkler, Fred IT Corp.
3842	30 Mar 95	CDTSC Letter to Base completeness Determination of the Draft closure Plan for Air Combat Camera Service	Rege, Arnand, California Department of Toxic Substances Control
1451	Apr 95	Fact Sheet No. 12, Information Repository	Woolfolk, Lisa Gutierrez-Palmenberg, Inc.
1454	Apr 95	Draft Closure Plan Determination Package	Tetra Tech, Inc.
1449	04 Apr 95	Draft Technical Memorandum Report, Development and Evaluation of Soil Target Cleanup Goals, Industrial/Commercial Reuse Scenario	CDM Federal Programs Corp.
1442	06 Apr 95	Final Basewide Radionuclide Characterization Integrated Work Plans, SAP, FSP, HSP	IT Corp.
2344	07 Apr 95	CDTSC Memorandum Concerning Draft CRP	Best, Claire, T California Department of Toxic Substances Control
1253	13 Apr 95	Base Letter to Regulators Concerning Response to CDTSC Comments on Draft Ecological Risk Assessment Surveys and Work Plan and Fall Wildlife and Vegetation Survey and Spring Wildlife Survey	Jungwirth, Gary J AFBCA/OL-E
3800	14 Apr 95	CDTSC Letter to Base Concerning Concurrence with Draft Final EE/CA, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
3173	17 Apr 95	Aerial Photographic Analysis 1949 Photo	US Army Corps of Engineers - St. Louis District

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3291	17 Apr 95	CDTSC Letter to Base Concerning Comments on Draft EE/CA, Soil Removal, Sites 13, 14, 22	Alonzo, Manuel J California Department of Toxic Substances Control
1509	18 Apr 95	EE/CA, Final Report, Site 05	Earth Tech, Inc.
1505	19 Apr 95	Final Technical Memorandum Report, Proposed Well Abandonment and Repair Plan	CDM Federal Programs Corp.
3292	19 Apr 95	CDTSC Letter to Base Concerning Basewide Radionuclide Sampling	Alonzo, Manuel J California Department of Toxic Substances Control
3843	19 Apr 95	Base Letter to BCT Concerning Closure Plan for Air Combat Camera Facility	Jungwirth, Gary AFBCA/SPEV
3396	21 Apr 95	Ecological Risk Assessment Meeting Minutes, 21 Apr 95	AFBCA/SPEV
3799	26 Apr 95	IWL Closure Plan Meeting Minutes, 26 Apr 95	California Department of Toxic Substances Control
2342	May 95	Fact Sheet, CDTSC Draft Closure Plan, Air Combat Camera Services	California Department of Toxic Substances Control
2343	11 May 95	Air Combat Camera Services Public Hearing Agenda Concerning Draft Closure Plan and Proposed Negative Declaration	California Department of Toxic Substances Control
3566	11 May 95	EPA Memorandum Concerning Treatability Test Plan Addendum 1, Soil Remediation, Site 05	Hanusiak, Lisa EPA Region IX
3797	22 May 95	CDTSC Letter to AFBCA/SP Concerning IWTP and DRMO Closures	Scandura, John E California Department of Toxic Substances Control
1546	26 May 95	Draft Data Validation Summary Report, Groundwater Sampling Event, Apr 94	CDM Federal Programs Corp.
1548	30 May 95	Draft Data Validation Summary Report, Groundwater Sampling Event, Oct 94	CDM Federal Programs Corp.
2984	31 May 95	EPA Memorandum Concerning Comments on Draft Technical Memorandum, Soil Target Cleanup Goals	Paull, Jeffrey M EPA Region IX
3009	13 Jun 95	EPA Memorandum Concerning Draft Technical Memorandum Preliminary Results of the Confirmation Study, Addendum 1	Hanusiak, Lisa EPA Region IX
1512	14 Jun 95	Draft Field SAP, RCRA Closure of IWL	CDM Federal Programs Corp.
1511	15 Jun 95	Draft RCRA Closure Plan, IWL	CDM Federal Programs Corp.
1517	16 Jun 95	Draft Landfill Closure Design Technical Memorandum Report, Investigation in Support of Design, Site 02	IT Corp.
3399	26 Jun 95	CDTSC Letter to Base Concerning Comments on Draft Data Validation Summary Report, SVE Treatability Study	Alonzo, Manuel J California Department of Toxic Substances Control
1536	Jul 95	EE/CA, Draft Report, Site 01	CH2M Hill
3408	07 Jul 95	CDTSC Letter to Base Concerning Concurrence with Draft Technical Memorandum, Landfill Design, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
1532	13 Jul 95	Draft Action Memorandum, Decision Document, Site 05	Earth Tech, Inc.
1537	18 Jul 95	Wildlife and Vegetation Survey Study, Spring 95	CDM Federal Programs Corp.
1530	21 Jul 95	Technical Memorandum Report, Landfill Closure Design, Investigation in Support of Design	IT Corp.
1535	25 Jul 95	Draft Work Plan SVE Treatability Study, Site 02	CDM Federal Programs Corp.

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3844	26 Jul 95	Newspaper Article, "Public Notice, Norton Air Force Base, Draft Action Memorandum, Fire Training Area, IRP Site 05	The Riverside Press-Enterprise; Redlands Daily Facts; San Bernardino Sun
2270	Aug 95	Draft RCRA Final Closure Work Plan for Initial Phase Sampling with Site-Specific Plans, Air Combat Camera Services	Morrison Knudsen Corp.
1849	03 Aug 95	CDTSC Letter to Base Concerning Recommendations from Field Survey to Santa Ana River Woolly Star Habitat	Alonzo, Manuel J California Department of Toxic Substances Control
1558	10 Aug 95	Draft Data Validation Summary Report, Confirmation Study	CDM Federal Programs Corp.
3308	29 Aug 95	CDTSC Letter to Base Concerning Comments on Draft SVE Treatability Study Work Plan, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
2271	Sep 95	Final RCRA Final Closure Work Plan for Initial Phase Sampling with Site-Specific Plans, Air Combat Camera Services	Morrison Knudsen Corp.
3309	02 Sep 95	CDTSC Letter to Base Concerning Comments on Draft Action Memorandum, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
2516	12 Sep 95	Base Letter Concerning Public Notice of Class I Permit Modification IWTP	Bartol, Thomas J AFBCA/OL-E
2278	13 Sep 95	Resident Letter to Base Concerning Draft Landfill Design, Site 02	Resident
1553	20 Sep 95	Work Plan, SVE Treatability Study, Site 02	CDM Federal Programs Corp.
1559	21 Sep 95	Draft Work Plan Addendum No. 2, Basewide Confirmation Study	CDM Federal Programs Corp.
1579	22 Sep 95	HQ AFCEE Response to Review Comments Concerning Engineering Design Report, Work Plan, SAP, SVE, Site 05	AFBCA/OL-E
1679	26 Sep 95	CDTSC Letter to Base Concerning Comments on Draft EE/CA, Site 01	Alonzo, Manuel J California Department of Toxic Substances Control
1864	26 Sep 95	Base Letter to EPA and CDTSC Concerning Woolly Star Recommendations	Bartol, Thomas J AFBCA/OL-E
1675	29 Sep 95	Base Letter to Regulators Concerning Radiological Investigation, Round 3 Groundwater Sampling	Bartol, Thomas J AFBCA/OL-E
1576	Oct 95	Final Closure Plan, Approval Package, Air Combat Camera Services	AFBCA/OL-E
1607	Oct 95	EE/CA, Draft Final Report, Site 01	CH2M Hill
2676	02 Oct 95	Base Letter to CDTSC Concerning Multiple Delays on FFA Schedules	Bartol, Thomas J AFBCA/OL-E
1670	10 Oct 95	Base Letter to USFWS Concerning Initiation of Formal Consultation for Closure of Landfill 2	Bartol, Thomas J AFBCA/OL-E
3783	12 Oct 95	EPA Letter to Base Concerning Third Round of Water Sampling	Wood, Periann EPA Region IX
1672	16 Oct 95	CDTSC Letter to Base Concerning Split Samples from the Third Round of Groundwater Sampling	Alonzo, Manuel J California Department of Toxic Substances Control
3782	19 Oct 95	Base Letter to Regulators Transmitting Schedule for Radiological Investigation, Round 3 Groundwater Samples	Bartol, Thomas J AFBCA/SPEV
1565	20 Oct 95	Draft Work Plan, Ecological Scoping Assessment and Risk Assessment	CDM Federal Programs Corp.

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1686	24 Oct 95	Base Letter to Regulators Concerning Responses to Comments on Action Memorandum, Site 05	Bartol, Thomas J AFBCA/OL-E
1567	27 Oct 95	ROD, Draft Final Interim, Site 19	CDM Federal Programs Corp.
2734	27 Oct 95	Base Letter to Regulators Concerning Final Soil Target Cleanup Goals	Bartol, Thomas J AFBCA/OL-E
1570	31 Oct 95	Technical Memorandum Report, Development and Evaluation of Soil Target Cleanup Goals, Industrial/ Commercial Reuse Scenario	CDM Federal Programs Corp.
1703	01 Nov 95	Base Letter to Dodson and Associates Concerning Response to Comments on Draft EE/CA, Site 01	Bartol, Thomas J AFBCA/OL-E
2730	01 Nov 95	Base Letter to Regulators Concerning Draft Final EE/CA, Site 01	Bartol, Thomas J AFBCA/OL-E
1681	07 Nov 95	CDTSC Letter to Base Concerning Draft Final Action Memorandum, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
1595	10 Nov 95	Two Project Variances for Landfill 2 SVE Treatability Study, Site 02	Sheth, Yogesh V Lockheed Martin Energy Systems
1682	16 Nov 95	Base Letter to CDTSC Concerning Final Closure Plan, Approval and Implementation of a Groundwater Monitoring Plan for the Air Combat Camera Services Bldg	Bartol, Thomas J AFBCA/OL-E
1577	22 Nov 95	Draft SAP Addendum I, Site 05	Earth Tech, Inc.
1578	22 Nov 95	Draft Engineering Design Report, Work Plan, SVE, Site 05	Earth Tech, Inc.
3780	24 Nov 95	Base Letter to Regulators Concerning Radiological Investigation, Round 3 Groundwater Sampling	Bartol, Thomas J AFBCA/SPEV
1684	27 Nov 95	RPUD Letter to Base Concerning Draft Ecological Scoping Assessment and Risk Assessment Work Plan	Panahi, Zahra, Dr Riverside Public Utilities Department
1572	28 Nov 95	RCRA Closure Plan, IWL, Rev 0	CDM Federal Programs Corp.
1580	Dec 95	EE/CA, Draft Final Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
1586	Dec 95	Base Letter to Regulators Concerning Round 1 Groundwater Sampling and Analysis ITIR, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
2528	04 Dec 95	Base Letter to Regulators Concerning Review of Draft Final EE/CA, Site 01	Bartol, Thomas J AFBCA/OL-E
2381	17 Dec 95	Newspaper Article, “Norton Air Force Base Notice of Public Comment Period on EE/CA for Non-Time Critical Removal Actions at IWTP and CBA, Site 13, 14, 22”	San Bernardino Sun
1591	05 Dec 95	Base Letter to Regulators Concerning Interviews with Individuals Knowledgeable of Past Hazardous Waste Disposal	Bartol, Thomas J AFBCA/OL-E
1593	11 Dec 95	Base Letter to Regulators Concerning EE/CA, Draft Final Report	Bartol, Thomas J AFBCA/OL-E
1704	11 Dec 95	EPA Memorandum Concerning SAP Addendum, Site 05	Hanusiak, Lisa EPA Region IX
2690	11 Dec 95	EPA Memorandum Concerning Draft EE/CA, Parcel I-3	Levine, Herbert EPA Region IX
2691	11 Dec 95	EPA Memorandum Concerning EE/CA, Site 02	Levine, Herbert EPA Region IX

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2738	11 Dec 95	Base Letter to Regulators Concerning Final Action Memorandum, Site 05	Bartol, Thomas J AFBCA/OL-E
1584	12 Dec 95	Final Action Memorandum, Decision Document, Site 05	Earth Tech, Inc.
1581	19 Dec 95	EE/CA, Report, Parcel I-3	CDM Federal Programs Corp.
1594	19 Dec 95	Base Memorandum Concerning Comments on Phase II, Work Plan, Site Specific Plans	Bartol, Thomas J AFBCA/OL-E
1587	20 Dec 95	Base Letter to USFWS Concerning Initiation of Formal Closure of Landfill 2	Bartol, Thomas J AFBCA/OL-E
1693	20 Dec 95	CDTSC Letter to Base Concerning Draft Ecological Scoping Assessment and Risk Assessment Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
1585	22 Dec 95	EE/CA, Draft Report, Site 02	CDM Federal Programs Corp.
2695	27 Dec 95	Base Letter to Regulators Concerning Ex-Situ Bioremediation SAP for UST Removal	Bartol, Thomas J AFBCA/OL-E
2741	28 Dec 95	Base Letter to Regulators Concerning Draft Final EE/CA, Site 01	Bartol, Thomas J AFBCA/OL-E
1844	Jan 96	Fact Sheet, Restoration Review, Vol 2, Issue 1, Air Force Remediation Program Treats Source of Contamination	AFBCA/OL-E
2272	Jan 96	RCRA Final Closure Phase II Work Plan for Initial Phase Sampling with Site-Specific Plans, Air Combat Camera Services	Morrison Knudsen Corp.
1603	03 Jan 96	Final Work Plan Addendum No. 2, Basewide Confirmation Study	CDM Federal Programs Corp.
1702	05 Jan 96	Base Letter to IVDA Concerning Response to Comments on Technical Memorandum, Preliminary Results of the Confirmation Study Addendum No. 1	Bartol, Thomas J AFBCA/OL-E
1706	24 Jan 96	CDTSC Letter to Base Concerning Draft Technical Memorandum, Results of the Confirmation Study Addendum No. 1 and Expanded Source Investigation Addendum No. 1 Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
1707	25 Jan 96	Base Letter to RPUD Concerning Response to Comments on Draft Addendum No. 2 to the Final Basewide Confirmation Study Work Plan	Bartol, Thomas J AFBCA/OL-E
2958	26 Jan 96	USFWS Letter to Base Concerning Initiation of Formal Consultation for Closure, Site 2	Kobetich, Gail C US Fish and Wildlife Service
1622	31 Jan 96	Final Data Validation Summary Report, Confirmation Study Addendum No. 1	CDM Federal Programs Corp.
1619	Feb 96	EE/CA, Final Report, Site 01	CH2M Hill
1634	Feb 96	Draft Community Relations Plan (CRP)	AFBCA/OL-E
1646	Feb 96	Draft Final Site Assessment Report, RCRA Closure of the IWTP, Vol I of IV	Tetra Tech, Inc.
1647	Feb 96	Draft Final Site Assessment Report, RCRA Closure of the IWTP, Vol II of IV	Tetra Tech, Inc.
1648 Part 1	Feb 96	Draft Final Site Assessment Report, RCRA Closure of the IWTP, Vol III of IV	Tetra Tech, Inc.
1648 Part 2	Feb 96	Draft Final Site Assessment Report, RCRA Closure of the IWTP, Vol III of IV	Tetra Tech, Inc.
1649	Feb 96	Draft Final Site Assessment Report, RCRA Closure of the IWTP, Vol IV of IV	Tetra Tech, Inc.

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1729	Feb 96	Base Response to Review Comments Concerning Engineering Design Report and SAP Addendum I, Site 05	AFBCA/OL-E
2740	Feb 96	Press Release, Notice of Public Comment Period on the EE/CA for Closure of IRP Site 02	AFBCA/OL-E
3620	01 Feb 96	Base Letter to EPA and CDTSC Concerning Revised Schedules, OU-2, OU-3	Bartol, Thomas J AFBCA/SPEV
1710	02 Feb 96	EPA Letter to Base Concerning Comments on Draft Final EE/CA for Soil Removal at Sites 13, 14, and 22	Kistner, Glenn R EPA Region IX
1715	02 Feb 96	CDTSC Letter to Base Concerning Draft Final EE/CA for Soil Removal, Sites 13, 14, 22	Alonzo, Manuel J California Department of Toxic Substances Control
1711	05 Feb 96	EPA Letter to Base Concerning Comments on Draft EE/CA, Site 02	Kistner, Glenn R EPA Region IX
1712	05 Feb 96	EPA Letter to Base Concerning Comments on EE/CA, Parcel I-3	Kistner, Glenn R EPA Region IX
1739	05 Feb 96	RPUD Letter to Base Concerning Draft Technical Memorandum, Results of the Confirmation Study Addendum No. 1 and EE/CA, Parcel I-3	Panahi, Zahra, Dr Riverside Public Utilities Department
2509	05 Feb 96	Base Letter to CDWR Concerning Submittal of Well Completion Reports	Bartol, Thomas J AFBCA/OL-E
3311	06 Feb 96	CDTSC Letter to Base Concerning Comments on Draft EE/CA, Parcel I-3	Alonzo, Manuel J California Department of Toxic Substances Control
1730	07 Feb 96	CDTSC Letter to Base Concerning Draft Technical Memorandum, Expanded Source Investigation Results	Alonzo, Manuel J California Department of Toxic Substances Control
1747	08 Feb 96	Third Annual Groundwater Data Trends Report and LTM Plan	CDM Federal Programs Corp.
2478	08 Feb 96	Base Letter to EPA and CDTSC Concerning Response to Comments on Draft Ecological Risk Assessment Work Plan	Bartol, Thomas J AFBCA/OL-E
1631	12 Feb 96	SAP Addendum, Site 05	Earth Tech, Inc.
1641	12 Feb 96	Base Letter to Regulators Concerning ITIR, Groundwater Sampling and Analysis, Round 2, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
1732	13 Feb 96	CDTSC Letter to Base Concerning Draft EE/CA, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
1713	14 Feb 96	EPA Memorandum Concerning Review of EE/CA, Site 01	Levine, Herbert EPA Region IX
2694	14 Feb 96	CRWQCB Letter to Base Concerning Review of Ex-Situ Bioremediation SAP for UST Removal	Broderick, John C California Regional Water Quality Control Board
1714	16 Feb 96	EPA Comments on Draft Final Interim ROD, Site 19	Kistner, Glenn R EPA Region IX
1951	22 Feb 96	CDTSC Letter to Base Concerning Approval of Proposal for Monitoring Well Location, Request for SAP and Work Plan for Well Installation	Rege, D R California Department of Toxic Substances Control
3190	22 Feb 96	Base Letter to Regulators Concerning Responses to EPA Comments on EE/CA, Sites 13, 14, 22	Bartol, Thomas J AFBCA/OL-E
1738	28 Feb 96	CRWQCB Letter to Base Concerning Clarification of Meeting Issues on Biocell B Sampling, UST Removal	Broderick, John C California Regional Water Quality Control Board

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1640	Mar 96	EE/CA, Final Soil Removal, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
1645	Mar 96	Draft Basewide Soil Characterization Report, Basewide Radionuclide Characterization	IT Corp.
1665	Mar 96	Action Memorandum, Decision Document, Site 01	CH2M Hill
1666	Mar 96	Action Memorandum, Decision Document, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
2803	01 Mar 96	EE/CA, Final Report, Parcel I-3, Site 8, AOCs 37, 38	CDM Federal Programs Corp.
1635	04 Mar 96	Technical Memorandum Report, Results of Confirmation Study Addendum No. 1 and Expanded Source Investigation Addendum No. 1 Work Plan	CDM Federal Programs Corp.
1701	04 Mar 96	Base Letter to CDWR Concerning Submittal of Well Completion Reports	Bartol, Thomas J AFBCA/OL-E
1720	04 Mar 96	Tom Dodson and Associates Letter to Base Concerning Review Comments for EE/CA, Site 02	Dodson, Tom Tom Dodson and Associates
1717	07 Mar 96	RPUD Letter to Base Concerning Addendum No. 1 to Final Technical Memorandum, Proposed Well Abandonment and Repair Plan	Panahi, Zahra, Dr Riverside Public Utilities Department
2688	07 Mar 96	Base Letter to EPA and CDTSC Concerning Response to Comments on EE/CA, Draft Final Report, Parcel I-3	Bartol, Thomas J AFBCA/OL-E
2696	07 Mar 96	Base Letter to CDTSC Concerning Monitoring Well Location Work Plan and SAP, Air Combat Camera Services	Bartol, Thomas J AFBCA/OL-E
2697	07 Mar 96	Base Letter to CDTSC Concerning Schedule and Requirements for Closure of Air Combat Camera Services	Bartol, Thomas J AFBCA/OL-E
2681	11 Mar 96	CDTSC Letter to Base Concerning Comments on FFA Schedule Revisions	Scandura, John E California Department of Toxic Substances Control
1639	14 Mar 96	Engineering Design Report, Work Plan, SVE, Site 05	Earth Tech, Inc.
2497	15 Mar 96	RPM Meeting Minutes, 13 Mar 96	Bartol, Thomas J AFBCA/OL-E
1749	18 Mar 96	CDTSC Letter to Base Concerning Draft CRP	Best, Claire, T California Department of Toxic Substances Control
1659	19 Mar 96	NFRAP, Draft Final Decision Document, Sites 07, 11, 15, 18	AFBCA/OL-E
2670	21 Mar 96	Base Letter to Regulators Concerning Draft Fact Sheet 14, Bioremediation	Bartol, Thomas J AFBCA/OL-E
2677	21 Mar 96	Base Letter to EPA and CDTSC Concerning Action Memorandum, Parcel I-3	Bartol, Thomas J AFBCA/OL-E
2680	23 Mar 96	EPA Letter to Base Concerning FFA Schedule Revisions, Approval of Use of EE/CAs to Accelerate Cleanup	Anderson, Julie EPA Region IX
2728	26 Mar 96	Base Letter to Regulators Concerning Draft Basewide Soil Characterization Report, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
2686	27 Mar 96	EPA Letter to Base Concerning Draft Final EE/CA, Parcel I-3	Kistner, Glenn R EPA Region IX
2687	27 Mar 96	CDTSC Letter to Base Concerning Draft Final EE/CA, Parcel I-3	Alonzo, Manuel J California Department of Toxic Substances Control
3530	27 Mar 96	HSP, Addendum II, Site 05	Earth Tech, Inc.
2678	28 Mar 96	Base Letter to EPA and CDTSC Concerning Action Memorandum, Site 02	Bartol, Thomas J AFBCA/OL-E

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1657	29 Mar 96	Draft Work Plan, Radiological Investigation of Sanitary Sewer	CDM Federal Programs Corp.
1840	Apr 96	Fact Sheet No. 14, Bioremediation	AFBCA/PA
1778	02 Apr 96	Final Action Memorandum, Decision Document, Parcel I-3	CDM Federal Programs Corp.
1653	03 Apr 96	Final Data Validation Summary Report, Confirmation Study	CDM Federal Programs Corp.
1660	03 Apr 96	EE/CA, Draft Final Report, Site 02	CDM Federal Programs Corp.
1728	04 Apr 96	EPA Letter to Base Concerning Integrated Work Plans for Basewide Soil Characterization	Kistner, Glenn R EPA Region IX
1773	04 Apr 96	Draft SVE Treatability Study, Site 02	CDM Federal Programs Corp.
1918	08 Apr 96	CDTSC Memorandum Concerning Draft Fact Sheet 14, Bioremediation	Best, Claire, T California Department of Toxic Substances Control
2512	09 Apr 96	Base Letter to CDTSC Concerning Schedule for RCRA Closure of the IWL	Bartol, Thomas J AFBCA/OL-E
2685	15 Apr 96	Base Letter to CDTSC Concerning Response to Comments Draft Work Plan and SAP for Installation of MW 298 and Groundwater Sampling of Wells Monitoring the Air Combat Camera Services	Bartol, Thomas J AFBCA/OL-E
2698	15 Apr 96	Base Letter to EPA and CDTSC Concerning DoD Information	Bartol, Thomas J AFBCA/OL-E
1774	17 Apr 96	NFRAP, Final Decision Document, Sites 07, 11, 15, 18	AFBCA/OL-E
2525	18 Apr 96	Base Letter to EPA and CDTSC Concerning Draft SVE Treatability Study, Site 02	Bartol, Thomas J AFBCA/OL-E
3312	22 Apr 96	Final Action Memorandum, Decision Document, Sites 13, 14, 22	Ogden Environmental and Energy Services, Inc.
1642	24 Apr 96	Base Letter to Regulators Transmitting Draft Landfill Closure Design Fieldwork Report, Site 02	Bartol, Thomas J AFBCA/OL-E
1667	25 Apr 96	Work Plan, FSP for Installation of Groundwater Sampling of Wells, Air Combat Camera Services Unit, Rev 2, MW298	CDM Federal Programs Corp.
1726	25 Apr 96	EPA Letter to Base Concerning Draft Work Plan for Radiological Investigation of the Sanitary Sewer	Kistner, Glenn R EPA Region IX
2684	25 Apr 96	CDTSC Letter to Base Concerning Approval of Draft Work Plan and SAP for Installation of MW 298 and Groundwater Sampling of Wells Monitoring the Air Combat Camera Services Unit	Rege, D R California Department of Toxic Substances Control
1727	30 Apr 96	CDTSC Letter to Base Concerning Draft Final EE/CA, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
1785	30 Apr 96	Final Action Memorandum, Decision Document, Site 02	CDM Federal Programs Corp.
1793	May 96	Draft Removal Action Work Plan, Soil Removal, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
1795	May 96	Draft Bench-Scale Test Plan and Bench-Scale Test SAP, Site 13	Ogden Environmental and Energy Services, Inc.
1798	May 96	Draft Engineering Design Report, Work Plan, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Earth Tech, Inc.
1800	May 96	Removal Actions, FSP, QAPP, HSP, Construction Quality Control Plan, Parcels I-3, B-1, B-3	Bechtel Environmental, Inc.

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1803	May 96	Update Pages, Final ITIR, Groundwater Sampling and Analysis, Round 2, Basewide Radionuclide Characterization	IT Corp.
1809	May 96	Draft Closure Certification Report, Air Combat Camera Services, Vol I of II	Morrison Knudsen Corp.
1810	May 96	Draft Closure Certification Report, Air Combat Camera Services, Vol II of II, Appendices A-I	Morrison Knudsen Corp.
1829	May 96	Draft Final Community Relations Plan (CRP)	AFBCA/OL-E
2733	02 May 96	Base Letter to EPA and CDTSC Concerning Action Memorandum, Site 02	Bartol, Thomas J AFBCA/OL-E
1455	03 May 96	Base Letter to EPA and CDTSC Concerning Draft EE/CA, Site 17	Bartol, Thomas J AFBCA/OL-E
1787	03 May 96	EE/CA, Draft Report, Site 17	CDM Federal Programs Corp.
3774	03 May 96	Base Letter to CDTSC Concerning Response to Comments on Fact Sheet, Bioremediation	Bartol, Thomas J AFBCA/SPEV
1748	06 May 96	Draft Proposed Plan, Site 19	AFBCA/OL-E
1814	07 May 96	Technical Memorandum Report, Expanded Source Investigation Results	CDM Federal Programs Corp.
1796	08 May 96	Base Letter to Regulators Transmitting Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
1687	13 May 96	CDTSC Letter to Base Concerning Draft Work Plan for Radiological Investigation of the Sanitary Sewer	Alonzo, Manuel J California Department of Toxic Substances Control
2510	13 May 96	Base Letter to CDWR Concerning Submittal of Well Completion Reports	Bartol, Thomas J AFBCA/OL-E
2469	15 May 96	Base Letter to CDWR and CDHS Concerning Well Completion Report Forms and County Well Permit Forms	Bartol, Thomas J AFBCA/OL-E
1858	16 May 96	USFWS Letter to Base Concerning Biological Opinion on the Closure of Landfill 2	Kobetich, Gail C US Fish and Wildlife Service
1746	22 May 96	CDTSC Letter to Base Concerning Draft Basewide Soil Characterization Report, Basewide Radionuclide Characterization	Alonzo, Manuel J California Department of Toxic Substances Control
1890	30 May 96	Base Letter to USFWS Concerning Biological Opinion on the Closure of Landfill 2	Bartol, Thomas J AFBCA/OL-E
1804	Jun 96	Draft Closure Report, Former UST at Bldg 647, Site 06	Bechtel Environmental, Inc.
1813	Jun 96	ITIR, Biocell Characterization Summary for Soil Disposition	Bechtel Environmental, Inc.
1845	Jun 96	Fact Sheet, Restoration Review, Vol 2, Issue 2, Groundwater - One of America's Hidden Treasures	AFBCA/OL-E
1815	03 Jun 96	Draft Final Work Plan, Ecological Scoping Assessment and Risk Assessment	CDM Federal Programs Corp.
1891	03 Jun 96	CDTSC Letter to Base Concerning CRP	Best, Claire T California Department of Toxic Substances Control
1806	06 Jun 96	Draft Removal Action Work Plan, FSP, QAPP, HSP, Site 01	CH2M Hill
1808	06 Jun 96	EE/CA, Draft Report, AOC-44, Sites 10, 12	CDM Federal Programs Corp.
753	07 Jun 96	Base Letter to EPA and CDTSC Concerning Draft EE/CA, AOC 44, Sites 10, 12	Bartol, Thomas J AFBCA/OL-E

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3416	07 Jun 96	Base Letter to EPA and CDTSC Concerning Draft Final Ecological Risk Assessment Work Plan	Bartol, Thomas J AFBCA/SPEV
3821	09 Jun 96	Newspaper Article, "Notice of Public Comment Period on EE/CA for a Non-Time Critical Removal Action for the IWTP/IRP Site 17 Perched Zone Groundwater"	The Riverside Press-Enterprise
1892	11 Jun 96	Base Letter to USACE Concerning Changes to Draft Closure Certification Report, Air Combat Camera Services Unit	Bartol, Thomas J AFBCA/OL-E
1816	14 Jun 96	Draft Final Work Plan Radiological Investigation of the Sanitary Sewer	CDM Federal Programs Corp.
2683	17 Jun 96	Base Letter to CDTSC Concerning Comments on Draft Final Interim ROD, Site 19	Bartol, Thomas J AFBCA/OL-E
669	18 Jun 96	Base Letter to EPA and CDTSC Concerning Draft Final Work Plan for Radiological Investigation of the Sanitary Sewer	Bartol, Thomas J AFBCA/OL-E
1894	19 Jun 96	CDTSC Letter to Base Concerning Draft SVE Treatability Study for Landfill 2	Alonzo, Manuel J California Department of Toxic Substances Control
1753	20 Jun 96	CDTSC Letter to Base Concerning Proposed Plan, Site 19	Best, Claire, T California Department of Toxic Substances Control
1827	20 Jun 96	Base Letter to Regulators Concerning Basewide Soil Characterization Report, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
1895	20 Jun 96	CDTSC Letter to Base Concerning Comments on Draft Bench-Scale Test Plan and Bench-Scale Test SAP, Site 13	Alonzo, Manuel J California Department of Toxic Substances Control
1896	20 Jun 96	EPA Letter to Base Concerning Comments on Draft SVE Treatability Study, Site 02	Kistner, Glenn R EPA Region IX
3313	21 Jun 96	Consulting Engineer Letter to Base Concerning Comments on EE/CA, Site 17	Sonnen, Michael B, PhD Michael B. Sonnen, Consulting Engineer
1760	24 Jun 96	CDTSC Letter to Base Concerning Draft Landfill Closure Design, Draft Technical Memorandum, Fieldwork Report, Investigation in Support of Design, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
1899	26 Jun 96	EPA Letter to Base Concerning Bench-Scale Test Plan and Bench-Scale Test SAP, Site 13	Kistner, Glenn R EPA Region IX
1920	26 Jun 96	CDTSC Letter to Base Concerning Draft Work Plan and Related Documents for Removal Actions	Alonzo, Manuel J California Department of Toxic Substances Control
1936	27 Jun 96	CDTSC Letter to Base Concerning Draft Removal Action Work Plan for Soil Removal, Sites 13, 14	Scandura, John E California Department of Toxic Substances Control
2483	28 Jun 96	SBIAA Letter to Base Concerning Draft Bench-Scale Work Plans, SAP, Site 13	Rohrer, James E San Bernardino International Airport Authority
2484	28 Jun 96	SBIAA Letter to Base Concerning Draft Work Plan and Related Documents for Removal Actions, Parcel I-3	Rohrer, James E San Bernardino International Airport Authority

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2485	28 Jun 96	SBIAA Letter to Base Concerning Draft NFRAP, Sites 03, 04	Rohrer, James E San Bernardino International Airport Authority
1830	Jul 96	Draft Final Community Relations Plan (CRP)	AFBCA/OL-E
1866	Jul 96	Final Technical Memorandum, Field Work Report for Landfill Closure Design	IT Corp.
1914	Jul 96	Bench-Scale Test Plan and Bench-Scale Test SAP, Site 13	Ogden Environmental and Energy Services, Inc.
1959	Jul 96	Closure Certification Report, Air Combat Camera Services, Vol I of II	Morrison Knudsen Corp.
1960	Jul 96	Closure Certification Report, Air Combat Camera Services, Vol II of II, Appendices A-I	Morrison Knudsen Corp.
2138 Part 1	Jul 96	Final Closure Certification Report, Complete Analytical Data Package Vol I-III, Air Combat Camera Services	Morrison Knudsen Corp.
2138 Part 2	Jul 96	Final Closure Certification Report, Complete Analytical Data Package Vol I-III, Air Combat Camera Services	Morrison Knudsen Corp.
2138 Part 3	Jul 96	Final Closure Certification Report, Complete Analytical Data Package Vol I-III, Air Combat Camera Services	Morrison Knudsen Corp.
2138 Part 4	Jul 96	Final Closure Certification Report, Complete Analytical Data Package Vol I-III, Air Combat Camera Services	Morrison Knudsen Corp.
1933	01 Jul 96	CDTSC Letter to Base Concerning Draft Engineering Design, Work Plan for Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
1934	01 Jul 96	CDTSC Letter to Base Concerning Draft EE/CA for Perched Zone Groundwater, Site 17	Alonzo, Manuel J California Department of Toxic Substances Control
1935	01 Jul 96	CDTSC Letter to Base Concerning Draft Decision Document to Support NFRAP, Sites 03, 04	Alonzo, Manuel J California Department of Toxic Substances Control
1765	02 Jul 96	EPA Letter to Base Concerning Review of Proposed Plan, Site 19	Kistner, Glenn R EPA Region IX
1769	02 Jul 96	CDTSC Letter to Base Concerning Draft Final Site Assessment Report, RCRA Closure of the IWTP	Arellano, Albert, A, Jr California Department of Toxic Substances Control
1931	02 Jul 96	EPA Letter to Base Concerning Review of Draft Decision Document to Support NFRAP, Sites 03, 04	Kistner, Glenn R EPA Region IX
1932	02 Jul 96	EPA Letter to Base Concerning Work Plan and Related Documents	Kistner, Glenn R EPA Region IX
1923	03 Jul 96	EPA Letter to Base Concerning Comments on Engineering Design Report, Work Plan for Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Kistner, Glenn R EPA Region IX
1924	03 Jul 96	EPA Letter to Base Concerning Review of Draft EE/CA for Perched Zone Groundwater, Site 17	Kistner, Glenn R EPA Region IX
3318	03 Jul 96	Base Response to EPA and CDTSC Comments on Draft Engineering Design Report, Removal Action for Dioxins, Metals, and PAHs, Site 05	AFBCA/SPEV
1860	05 Jul 96	Base Letter to Regulators Concerning Comments on Draft Bench-Scale Work Plan, SAP, Site 13	Bartol, Thomas J AFBCA/OL-E
1925	08 Jul 96	CRWQCB Letter to Base Concerning Review of ITIR for Biocell Characterization Summary	Broderick, John C California Regional Water Quality Control Board

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4121	08 Jul 96	CDFG Letter to Manny Alonzo CDTSC Concerning Draft Final Ecological Scoping Assessment and Risk Assessment Work Plan	Flint, Scott A California Department of Fish and Game
1859	09 Jul 96	Base Letter to USFWS Concerning Biological Opinion on the Closure of Landfill 2	Bartol, Thomas J AFBCA/OL-E
1926	09 Jul 96	CDTSC Letter to Base Concerning Draft Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization	Alonzo, Manuel J California Department of Toxic Substances Control
3773	09 Jul 96	Base Letter to Regulators Concerning Response to Comments on Draft Final CRP	Bartol, Thomas J AFBCA/SPEV
1786	11 Jul 96	NFRAP, Draft Final Decision Document, Sites 03, 04	AFBCA/OL-E
2475	11 Jul 96	NFRAP, Draft Final Decision Document, Sites 03, 04	AFBCA/OL-E
1835	12 Jul 96	Base Letter to EPA and CDTSC Concerning Proposed Plan, Site 19	Bartol, Thomas J AFBCA/OL-E
1927	12 Jul 96	CDTSC Letter to Base Concerning Review Extension for Draft Final Ecological Scoping Assessment and Risk Assessment Work Plan	Alonzo, Manuel J California Department of Toxic Substances Control
1928	15 Jul 96	CDTSC Letter to Base Concerning Draft Final Work Plan for Radiological Investigation of the Sanitary Sewer	Arellano, Albert A, Jr California Department of Toxic Substances Control
1861	16 Jul 96	Final SVE Treatability Study, Site 02	CDM Federal Programs Corp.
3772	17 Jul 96	EPA Letter to Base Concerning Additional Comments on Draft Final Bench Scale Test Plan and SAP, Site 13	Kistner, Glenn R EPA Region IX
1929	18 Jul 96	Base Letter to CDTSC Concerning Draft Final Work Plan for Radiological Investigation of the Sanitary Sewer	Bartol, Thomas J AFBCA/OL-E
1867	22 Jul 96	Base Letter to Regulators Concerning Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
1877	22 Jul 96	Base Letter to Regulators Concerning Bench-Scale Test Plan, Site 13	Bartol, Thomas J AFBCA/OL-E
1944	23 Jul 96	CDTSC Letter to Base Concerning Draft Final Basewide Soil Characterization Report, Basewide Radionuclide Characterization	Scandura, John E California Department of Toxic Substances Control
2744	23 Jul 96	Base Letter to EPA and CDTSC Concerning Landfill Gas Migration Investigation Technical Memorandum, Site 02	Bartol, Thomas J AFBCA/OL-E
1874	24 Jul 96	Draft Technical Memorandum Report, Landfill Gas Migration Investigation, Site 02	CDM Federal Programs Corp.
1955	30 Jul 96	CDTSC Letter to Base Concerning Draft Removal Action Work Plan, SAP, Sites 13, 14	Rohrer, James E San Bernardino International Airport Authority
1900	31 Jul 96	Base Letter to Regulators Concerning Draft Work Plans for Removal Actions	Bartol, Thomas J AFBCA/OL-E
1878	Aug 96	Final Basewide Soil Characterization Report, Basewide Radionuclide Characterization	IT Corp.
2709	Aug 96	Final Community Relations Plan (CRP)	AFBCA/OL-E
1879	01 Aug 96	NFRAP, Final Decision Document, Sites 03, 04	CDM Federal Programs Corp.
2520	02 Aug 96	Base Letter to EPA Concerning Comments on QAPP, Parcel I-3	Bartol, Thomas J AFBCA/OL-E
3771	02 Aug 96	Base Letter to Regulators Concerning Response to EPA Comments on Bench Scale Test Plan, SAP, Site 13	Bartol, Thomas J AFBCA/OL-E

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3770	05 Aug 96	CDTSC Letter to Base Concerning Comments on Removal Action, Draft Work Plan, FSP, QAPP, Site 01	Alonzo, Manuel J California Department of Toxic Substances Control
1902	06 Aug 96	CDTSC Letter to Base Concerning Draft EE/CA, AOC-44, Sites 10, 12	Alonzo, Manuel J California Department of Toxic Substances Control
1903	07 Aug 96	EPA Letter to Base Concerning Comments on Draft EE/CA, AOC-44, Sites 10, 12	Kistner, Glenn R EPA Region IX
3768	07 Aug 96	EPA Letter to Base Concerning Comments on Removal Action Work Plan, FSP, QAPP, HSP, Site 01	Kistner, Glenn R EPA Region IX
3769	07 Aug 96	EPA Letter to Base Concerning Comments on Draft Site Specific SAP, Sites 13, 14	Kistner, Glenn R EPA Region IX
2141	08 Aug 96	CDTSC Letter to Base Concerning Conditional Acceptance of Final Closure of the IWTP	Kou, Jose California Department of Toxic Substances Control
3419	08 Aug 96	Base Response to CDTSC Comments on Draft Final Sanitary Sewer Radiological Investigation Work Plan	AFBCA/SPEV
3767	08 Aug 96	EPA Letter to Base Concerning Approval of Bench Scale Test Plan and SAP, Site 13	Kistner, Glenn R EPA Region IX
3766	13 Aug 96	CDTSC Letter to Base Concerning No Comments on Draft Final CRP	Best, Claire T California Department of Toxic Substances Control
1905	28 Aug 96	Community Meeting Minutes, Proposed Plan, Site 19, 27 Aug 96	Shaw, Patricia A Shaw Deposition Services
2474	28 Aug 96	Base Letter to Regulators Concerning Response to Additional Questions from CDHS on Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
1907	29 Aug 96	Base Letter to EPA and CDTSC Concerning Draft Final EE/CA, AOC-44, Sites 10, 12	Bartol, Thomas J AFBCA/OL-E
1847	Sep 96	Fact Sheet, Restoration Review, Vol 2, Issue 4, Air Combat Camera Services Closure Nearly Completed	AFBCA/OL-E
1848	Sep 96	Fact Sheet, Restoration Review, Vol 2, Issue 5, IRP Site Remedies on Track	AFBCA/DD Norton
1913	Sep 96	Fact Sheet, Restoration Review, Vol 2, Issue 6, Air Force and Regulators Concur that Norton TCE Remedy is Operating Properly and Successfully	AFBCA/OL-E
1950	Sep 96	Removal Actions at Parcels I-3, B-1, B-3, Work Plan, FSP, QAPP, HSP, Construction Quality Control Plan	Bechtel Environmental, Inc.
1957	Sep 96	Draft Final Removal Action Work Plan, FSP, QAPP, HSP, Site 01	CH2M Hill
2054	04 Sep 96	Newspaper Article, "Norton Air Force Base Notice of Public Comment Period on the EE/CA for AOC-44, IRP Sites 10, 12"	The San Bernardino Sun
1908	05 Sep 96	Work Plan, Radiological Investigation of Sanitary Sewer	CDM Federal Programs Corp.
1910	05 Sep 96	Base Letter to Regulators Concerning Draft Final Removal Action Work Plan, QAPP, HSP, Site 01	Bartol, Thomas J AFBCA/OL-E
1911	06 Sep 96	Base Letter to Regulators Concerning Draft Final Removal Action Work Plan, Soil Removal, Sites 13, 14	Bartol, Thomas J AFBCA/OL-E
1917	09 Sep 96	Base Letter to Regulators Concerning Draft Final Work Plan and Related Documents	Bartol, Thomas J AFBCA/OL-E

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1937	16 Sep 96	EE/CA, Draft Final Report, Site 17	CDM Federal Programs Corp.
1938	16 Sep 96	Draft Technical Memorandum Report, Data Summary Supporting Document for Perched Zone Groundwater EE/CA, Site 17	CDM Federal Programs Corp.
2010	16 Sep 96	EPA Letter to Base Concerning Reconciliation of Proposed Work with the Suggested Needs for Completing the Ecological Risk Assessment	Kistner, Glenn R EPA Region IX
2016	16 Sep 96	SBIAA Letter to Base Concerning Draft Final Removal Action Plan, Soil Removal, Sites 13, 14	Rohrer, James E San Bernardino International Airport Authority
2017	16 Sep 96	SBIAA Letter to Base Concerning Draft Final EE/CA, AOC-44, Sites 10, 12	Rohrer, James E San Bernardino International Airport Authority
1940	17 Sep 96	Technical Memorandum Report, Evaluation of Removal Action Alternatives Excavation of Dioxins, Metals and PAHs, Site 05	Earth Tech, Inc.
2476	17 Sep 96	Base Letter to EPA and CDTSC Concerning Ecological Risk Assessment	Bartol, Thomas J AFBCA/OL-E
2521	17 Sep 96	Base Letter to EPA Concerning Comments on QAPP, Parcel I-3	Bartol, Thomas J AFBCA/OL-E
2467	24 Sep 96	Base Letter to CDTSC Concerning Draft Deed Restriction Covenant for the IWTP	Bartol, Thomas J AFBCA/OL-E
2804	25 Sep 96	EE/CA, Final Report, Site 02	CDM Federal Programs Corp.
1939	27 Sep 96	Draft Action Memorandum, Decision Document, Perched Zone Groundwater, Site 17	CDM Federal Programs Corp.
2018	27 Sep 96	CDTSC Letter to Base Concerning Closure Period Extension for Air Combat Camera Services	Kou, Jose California Department of Toxic Substances Control
2019	27 Sep 96	SBIAA Letter to Base Concerning Draft Landfill Gas Migration Investigation Technical Memorandum, Site 02	Rohrer, James E San Bernardino International Airport Authority
2206	30 Sep 96	EPA Letter to Base Concerning Review and Amendment of QAPP for Federal Facility Cleanup Sites	Opalski, Dan EPA Region IX
1961	Oct 96	Final Removal Action Work Plan, Soil Removal, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
1966	Oct 96	Final Removal Action Work Plan, FSP, QAPP, HSP, Site 01	CH2M Hill
1969	Oct 96	Fact Sheet, Restoration Review, Vol 2, Issue 7, JP-4 Fuel System Takes its Place in History	AFBCA/OL-E
3193	Oct 96	Update Pages, Final Removal Action Work Plan, FSP, QAPP, HSP, Site 01	CH2M Hill
2023	01 Oct 96	EPA Letter to Base Concerning Draft Final Removal Action Work Plan, FSP, QAPP, and HSP, Site 01	Kistner, Glenn R EPA Region IX
1999	02 Oct 96	CDTSC Letter to Base Concerning Draft Technical Memorandum for Landfill Gas Migration Investigation, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
2000	02 Oct 96	CDTSC Letter to Base Concerning Draft Final Removal Action Work Plan, Site 01	Arellano, Albert A, Jr California Department of Toxic Substances Control

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2024	02 Oct 96	Base Letter to EPA and CDTSC Concerning Draft Ecological Risk Assessment	Bartol, Thomas J AFBCA/OL-E
2341	02 Oct 96	Base Letter to EPA and CDTSC Concerning IWTP Perched Zone Documents, Site 17	Bartol, Thomas J AFBCA/OL-E
2452	02 Oct 96	CDTSC Letter to Base Concerning Draft Technical Memorandum, Expanded Source Investigation Addendum No. 1	Alonzo, Manuel J California Department of Toxic Substances Control
2001	03 Oct 96	CDTSC Letter to Base Concerning Draft Final EE/CA, AOC-44, Sites 10, 12	Arellano, Albert A, Jr California Department of Toxic Substances Control
2480	03 Oct 96	CDTSC Facsimile to Base Concerning Draft Removal Action Work Plan, Soil Removal, Sites 13, 14	Alonzo, Manuel J California Department of Toxic Substances Control
1948	04 Oct 96	Summary Report for Installation of MW298 and Groundwater Sampling of Wells Monitoring the Air Combat Camera Services Unit	CDM Federal Programs Corp.
2161	07 Oct 96	Draft Action Memorandum, Decision Document, AOC-44, Sites 10, 12	CDM Federal Programs Corp.
2026	09 Oct 96	Base Letter to CDTSC Concerning Request for Extension to the Air Combat Camera Services 180-day Closure Requirement	Bartol, Thomas J AFBCA/OL-E
2504	11 Oct 96	ROD, Interim, Site 19	CDM Federal Programs Corp.
2028	13 Oct 96	EPA Letter to Base Concerning Approval of Draft Final EE/CA, AOC-44, Sites 10, 12	Kistner, Glenn R EPA Region IX
2029	15 Oct 96	Base Letter to CDTSC Concerning Draft Engineering Design Report, Work Plan, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Bartol, Thomas J AFBCA/OL-E
3423	15 Oct 96	Update Pages, Draft Final Removal Action Work Plan, FSP, QAPP, HSP, Site 01	CH2M Hill
2035	17 Oct 96	EPA Letter to Base Concerning Draft Final Removal Action Work Plan and SAP for Soil Removal, Sites 13, 14	Kistner, Glenn R EPA Region IX
2930	17 Oct 96	CRWQCB Letter to CDTSC Concerning Review of Draft Final EE/CA, Site 17	Broderick, John C California Regional Water Quality Control Board
2034	21 Oct 96	EPA Letter to Base Concerning Draft Final Removal Action Work Plan, FSP, QAPP, and HSP, Site 01	Kistner, Glenn R EPA Region IX
1965	22 Oct 96	Base Letter to EPA Concerning Basewide Radionuclide Characterization	Bartol, Thomas J AFBCA/OL-E
2005	28 Oct 96	CDTSC Letter to Base Concerning Technical Memorandum for Evaluation of Removal Action Alternatives Excavation of Dioxins, Metals and PAHs, Site 05	Arellano, Albert A, Jr California Department of Toxic Substances Control
2042	28 Oct 96	Base Letter to Palm Meadows Golf Course Concerning Environmental Removal Action, Golf Course Hole No. 10, Site 01	Bartol, Thomas J AFBCA/OL-E
2072	28 Oct 96	CDTSC Letter to Base Concerning Draft Deed Restriction Covenant for the IWTP	Okuda, Ronald California Department of Toxic Substances Control
2144	30 Oct 96	Technical Memorandum, Groundwater Sampling Data Results Summary Report, Air Combat Camera Services Unit, Jul 96	CDM Federal Programs Corp.

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2045	31 Oct 96	CDTSC Letter to Base Concerning Deadline Extension on Draft Final EE/CA for Perched Zone Groundwater, Site 17	Alonzo, Manuel J California Department of Toxic Substances Control
1976	Nov 96	Fact Sheet, Restoration Review, Vol 2, Issue 8, Environmental Cleanup at World Trade Center Site Nearing Completion	AFBCA/DD Norton
1987	04 Nov 96	EPA Letter to Base Concerning Technical Memorandum for Evaluation of Removal Action Alternatives Excavation of Dioxins, Metals and PAHs, Site 05	Kistner, Glenn R EPA Region IX
1984	13 Nov 96	Final Technical Memorandum Report, Landfill Gas Migration Investigation, Site 02	CDM Federal Programs Corp.
1272	14 Nov 96	Base Letter to EPA and CDTSC Concerning Draft Ecological Risk Assessment Report	Bartol, Thomas J AFBCA/DD Norton
1977	14 Nov 96	EE/CA, Final Report, AOC-44, Sites 10, 12	CDM Federal Programs Corp.
1985	14 Nov 96	Draft Ecological Risk Assessment Study	CDM Federal Programs Corp.
2909	15 Nov 96	CDTSC Memorandum Concerning Comments on EE/CA, IWTP Perched Zone Groundwater, Site 17	Wade, Michael J California Department of Toxic Substances Control
2910	15 Nov 96	CDTSC Memorandum Concerning Comments and Data on Draft Final EE/CA, IWTP Perched Zone Groundwater, Site 17	Gonzales, Frank California Department of Toxic Substances Control
1993	18 Nov 96	CDTSC Letter to Base and EPA Concerning Informal Dispute Resolution on Draft Final EE/CA for Perched Zone Groundwater, Site 17	Arellano, Albert A, Jr California Department of Toxic Substances Control
2143	19 Nov 96	EPA Letter to Base Concerning Comments on Interim ROD, Site 19	Kistner, Glenn R EPA Region IX
2457	19 Nov 96	CDTSC Letter to Base Concerning Class I Permit Modification to Extend Closure Period for the Air Combat Camera Services	Kou, Jose California Department of Toxic Substances Control
2458	25 Nov 96	EPA Letter to Base Concerning Draft Action Memorandum, AOC-44, Sites 10, 12	Kistner, Glenn R EPA Region IX
1996	26 Nov 96	USFWS Letter to Base Concerning Biological Opinion on the Closure of Landfill 2	Kobetich, Gail C US Fish and Wildlife Service
2064	Dec 96	ITIR, Second Biocell Characterization Summary for Soil Disposition	Bechtel Environmental, Inc.
3320	Dec 96	Fact Sheet No. 15, Remediation of Former Fire Training Area	AFBCA/SPEV
2047	03 Dec 96	Base Letter to Regulators Concerning Engineering Design Report, Work Plan, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Bartol, Thomas J AFBCA/DD Norton
2049	03 Dec 96	Base Letter to Regulators Concerning Work Plan, Remediation of Lead-Contamination Soil, Small Arms Range	Bartol, Thomas J AFBCA/DD Norton
2078	03 Dec 96	Base Letter to EPA and CDTSC Concerning Informal Dispute Resolution on Draft Final EE/CA for Perched Zone Groundwater, Site 17	Bartol, Thomas J AFBCA/DD Norton
3321	03 Dec 96	EE/CA, Final Report, AOC 44, Sites 10, 12	CDM Federal Programs Corp.
2127	05 Dec 96	CDTSC Letter to Base Concerning Working Meeting to Produce Revised Draft Final EE/CA for Perched Zone Groundwater, Site 17	California Department of Toxic Substances Control

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3024	05 Dec 96	CDTSC Letter to Base Concerning Working Meeting to Produce Revised Draft Final EE/CA, IWTP Perched Zone Groundwater, Site 17	Alonzo, Manuel J California Department of Toxic Substances Control
2080	06 Dec 96	Base Letter to EPA Concerning Comments on Interim ROD, Site 19	Bartol, Thomas J AFBCA/DD Norton
2073	10 Dec 96	Base Letter to Distribution Concerning Public Notice of Class I Permit Modification	Bartol, Thomas J AFBCA/DD Norton
2056	19 Dec 96	Base Letter to EPA and CDTSC Concerning Meeting Minutes for Revision of EE/CA, Site 17	Bartol, Thomas J AFBCA/DD Norton
2059	24 Dec 96	EPA Letter to Base Concerning Comments on Draft Action Memorandum, Work Plan, Small Arms Range; and Engineering Design Report, Work Plan, RA, Site 05	Lucey, John EPA Region IX
2051	31 Dec 96	CDTSC Letter to Base Concerning Acceptance of Class I Permit Modification to Extend Closure Period for the Air Combat Camera Services	Rege, D R California Department of Toxic Substances Control
2074	Jan 97	Fact Sheet, Restoration Review, Vol 3, Issue 1, Over 150 Wells Closed at Norton	AFBCA/DD Norton
1277	06 Jan 97	Base Letter to CRWQCB Concerning Disposal of Remediated Soil From Former UST Sites	Bartol, Thomas J AFBCA/DD Norton
2090	13 Jan 97	EPA Letter to Base Concerning Review of Draft Ecological Risk Assessment	Salyer, Kathleen EPA Region IX
2134	14 Jan 97	CDTSC Letter to Base Concerning Draft Action Memorandum, AOC-44, Sites 10, 12	Scandura, John E California Department of Toxic Substances Control
2208	14 Jan 97	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report for Wells Monitoring Air Combat Camera Services, Oct 96	CDM Federal Programs Corp.
2093	17 Jan 97	CRWQCB Letter to Base Concerning Review of the ITIR for Biocell Characterization	Broderick, John C California Regional Water Quality Control Board
2146	20 Jan 97	Data Validation Summary Report, Expanded Source Investigation	CDM Federal Programs Corp.
1380	23 Jan 97	Base Letter to EPA and CDTSC Concerning Revised Draft EE/CA for IWTP Area Perched Groundwater, Site 17	Bartol, Thomas J AFBCA/DD Norton
2094	27 Jan 97	EE/CA, Revised Draft Report, Site 17	CDM Federal Programs Corp.
2098	28 Jan 97	CDTSC Letter to Base Concerning Draft Action Memorandum, Site 05	Scandura, John E California Department of Toxic Substances Control
1797 Part 1	Feb 97	Final Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization, Vol II of II, Appendices C-G	IT Corp.
1797 Part 2	Feb 97	Final Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization, Vol II of II, Appendices C-G	IT Corp.
2101	Feb 97	Final Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization, Vol I of II, Report and Appendices A-B	IT Corp.
2104	Feb 97	Draft Closure Report, Site 08, Four AOCs, and the Heating Oil Line	Bechtel Environmental, Inc.
2108	Feb 97	Draft Landfill Closure and Postclosure Plan, Site 02	IT Corp.
2129	Feb 97	Fact Sheet No. 15, Remediation of Former Fire Training Area	Earth Tech, Inc.

AR IR File Number	Document Date	Subject or Title	Author
2147	01 Feb 97	CDTSC Letter to Base Concerning Draft Work Plan for Remediation of Lead-Contaminated Soil, Small Arms Range	Alonzo, Manuel J California Department of Toxic Substances Control
2148	01 Feb 97	CDTSC Letter to Base Concerning Draft Engineering Design Report, Work Plan, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
3760	03 Feb 97	Base Letter to EPA Concerning Final Basewide Groundwater Characterization Report, Basewide Radionuclide Characterization, Feb 97	Bartol, Thomas J AFBCA/DD Norton
2150	04 Feb 97	CDTSC Letter to Base Concerning Technical Memorandum, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Oct 96	Alonzo, Manuel J California Department of Toxic Substances Control
2109	13 Feb 97	Base Letter to CDTSC Concerning Revised Draft EE/CA for IWTP Perched Groundwater	Bartol, Thomas J AFBCA/DD Norton
2110	13 Feb 97	Base Letter to Regulators Concerning Revised Draft Action Memorandum, Site 05	Bartol, Thomas J AFBCA/DD Norton
2111	13 Feb 97	Revised Draft Action Memorandum, Decision Document, Site 05	Earth Tech, Inc.
2113	13 Feb 97	Conservation Management Plan Meeting Minutes, 13 Feb 97	AFBCA/DD Norton
2276	18 Feb 97	Newspaper Article, "Public Notice, Norton Air Force Base Non-Time-Critical Removal Action, Fire Training Area, Site 05"	The San Bernardino Sun
2123	20 Feb 97	Base Letter to EPA and CDTSC Concerning Resolution of EPA Comments on Interim ROD, Site 19	Bartol, Thomas J AFBCA/DD Norton
2125	20 Feb 97	Base Letter to CDTSC Concerning Closure Approval of Air Combat Camera Services	Bartol, Thomas J AFBCA/DD Norton
2126	20 Feb 97	Base Letter to CDTSC Concerning Closure Approval for the IWTP	Bartol, Thomas J AFBCA/DD Norton
2128	20 Feb 97	Telephone Log with EPA Concerning Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Jul 96, Oct 96	Salyer, Kathleen EPA Region IX
2114	24 Feb 97	Update Pages, Conservation Management Plan Meeting Minutes, 13 Feb 97	AFBCA/DD Norton
2158	24 Feb 97	CDTSC Letter to Base Concerning Draft Land Use Covenant for the IWTP	Okuda, Ronald California Department of Toxic Substances Control
2118	27 Feb 97	CDTSC Letter to Base Concerning Site Closure, Site 08, Four AOCs, and the Heating Oil Line	Thibeault, Gerard J California Department of Toxic Substances Control
2131	27 Feb 97	Base Letter to CDTSC Concerning Feasibility of Using SCAPS Platform, Site 17	Bartol, Thomas J AFBCA/DD Norton
2048	Mar 97	Action Memorandum, Decision Document, Site 05	Earth Tech, Inc.
2183	Mar 97	Fact Sheet, Restoration Review, Vol 3, Issue 2, Cleanup at Norton Nearing Completion	AFBCA/DD Norton
2133	04 Mar 97	Action Memorandum, Decision Document, AOC-44, Sites 10, 12	CDM Federal Programs Corp.
2166	06 Mar 97	CDTSC Letter to Base Concerning Revised Draft EE/CA for IWTP Perched Zone Groundwater, Site 17	Scandura, John E California Department of Toxic Substances Control
2168	07 Mar 97	EPA Letter to Base Concerning Revised Draft EE/CA for IWTP Perched Groundwater, Site 17	Salyer, Kathleen EPA Region IX

AR IR File Number	Document Date	Subject or Title	Author
2169	12 Mar 97	CRWQCB Letter to Base Concerning Review of Closure and Postclosure Plan, Site 02	Broderick, John C California Regional Water Quality Control Board
2174	13 Mar 97	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report for Wells Monitoring the Air Combat Camera Services, Jan 97	CDM Federal Programs Corp.
2177	13 Mar 97	EE/CA, Draft Final Report, Site 17	CDM Federal Programs Corp.
2172	18 Mar 97	CDTSC Letter to Base Concerning Revised Draft Action Memorandum, Site 05	Alonzo, Manuel J California Department of Toxic Substances Control
2193	19 Mar 97	Base Letter to CDTSC Concerning Draft Covenant to Restrict Use of Real Property for the IWTP	Bartol, Thomas J AFBCA/DD Norton
1324	20 Mar 97	Base Letter to EPA and CDTSC Concerning Draft Final EE/CA, IWTP Area Perched Groundwater, Site 17	Bartol, Thomas J AFBCA/DD Norton
2178	20 Mar 97	Base Letter to EPA and CDTSC Concerning Draft Data Summary Report, Radiological Investigation of the Sanitary Sewer	Bartol, Thomas J AFBCA/DD Norton
2182	24 Mar 97	CDTSC Letter to Base Concerning Wipe Samples Reported in Closure Certification Report of the Air Combat Camera Services	Weinstein, Adela California Department of Toxic Substances Control
2186	25 Mar 97	Revised Final Action Memorandum, Decision Document, Site 05	Earth Tech, Inc.
2194	27 Mar 97	CDTSC Letter to Base Concerning Draft Covenant to Restrict Use of Real Property for the IWTP	Okuda, Ronald California Department of Toxic Substances Control
2187	27 Mar 97	Base Letter to CDTSC Concerning Clarification of Wipe Samples Reported in Closure Certification Report of the Air Combat Camera Services	Bartol, Thomas J AFBCA/DD Norton
2210	27 Mar 97	Decision Document, IWTP Perched Zone Groundwater, Site 17	CDM Federal Programs Corp.
2189	28 Mar 97	CDTSC Letter to Base Concerning Closure Certification Acceptance for the Air Combat Camera Services	Kou, Jose California Department of Toxic Substances Control
2190	28 Mar 97	Final Engineering Design Report, Work Plan, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Site 05	Earth Tech, Inc.
2191	28 Mar 97	Final Work Plan for Remediation of Lead-Contaminated Soil, Small Arms Range	Earth Tech, Inc.
2037	Apr 97	Closure Report	Ogden Environmental and Energy Services, Inc.
2212	Apr 97	Fact Sheet, Restoration Review, Vol 3, Issue 3, Groundwater TCE Levels Declining	AFBCA/DD Norton
2196	03 Apr 97	EPA Letter to Base Concerning Review and Amendment of QAPP, Federal Facility Cleanup Sites	Opalski, Dan EPA Region IX
3406	07 Apr 97	CDTSC Letter to Base Concerning Comments on Draft Closure Report	Alonzo, Manuel J California Department of Toxic Substances Control
3429	08 Apr 97	CDTSC Letter to Base Concerning Comments on Draft Landfill Closure and Postclosure Plan, Site 02	Alonzo, Manuel J California Department of Toxic Substances Control
3409	22 Apr 97	EPA Letter to Base Concerning Concurrence with Draft Closure Report	Salyer, Kathleen EPA Region IX

AR IR File Number	Document Date	Subject or Title	Author
3509	22 Apr 97	CDTSC Letter to Base Concerning Request for Review Extension of Draft Final EE/CA, Site 17	Arellano, Albert A, Jr California Department of Toxic Substances Control
2225	30 Apr 97	CDTSC Letter to Base Concerning Closure Certification Acceptance of the IWTP	Kou, Jose California Department of Toxic Substances Control
2218	May 97	Draft Closure Report, Vol II of V, Appendix A, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2219	May 97	Draft Closure Report, Vol III of V, Appendix A, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2220	May 97	Draft Closure Report, Vol IV of V, Appendices B-E, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2221	May 97	Draft Closure Report, Vol V of V, Appendices F-J, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2235	May 97	Draft Closure Report, Vol I of V, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2236	May 97	Fact Sheet, Restoration Review, Vol 3, Issue 4, Former EOD Proficiency Cleared and Ready for Reuse	AFBCA/DD Norton
2217	05 May 97	Base Letter to Regulators Concerning Draft Closure Report, Vol I of V, Sites 13, 14	Bartol, Thomas J AFBCA/DD Norton
2248	09 May 97	Base Letter to Regulators Concerning Administrative Record File Index, Vol III	Bartol, Thomas J AFBCA/DD Norton
2223	12 May 97	Draft Conservation Management Plan	Earth Tech, Inc.
2214	13 May 97	CDTSC Letter to Base Concerning Draft Technical Memorandum, Well Abandonment and Repair Documentation	Alonzo, Manuel J California Department of Toxic Substances Control
2216	14 May 97	CDTSC Letter to Base Concerning Confirmation Sampling, Site 01	Alonzo, Manuel J California Department of Toxic Substances Control
2228	16 May 97	EPA Letter to Base Concerning Review Comments on Draft Landfill Closure and Postclosure Plan, Site 02	Lucey, John EPA Region IX
2238	20 May 97	Base Letter to CDTSC Transmitting Response to Comments and Draft Final Closure Report, Site 08, Four AOCs, and the Heating Oil Line	Bartol, Thomas J AFBCA/DD Norton
2230	21 May 97	CDTSC Letter to Base Concerning Draft Data Summary Report for the Radiological Investigation of the Sanitary Sewer	Alonzo, Manuel J California Department of Toxic Substances Control
2231	23 May 97	CDTSC Letter to Base Concerning Dispute Resolution on Draft Final EE/CA for IWTP Perched Zone Groundwater, Site 17	Scandura, John E California Department of Toxic Substances Control
2233	28 May 97	CDTSC Letter to Base Concerning Non-Acceptance of the Closure Certification Report for the Air Combat Camera Services	Plaza, Allan California Department of Toxic Substances Control
2234	28 May 97	Base Letter to USFWS Concerning Special Status Species Mitigation Plan, Landfill Closure, Site 02	Bartol, Thomas J AFBCA/DD Norton
1699	29 May 97	Base Letter to Regulators Concerning Draft Closure Report, Sites 13, 14	Bartol, Thomas J AFBCA/DD Norton
2252	Jun 97	Final Closure Report, Site 08, AOCs, Heating Oil Line	Bechtel Environmental, Inc.
2262	Jun 97	SAP Addendum II, Site 05	Earth Tech, Inc.
2263	Jun 97	Fact Sheet, Restoration Review, Vol 3, Issue 5, Community Involved with Public Health Assessment	AFBCA/DD Norton
2264	Jun 97	Draft Final Landfill Closure and Postclosure Plan, Site 02	IT Corp.

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2237	02 Jun 97	Base Letter to EPA and CDTSC Concerning Resolution of Comments on Interim ROD, Site 19	Bartol, Thomas J AFBCA/DD Norton
2240	02 Jun 97	CDTSC Letter to Base Concerning Acceptance of Technical Memo, Groundwater Sampling Summary Report, Wells Monitoring, Air Combat Services Unit, Jul 96, Oct 96, and Jan 97	Plaza, Allan California Department of Toxic Substances Control
2241	03 Jun 97	CRWQCB Letter to CDTSC Concerning Draft Closure Report, Sites 13, 14	Broderick, John C California Regional Water Quality Control Board
2243	05 Jun 97	Base Letter to EPA and CDTSC Concerning Formal Dispute on Draft Final EE/CA, Site 17	Biunno, Claire AFBCA/LD
2244	06 Jun 97	CDTSC Letter to Base Concerning Statement of Dispute for Proposed New Cost Estimates for IWTP EE/CA	Alonzo, Manuel J California Department of Toxic Substances Control
3519	10 Jun 97	CDTSC Letter to Base Concerning Concurrence with Draft Final Closure Report for Removal Actions, Site 08, Multi-AOCs	Scandura, John E California Department of Toxic Substances Control
2250	13 Jun 97	CDTSC Letter to Base Concerning Draft Closure Report for Removal Actions, Sites 13, 14	Scandura, John E California Department of Toxic Substances Control
2253	13 Jun 97	Dispute Resolution Agreement, Draft Final EE/CA, Site 17	Smith, John, E B AFBCA/EV
2251	18 Jun 97	Base Letter to RAB Member Concerning Question from the RAB Meeting, 11 Jun 97	Bartol, Thomas J AFBCA/DD Norton
2284	Jul 97	Draft Work Plan, FSP, QAPP, Site-Specific HSP, and Construction Quality Control Plan for Soil Removal, AOC-70, Site 10	Bechtel Environmental, Inc.
2310	Jul 97	Final Closure Report, Vol I of VI, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2311	Jul 97	Final Closure Report, Vol II of VI, Appendix A, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2312	Jul 97	Final Closure Report, Vol III of VI, Appendix A, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2313	Jul 97	Final Closure Report, Vol IV of VI, Appendices B-E, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2314	Jul 97	Final Closure Report, Vol V of VI, Appendices F-J, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2315	Jul 97	Final Closure Report, Vol VI of VI, Appendix K, Sites 13, 14	Ogden Environmental and Energy Services, Inc.
2321	Jul 97	Fact Sheet, Restoration Review, Vol 3, Issue 6, Air Force/Regulator Team Approves Actions to Close 10 Sites	AFBCA/DD Norton
2285	03 Jul 97	USFWS Letter to Base Concerning Special Status Species Mitigation Plan, Landfill Closure, Site 02	Kobetich, Gail, C US Fish and Wildlife Service
2266	07 Jul 97	Base Letter to EPA and CDTSC Concerning BCT Meeting Agenda, 09 Jul 97	Bartol, Thomas J AFBCA/DD Norton
2282	09 Jul 97	Base Letter to CDTSC Concerning Landfill Closure, Applications for South Coast Air Quality Management District, Site 02	Bartol, Thomas J AFBCA/DD Norton
2292	10 Jul 97	USFWS Letter to Base Concerning Draft Conservation Management Plan	Kobetich, Gail, C US Fish and Wildlife Service

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2293	10 Jul 97	Base Letter to USFWS Concerning Special Status Species Mitigation Plan, Landfill Closure, Site 02	Bartol, Thomas J AFBCA/DD Norton
2295	21 Jul 97	CRWQCB Letter to Base Concerning Closure and Postclosure Plan, Site 02	Broderick, John C California Regional Water Quality Control Board
2301	21 Jul 97	ROD, Interim, Site 19	AFBCA/DD Norton
2304	21 Jul 97	Action Memorandum, Decision Document, AOC-44, Sites 10, 12	CDM Federal Programs Corp.
2296	22 Jul 97	EPA Letter to Base Concerning Review Comments on Closure Report, Sites 13, 14	Lucey, John EPA Region IX
2325	23 Jul 97	EE/CA, Revised Draft Final Report, Site 17	CDM Federal Programs Corp.
2805	23 Jul 97	EE/CA, Final Report, Site 17	CDM Federal Programs Corp.
2308	28 Jul 97	Base Letter to CDTSC Concerning Final Closure of the Air Combat Camera Services	Bartol, Thomas J AFBCA/DD Norton
2318	29 Jul 97	CRWQCB Letter to Base Concerning Cleanup Plan, AOC-70, Site 10	Broderick, John C California Regional Water Quality Control Board
2319	29 Jul 97	CRWQCB Letter to Base Concerning SAP Addendum II, Site 05	Broderick, John C California Regional Water Quality Control Board
2329	Aug 97	Final Special Status Species Mitigation Plan for Landfill Closure, Site 02	Bechtel Environmental, Inc.
2339	Aug 97	Fact Sheet, Restoration Review, Vol 3, Issue 7, Team Norton Includes Air Force, Regulators, and Contractors	AFBCA/DD Norton
2322	06 Aug 97	Base Letter to EPA and CDTSC Concerning BCT Meeting Agenda, 13 Aug 97	Bartol, Thomas J AFBCA/DD Norton
2327	13 Aug 97	BCT Meeting Minutes, 13 Aug 97	Bartol, Thomas J AFBCA/DD Norton
2391	15 Aug 97	Base Letter to EPA and CDTSC Transmitting Response to Comments on Ecological Risk Assessment	Bartol, Thomas J AFBCA/DD Norton
2348	Sep 97	Base Letter to Regulators Concerning Closure Report, Former Industrial Waste Lagoons, Vol I of II, Site 01	Bartol, Thomas J AFBCA/DD Norton
2362	Sep 97	Draft Landfill Closure and Postclosure Plan, Site 02	IT Corp.
2369	Sep 97	Draft Final Conservation Management Plan	Earth Tech, Inc.
2375	Sep 97	Special Status Species Mitigation Report, Landfill Closure, Site 02	Bechtel Environmental, Inc.
2380	Sep 97	Fact Sheet, Restoration Review, Vol 3, Issue 8, Conservation Management Plan Protects Santa Ana River Woolly-Star	AFBCA/DD Norton
2340	03 Sep 97	Base Letter to EPA and CDTSC Concerning BCT Teleconference Meeting Agenda, 10 Sep 97	Bartol, Thomas J AFBCA/DD Norton
2347	04 Sep 97	CRWQCB Letter to Base Concerning Revised EE/CA and Action Memorandum, Site 17	Broderick, John C California Regional Water Quality Control Board
2539	10 Sep 97	Base Letter to CDTSC Concerning Groundwater Sampling Data Results, Data Trends Report, Sites 16, 21	Bartol, Thomas J AFBCA/DD Norton
2352	11 Sep 97	Draft Technical Memorandum, Groundwater Sampling Data Results and Four Quarters Data Trends Report for Wells Monitoring the Air Combat Services Unit, Apr 97	CDM Federal Programs Corp.
2355	11 Sep 97	CDTSC Letter to Base Concerning Draft Work Plans, AOC-70, Site 10	Alonzo, Manuel J California Department of Toxic Substances Control

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2360	16 Sep 97	CDTSC Letter to Base Concerning Revised Draft Final EE/CA, Site 17	Fair, Sharon California Department of Toxic Substances Control
2359	17 Sep 97	EPA Letter to Base Concerning Review Comments on Draft Soil Removal, AOC-70, Site 10	Lucey, John EPA Region IX
2361	17 Sep 97	EPA Letter to Base Concerning Review Comments on 90% Specifications Submittal, Site 02	Lucey, John EPA Region IX
3755	17 Sep 97	IVDA Letter to Base Concerning Conservation Management Plan	Bopf, William L Inland Valley Development Agency
2366	19 Sep 97	CDTSC Letter to Base Concerning Draft Action Memorandum, Site 17	Fair, Sharon California Department of Toxic Substances Control
2368	19 Sep 97	SBIAA Letter to HQ AFCEE Concerning Conservation Management Plan	Rohrer, James E San Bernardino International Airport Authority
1250	22 Sep 97	Base Letter to USFWS Concerning Draft Final Conservation Management Plan	Bartol, Thomas J AFBCA/DD Norton
2188	22 Sep 97	Base Letter to SCAQMD Concerning Landfill Closure, Site 02	Bartol, Thomas J AFBCA/DD Norton
2370	23 Sep 97	Draft Work Plan and FSP, Installation of Two Monitoring Wells Downgradient of IWTP Area, Site 17	CDM Federal Programs Corp.
2371	23 Sep 97	EPA Letter to Base Concerning Revised Draft Final EE/CA for IWTP Perched Groundwater, Site 17	Salyer, Kathleen EPA Region IX
3325	23 Sep 97	EPA Letter to Base Concerning Concurrence with Draft Action Memorandum, Site 17	Salyer, Kathleen EPA Region IX
3433	23 Sep 97	EPA Letter to Base Concerning Comments on Draft Final Ecological Risk Assessment	Salyer, Kathleen EPA Region IX
2384	25 Sep 97	Base Letter to CDTSC Concerning Addendum to RCRA Closure Report, Air Combat Camera Services	Bartol, Thomas J AFBCA/DD Norton
2376	26 Sep 97	Base Letter to Regulators Concerning Closure Environmental Cleanup Plan, FSP, QAPP, Site-Specific EHS Plan, Site 02	Bartol, Thomas J AFBCA/DD Norton
2404	Oct 97	Draft Final Work Plan, FSP, QAPP, Site-Specific HSP, and Construction Quality Control Plan for Soil Removal, AOC-70, Site 10	Bechtel Environmental, Inc.
2374	01 Oct 97	Base Letter to EPA and CDTSC Concerning BCT Meeting Agenda, 08 Oct 97	Bartol, Thomas J AFBCA/DD Norton
2385	01 Oct 97	EPA Letter to Base Concerning Review Comments on Draft Data Summary Report for the Radiological Investigation of the Sanitary Sewer	Lucey, John EPA Region IX
3326	01 Oct 97	CRWQCB Letter to Base Concerning Comments on Draft Closure Report, Site 01	Broderick, John C California Regional Water Quality Control Board
3327	03 Oct 97	Base Letter to CDTSC Concerning Response to Comments on Action Memorandum, Site 17	Bartol, Thomas J AFBCA/DD Norton
3328	03 Oct 97	Base Letter to CDTSC Concerning Update Declaration Page for Action Memorandum, Site 17	Bartol, Thomas J AFBCA/DD Norton
2386	09 Oct 97	CDTSC Letter to Base Concerning Backfilling of Site 05, Additional Characterization of Elevated Lead Levels	Fair, Sharon California Department of Toxic Substances Control

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2390	23 Oct 97	CDTSC Letter to Base Concerning Draft Closure Report, Site 01	Alonzo, Manuel J California Department of Toxic Substances Control
3436	27 Oct 97	CRWQCB Letter to Base Concerning Comments on Draft Final Landfill Closure and Postclosure Plan, Site 02	Broderick, John C California Regional Water Quality Control Board
2324	28 Oct 97	Action Memorandum, Decision Document, Site 17	CDM Federal Programs Corp.
2989	29 Oct 97	USFWS Letter to Base Concerning Comments on Draft Final Conservation Management Plan	Kobetich, Gail C US Fish and Wildlife Service
3329	29 Oct 97	CRWQCB Letter to Base Concerning Comments on Draft Work Plan and FSP, Site 17	Broderick, John C California Regional Water Quality Control Board
3437	29 Oct 97	CRWQCB Letter to Base Concerning Comments on Draft Cleanup Plan, SAP, QAPP, Site 02	Broderick, John C California Regional Water Quality Control Board
2398	30 Oct 97	Base Letter to EPA Concerning Review Comments on Draft Data Summary Report for the Radiological Investigation of the Sanitary Sewer	Bartol, Thomas J AFBCA/DD Norton
2407	Nov 97	Fact Sheet, Restoration Review, Vol 3, Issue 9, Cleanup Program on Schedule	AFBCA/DD Norton
2783	Nov 97	Update Pages, Final Work Plan, FSP, QAPP, Site-Specific HSP, and Construction Quality Control Plan for Soil Removal, AOC-70, Site 10	Bechtel Environmental, Inc.
2393	04 Nov 97	CDTSC Letter to Base Concerning Notice of Deficiency for IWL RCRA Closure Plan	Plaza, Allan California Department of Toxic Substances Control
2399	12 Nov 97	CDTSC Letter to Base Concerning Draft Final Work Plan Soil Removal, AOC-70, Site 10	Scandura, John E California Department of Toxic Substances Control
2402	19 Nov 97	EPA Letter to Base Concerning Draft Final Soil Removal, AOC-70, Site 10	Salyer, Kathleen EPA Region IX
3438	19 Nov 97	EPA Letter to Base Concerning Comments on Proposed Plan, OU 2	Salyer, Kathleen EPA Region IX
2405	21 Nov 97	CDTSC Letter to Base Concerning Clean Closure Requirements for the Air Combat Camera Services Facility	Plaza, Allan California Department of Toxic Substances Control
2406	24 Nov 97	CDTSC Letter to Base Concerning Draft Work Plan and FSP for Installation of Two Monitoring Wells Downgradient of Site 17	Alonzo, Manuel J California Department of Toxic Substances Control
3439	24 Nov 97	CDTSC Letter to Base Concerning Comments on Draft Proposed Plan, BCT Review, OU 2	Alonzo, Manuel J California Department of Toxic Substances Control
2408	25 Nov 97	Base Letter to Distribution Concerning Adjournment of RAB	Bartol, Thomas J Warren, Patricia A AFBCA/DD Norton
2411	Dec 97	Draft Final Closure Report, Former Industrial Waste Lagoons, Vol I of II, Site 01	CH2M Hill
2422	Dec 97	Fact Sheet, Restoration Review, Vol 3, Issue 10, Remediation of TCE Source Area Complete	AFBCA/DD Norton
3754	02 Dec 97	EPA Letter to Base Concerning Concurrence with Draft Closure Report, Site 01	Salyer, Kathleen EPA Region IX

AR IR File Number	Document Date	Subject or Title	Author
3848	07 Dec 97; 08 Dec 97; 14 Dec 97	Newspaper Article, "Norton AFB RAB Completes Review of Environmental Studies"	San Bernardino Sun; La Opinion
3440	09 Dec 97	EPA Letter to Base Concerning Comments on Draft Final Ecological Risk Assessment	Salyer, Kathleen EPA Region IX
2412	10 Dec 97	Base Letter to CDTSC Concerning Proposed Revisions to IWL RCRA Closure Plan	Satrom, Jon M AFBCA/DD Norton
3412	11 Dec 97	CDTSC Letter to Base Concerning Concurrence with Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 97	Alonzo, Manuel J California Department of Toxic Substances Control
3414	11 Dec 97	CDTSC Letter to Base Concerning Concurrence with Draft Fifth Annual Groundwater Data Trends Report and LTM Plan	Alonzo, Manuel J California Department of Toxic Substances Control
3441	11 Dec 97	Base Letter to SBIAA Concerning Management of Storm Water Runoff from Landfill Closure Cap, Site 02	Satrom, Jon M AFBCA/DD Norton
2413	15 Dec 97	EPA Letter to Base Concerning Draft Work Plan and FSP for Installation of Two Monitoring Wells Downgradient, Site 17	Salyer, Kathleen EPA Region IX
3753	15 Dec 97	EPA Memorandum Concerning Draft FSP and QAPP, Site 02	Mezquita, Marlon EPA Region IX
2414	16 Dec 97	CDTSC Letter to Base Concerning Health Risk Evaluation of Contamination in Bldg 248 at Air Combat Camera Service	Plaza, Allan California Department of Toxic Substances Control
2416	17 Dec 97	CDTSC Letter to Base Concerning Change of Remedial Project Manager	Fair, Sharon California Department of Toxic Substances Control
2425	17 Dec 97	SCAQMD Letter to Base Concerning Landfill Closure, Site 02	Tramma, Joe South Coast Air Quality Management District
2426	18 Dec 97	CDTSC Letter to Base Concerning Landfill Closure and Postclosure Plan, Site 02	Scandura, John E California Department of Toxic Substances Control
3421	18 Dec 97	CRWQCB Letter to Base Concerning Acute Toxicity Testing Requirement	Thibeault, Gerard J California Regional Water Quality Control Board
2419	19 Dec 97	EPA Letter to Base Concerning Draft FSP and QAPP, Site 02	Salyer, Kathleen EPA Region IX
2420	19 Dec 97	EPA Letter to Base Concerning Draft Final Closure Report, Former Industrial Waste Lagoons, Site 01	Salyer, Kathleen EPA Region IX
2421	19 Dec 97	EPA Letter to Base Concerning Draft Final Landfill Closure Plan, Site 02	Salyer, Kathleen EPA Region IX
3330	19 Dec 97	CDTSC Letter to Base Concerning Concurrence with Draft Final Closure Report, Site 01	Scandura, John E California Department of Toxic Substances Control
2418	22 Dec 97	CDTSC Letter to Base Concerning Draft Final Closure Report, Former Industrial Waste Lagoons, Site 01	Scandura, John E California Department of Toxic Substances Control
2428	30 Dec 97	Public Health Assessment Study	Agency for Toxic Substances and Disease Registry
2326	Jan 98	Final Landfill Closure and Postclosure Plan, Site 02	IT Corp.
2349	Jan 98	Final Closure Report, Former Industrial Waste Lagoons, Vol II of II, Site 01	CH2M Hill

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2438	Jan 98	Draft Final Environmental Cleanup Plan, FSP, QAPP, Site-Specific Environmental HSP, Site 02	Bechtel Environmental, Inc.
2439	Jan 98	Final Closure Report, Former Industrial Waste Lagoons, Vol I of II, Site 01	CH2M Hill
2446	Jan 98	Fact Sheet, Restoration Review, Vol 4, Issue 1, ATSDR Concludes Contamination from Norton AFB Poses No Apparent Public Health Hazard	AFBCA/DD Norton
2430	02 Jan 98	CDTSC Letter to Base Concerning Landfill Specifications 90% Submittal, Site 02	Scandura, John E California Department of Toxic Substances Control
2429	06 Jan 98	CDTSC Letter to Base Concerning Draft Final Closure Plan, Site 02	Scandura, John E California Department of Toxic Substances Control
2477	06 Jan 98	ATSDR Letter to Base Concerning MW-158	Charp, Paul Agency for Toxic Substances and Disease Registry
2434	21 Jan 98	Base Letter to CDTSC Concerning Health Risk Evaluation of Contamination in Bldg 248 at Air Combat Camera Service	Satrom, Jon M AFBCA/DD Norton
2440	26 Jan 98	EPA Letter to Base Concerning Draft Data Summary Report for the Radiological Investigation of the Sanitary Sewer	Salyer, Kathleen EPA Region IX
2444	27 Jan 98	Final Data Summary Report for the Radiological Investigation of the Sanitary Sewer	CDM Federal Programs Corp.
2447	29 Jan 98	CDHS Letter to ATSDR Concerning Comments on Public Health Assessment	Bailey, Darice G California Department of Health Services
2448	29 Jan 98	Draft Final Work Plan and FSP for Installation of Two Monitoring Wells and Sampling of Monitoring Well Network, Site 17	CDM Federal Programs Corp.
3811	29 Jan 98	Base Letter to Regulators Concerning Response to Comments on Draft Environmental Cleanup Plan, FSP, QAPP, Site 02	Satrom, Jon M AFBCA/DD Norton
2530	02 Feb 98	ROD, Draft, OU 2	CDM Federal Programs Corp.
2534	09 Feb 98	Base Letter to CDTSC Concerning Clean Closure Requirements for the Air Combat Camera Services	Satrom, Jon M AFBCA/DD Norton
4122	17 Feb 98	Tom Dodson & Associates Letter to Base Concerning PCE Contamination of Water Production Wells	Gatlin, Bill Tom Dodson & Associates
2518	18 Feb 98	Base Letter to Regulators Concerning Stabilized Soil, Site 05	Satrom, Jon M AFBCA/DD Norton
2536	Mar 98	Special Status Species Preconstruction Survey Report, Landfill Closure, Site 02	Bechtel Environmental, Inc.
2540	Mar 98	Draft Closure Report, Ecological Risk Reduction, AOC-70, Site 10	Bechtel Environmental, Inc.
2551	Mar 98	Fact Sheet, Restoration Review, Vol 4, Issue 2, Construction of Landfill Closure Cap Begins	AFBCA/DD Norton
3119	Mar 98	Final Conservation Management Plan	Earth Tech, Inc.
2541	02 Mar 98	Final Ecological Risk Assessment Study	CDM Federal Programs Corp.
2542	03 Mar 98	CRWQCB Letter to Base Concerning Stabilized Soil, Site 05	Broderick, John C California Regional Water Quality Control Board
2549	05 Mar 98	EPA Letter to Base Concerning Draft Final FSP and QAPP, Site 02	Salyer, Kathleen EPA Region IX

AR IR File Number	Document Date	Subject or Title	Author
3444	09 Mar 98	CDTSC Letter to Base Concerning Concurrence on Draft Final Work Plan, Site 02	Fair, Sharon California Department of Toxic Substances Control
3445	09 Mar 98	CRWQCB Letter to Base Concerning No Comments on Draft Final Work Plan, Site 02	Broderick, John C California Regional Water Quality Control Board
2543	10 Mar 98	Technical Memorandum Report, Results of Groundwater Sampling, Landfill Closure Plan Wells, Northeast Base Area, Apr 97 and Oct 97, Site 02	CDM Federal Programs Corp.
2550	11 Mar 98	Base Letter to EPA Concerning Draft Final Work Plans for Landfill Closure, Site 02	Satrom, Jon M AFBCA/DD Norton
2546	17 Mar 98	CDTSC Letter to Base Concerning Disposal Options for Stabilized Soil, Site 05	Jimenez, Juan Manuel California Department of Toxic Substances Control
3446	23 Mar 98	CRWQCB Letter to Base Concerning Comments on Draft ROD, OU 2	Broderick, John C California Regional Water Quality Control Board
3332	26 Mar 98	EPA Letter to Base Concerning Comments on Draft Final Work Plan and FSP, Installation of Two Monitoring Wells and Sampling of Monitoring Well Network, Site 17	Salyer, Kathleen EPA Region IX
2758	Apr 98	Update Pages, Final Technical Memorandum Report, Results of Groundwater Sampling, Landfill Closure Plan Wells, Northeast Base Area, Site 02, Apr 98	CDM Federal Programs Corp.
3603	Apr 98	Site Specific HSP, Site Closure, Site 02	Bechtel Environmental, Inc.
2554	01 Apr 98	Base Letter to EPA and CDTSC Concerning BCT Meeting Agenda, 08 Apr 98	St. John, Kenneth E AFBCA/DD Norton
2552	02 Apr 98	Base Letter to CDWR Concerning Submittal of Well Completion Reports	Satrom, Jon M AFBCA/DD Norton
3752	03 Apr 98	CRWQCB Letter to Base Concerning No Comments on Draft Closure Report, AOC 70, Site 10	Broderick, John C California Regional Water Quality Control Board
2556	08 Apr 98	Base Memorandum Concerning BCT Changes to the Environmental Condition Code for Parcel I-3A	AFBCA/DD Norton
3447	10 Apr 98	CDTSC Letter to Base Concerning Comments on Draft Final Proposed Plan, OU 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
4123	15 Apr 98	Base Letter to Tom Dodson & Associates Concerning PCE Contamination of Water Production Wells	Satrom, John AFBCA/DD-Norton
2561	17 Apr 98	CRWQCB Letter to Base Concerning Technical Memorandum, Results of Groundwater Sampling, Landfill Closure Plan Wells, Apr 97 and Oct 97, Site 02	Broderick, John C California Regional Water Quality Control Board
3334	22 Apr 98	CDTSC Letter to Base Concerning Comments on Draft Final Work Plan and FSP for Installation of Two Monitoring Wells and Sampling of Monitoring Well Network, Site 17	Jimenez, Juan Manuel California Department of Toxic Substances Control
3335	05 May 98	CDTSC Letter to Base Concerning Comments on Revised Draft Final Work Plan and FSP for Installation of Two Monitoring Wells and Sampling of Monitoring Well Network, Site 17	Fair, Sharon California Department of Toxic Substances Control
2640	08 May 98	Draft Work Plan, Golf Course Pond Sampling	CDM Federal Programs Corp.
2566	12 May 98	Base Letter to EPA Concerning Draft Final Work Plans for Landfill Closure, Site 02	Satrom, Jon M AFBCA/DD Norton

AR IR File Number	Document Date	Subject or Title	Author
2568	13 May 98	Engineering Design Report, Work Plan Addendum I, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Removal of Burnt Waste Layer, Site 05	Earth Tech, Inc.
2908	15 May 98	Draft Technical Memorandum Report, Results of Groundwater Sampling, Landfill Closure Plan Wells, Rev 0, Jun 98, Site 2	CDM Federal Programs Corp.
2570	19 May 98	Engineering Design Report, Work Plan Addendum II, Removal Action for Dioxins, Metals, and Polynuclear Aromatic Hydrocarbons, Removal of Burnt Waste Layer, Site 05	CKY Incorporated
2595	21 May 98	Draft Work Plan and FSP, Installation and Sampling of Two Monitoring Wells, Site 01	CDM Federal Programs Corp.
2574	22 May 98	SAP Addendum III, Removal of Burnt Waste Layer, Site 05	CKY Incorporated
3336	28 May 98	CDTSC Letter to Base Concerning Comments on Draft Closure Report, AOC 70 and Ecological Risk Reduction, Site 10	Jimenez, Juan Manuel California Department of Toxic Substances Control
2575	29 May 98	EPA Letter to Base Concerning Draft Final FSP and QAPP, Site 02	Salyer, Kathleen EPA Region IX
2596	29 May 98	Final Public Health Assessment Study	Agency for Toxic Substances and Disease Registry
2588	Jun 98	ITIR, Quality Sampling of the Montecito Borrow Pit Soils to Assess Suitability for Use as Monolithic Layer Material, Site 02	Bechtel Environmental, Inc.
2599	Jun 98	Final Environmental Cleanup Plan, FSP, QAPP, Site-Specific Environmental HSP, Rule 1150 Excavation Management Plan, and Special Status Species Mitigation Plan for Landfill Closure, Site 02	Bechtel Environmental, Inc.
2662	Jun 98	Fact Sheet, Restoration Review, Vol 4, Issue 3, Groundwater Monitoring Provides Key Water Quality Data	AFBCA/DD Norton
2594	10 Jun 98	Final Work Plan and FSP, Installation of Two Monitoring Wells and Sampling of Monitoring Well Network, Site 17	CDM Federal Programs Corp.
3449	12 Jun 98	CRWQCB Letter to Base Concerning No Comments on Final Design Report, Work Plan Addendum, Site 05	Broderick, John C California Regional Water Quality Control Board
2642	19 Jun 98	EPA Letter to Base Concerning Review of Draft Closure Report, AOC-70, Site 10	Salyer, Kathleen EPA Region IX
3337	22 Jun 98	CRWQCB Letter to Base Concerning No Comments on Final SAP, Addendum III, Site 05	Broderick, John C California Regional Water Quality Control Board
2643	26 Jun 98	CRWQCB Letter to Base Concerning Draft Work Plan and FSP, Site 01	Broderick, John C California Regional Water Quality Control Board
2658	26 Jun 98	CRWQCB Letter to Base Concerning Work Plan for Golf Course Pond Sampling	Broderick, John C California Regional Water Quality Control Board
2663	Jul 98	Fact Sheet, Restoration Review, Vol 4, Issue 4, Base Cleanup - Why it Takes So Long	AFBCA/DD Norton
2645	01 Jul 98	CRWQCB Letter to Base Concerning Final Work Plan, Two Monitoring Wells, Site 17	Broderick, John C California Regional Water Quality Control Board

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2646	01 Jul 98	CRWQCB Letter to Base Concerning Public Health Assessment	Broderick, John C California Regional Water Quality Control Board
2648	06 Jul 98	CRWQCB Letter to Base Concerning Final Environmental Cleanup Plan	Broderick, John C California Regional Water Quality Control Board
2653	06 Jul 98	CRWQCB Letter to Base Concerning Technical Memorandum, Results of Sampling, Site 02	Broderick, John C California Regional Water Quality Control Board
2652	08 Jul 98	CDTSC Letter to Base Concerning Technical Memorandum, Results of Groundwater Sampling for Landfill Closure Plan Wells, Apr 97 and Oct 97, Site 02	Jimenez, Juan Manuel California Department of Toxic Substances Control
2708	13 Jul 98	CRWQCB Letter to Base Concerning Review of ITIR for Qualification Sampling Montecito Soils	Broderick, John C California Regional Water Quality Control Board
2656	21 Jul 98	CDTSC Letter to Base Concerning Draft Work Plan and FSP for Installation and Sampling of Two Monitoring Wells, Site 01	Jimenez, Juan Manuel California Department of Toxic Substances Control
2660	27 Jul 98	CDTSC Letter to Base Concerning ITIR for Qualification Sampling of the Montecito Borrow Pit Soils to Assess Suitability for Use as Monolithic Layer Material	Jimenez, Juan Manuel California Department of Toxic Substances Control
2712	Aug 98	Revised Draft Community Relations Plan (CRP)	AFBCA/DD Norton
2665	06 Aug 98	EPA Letter to Base Concerning Draft Work Plan and FSP, Installation and Sampling of Two Monitoring Wells, Site 01	Salyer, Kathleen EPA Region IX
2711	06 Aug 98	Final Technical Memorandum Report, Results of Groundwater Sampling for Landfill Closure Plan Wells, Northeast Base Area, Apr 97 and Oct 97, Site 02	CDM Federal Programs Corp.
3534	06 Aug 98	Final Technical Memorandum Report, PCE Contamination in Relation to Production Well 2A, Northeast Base Area, Site 02	CDM Federal Programs Corp.
2713	19 Aug 98	Draft Technical Memorandum Report, Results of Groundwater Sampling, Landfill Closure Plan Wells, Northeast Base Area, Site 02, Apr 98	CDM Federal Programs Corp.
2714	24 Aug 98	Final Work Plan, Installation and Sampling of Two Monitoring Wells, Site 01	CDM Federal Programs Corp.
2715	26 Aug 98	Base Letter to CDTSC Concerning Results of Cyanide Sampling of Six Wells Located in the Vicinity of the Air Combat Camera Services	Bartol, Thomas J AFBCA/DD Norton
2717	31 Aug 98	Base Letter to EPA Concerning Proposed Plan and ROD	Bartol, Thomas J AFBCA/DD Norton
2725	31 Aug 98	Draft Technical Memorandum, Data Summary Report, Golf Course Pond Sampling, Site 1	CDM Federal Programs Corp.
2769	Sep 98	Special Status Species Mitigation Report Landfill Closure, Rev 0, Site 2	Bechtel Environmental, Inc.
3115	Sep 98	Fact Sheet, Restoration Review, Vol 4, Issue 5, Former Fire Training Area Cleanup Completed	AFBCA/DD Norton
3118	Sep 98	Update Pages, Draft Final Closure Report, Ecological Risk Reduction, AOC-70, Site 10	Bechtel Environmental, Inc.
2724	10 Sep 98	CDTSC Letter to Base Concerning Revised Health Risk Evaluation of Contamination in Bldg 248 at Air Combat Camera Service	Plaza, Allan California Department of Toxic Substances Control
2722	11 Sep 98	CDTSC Letter to Base Concerning Draft Revised CRP	Jimenez, Juan Manuel California Department of Toxic Substances Control

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3120	21 Sep 98	USFWS Letter to Base Concerning Comments on Conservation Management Plan	Bartel, Jim A US Fish and Wildlife Service
3122	28 Sep 98	CDTSC Letter to Base Concerning Review of Draft Technical Memorandum Data Summary Report, Golf Course Pond Sampling	Jimenez, Juan Manuel California Department of Toxic Substances Control
3121	29 Sep 98	CRWQCB Letter to Base Concerning Review of Draft Scope for FS, Basewide Report	Broderick, John C California Regional Water Quality Control Board
2784	06 Oct 98	CDTSC Letter to Base Concerning Comments on Draft Technical Memorandum, Results of Groundwater Sampling Landfill Closure Plan Wells, Site 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
2785	07 Oct 98	CRWQCB Letter to Base Concerning Review of Final Work Plan Wells, Site 1	Broderick, John C California Regional Water Quality Control Board
2825	07 Oct 98	CRWQCB Letter to Base Concerning Comments on Final Addendum to Abandonment Plan, LTM	Broderick, John C California Regional Water Quality Control Board
3125	08 Oct 98	CDTSC Letter to Base Concerning Comments on Draft Technical Memorandum, Results of Groundwater Sampling, Landfill Closure Plan Wells, Jan 98, Site 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
3130	16 Oct 98	CRWQCB Letter to Base Concerning Draft Technical Memorandum Data Summary Report, Golf Course Pond Sampling	Broderick, John C California Regional Water Quality Control Board
2749	22 Oct 98	CDTSC Letter to Base Concerning Comments on Basewide FS, Draft Scope and Approach	Jimenez, Juan Manuel California Department of Toxic Substances Control
2750	23 Oct 98	CDTSC Letter to Base Concerning Draft Final Closure Report, Ecological Risk Reduction, Site 10, AOC 70	Scandura, John E California Department of Toxic Substances Control
4068	23 Oct 98	EPA Letter to Base Concerning Scope and Approach for Basewide FS	Salyer, Kathleen, EPA Region IX
2751	27 Oct 98	EPA Letter to Base Concerning Comments on Basewide FS, Scope and Approach	Salyer, Kathleen EPA Region IX
2752	30 Oct 98	CRWQCB Letter to Base Concerning Draft Final Closure Report, Ecological Risk Reduction, Site 10, AOC 70	Broderick, John C California Regional Water Quality Control Board
2760	Nov 98	Draft Closure Report, Small Arms Range, Site 5	Earth Tech, Inc.
2768	Nov 98	Fact Sheet, Restoration Review, Vol 4, Issue 6, Highlights of Cleanup	AFBCA/DD Norton
3030	09 Nov 98	EPA Letter to Base Concerning Comments on Draft Revised CRP, Rev 5	Salyer, Kathleen EPA Region IX
4016	25 Nov 98	Newspaper Article, “Landfill cleanup nearing finale”	San Bernardino Sun
3850	29 Nov 98	Newspaper Article, “Dump project scrutinized”	San Bernardino Sun
2773	Dec 98	Final Closure Report, Ecological Risk Reduction, Rev 0, Site 10, AOC 70	Bechtel Environmental, Inc.
2775	Dec 98	Draft Final Community Relations Plan (CRP), Rev 5	AFBCA/DD Norton
2771	08 Dec 98	EPA Letter to Base Concerning Comments on Draft Final Closure Report and Ecological Risk Reduction, Site 10, AOC 70	Salyer, Kathleen EPA Region IX
3748	18 Dec 98	EPA Letter to Base Concerning Concurrence with Draft Technical Memorandum, Data Summary Report, Golf Course Pond Sampling, Site 01	Salyer, Kathleen EPA Region IX

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2778	04 Jan 99	CRWQCB Letter to Base Concerning Review Comments on Closure Report, Site 5	Broderick, John C California Regional Water Quality Control Board
2782	20 Jan 99	Meeting Minutes, RCRA Closure of Air combat Camera, IWTP and IWL, 11 Jan 99	
2807	27 Jan 99	Update Pages, Final Technical Memorandum, Data Summary Report, Golf Course Pond Sampling, Site 1	CDM Federal Programs Corp.
2788	28 Jan 99	Base Letter to Regulators Concerning Revised FFA Schedule for Basewide Proposed Plan	Bartol, Thomas J AFBCA/DD Norton
2833 Part 1	Feb 99	O&M Manual, Triton Flare Package, Site 2	LFG&E, Inc.
2833 Part 2	Feb 99	O&M Manual, Triton Flare Package, Site 2	LFG&E, Inc.
2792	01 Feb 99	BCT Meeting Minutes, 17 Feb 99	Bartol, Thomas J AFBCA/DD Norton
3747	08 Feb 99	AFBCA/DD Letter to USFWS Concerning Conservation Management Plan	Jackson, Dale O AFBCA/DD
2809	16 Feb 99	FS, Draft Basewide Report, Rev 0	CDM Federal Programs Corp.
2798	22 Feb 99	Draft O&M Plan, Landfill Closure, Site 2	IT Corp.
2799	22 Feb 99	CRWQCB Letter to Base Concerning Draft Technical Memorandum, Landfill Closure Detection Monitoring, Groundwater Sampling and Statistical Analysis, Site 2	Broderick, John C California Regional Water Quality Control Board
2810	23 Feb 99	CDTSC Letter to Base Concerning Requirements for Annual Groundwater Monitoring Report, IWTP	Gharibian, Florence California Department of Toxic Substances Control
2811	23 Feb 99	CDTSC Letter to Base Concerning Comments on Draft Revised CRP	Jimenez, Juan Manuel California Department of Toxic Substances Control
2813	26 Feb 99	CDTSC Letter to Base Concerning Comments on Draft Closure Report, Small Arms Range, Site 5	Jimenez, Juan Manuel California Department of Toxic Substances Control
2801	Mar 99	Final Community Relations Plan (CRP), Rev 5	AFBCA/DD Norton
2834	Mar 99	Fact Sheet, Restoration Review, Vol 5, Issue 1, Annual Public Forum Provides Two-Way Interchange with the Community	AFBCA/DD Norton
2814	01 Mar 99	EPA Letter to Base Concerning No Further Comments on Draft Final Revised CRP, Rev 5	Salyer, Kathleen EPA Region IX
3745	12 Mar 99	USFWS Letter to AFBCA/DD Concerning Conservation Management Plan	Bartel, Jim A US Fish and Wildlife Service
2830	19 Mar 99	CRWQCB Letter to Base Concerning No Further Comments on FS, Draft Basewide Report	Broderick, John C California Regional Water Quality Control Board
2858	26 Mar 99	Draft Meeting Minutes, Groundwater Contamination, 18 Mar 99	Tom Dodson & Associates
2837	29 Mar 99	CRWQCB Letter to Base Concerning Review of Draft O&M Plan, Site 2	Broderick, John C California Regional Water Quality Control Board
2857	Apr 99	HSP, Landfill Closure, Rev 1, Site 2	Bechtel Environmental, Inc.
3744	01 Apr 99	AFBCA/DD Letter to USFWS Concerning Conservation Management Plan	Jackson, Dale O AFBCA/DD
2840	04 Apr 99	EPA Letter to Base Concerning Comments on FS, Draft Basewide Report	Salyer, Kathleen EPA Region IX

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2839	09 Apr 99	CDTSC Letter to Base Concerning Comments on FS, Draft Basewide Report	Jimenez, Juan Manuel California Department of Toxic Substances Control
2843	09 Apr 99	EPA Letter to Base Concerning Comments on Draft Closure Report, Small Arms Range, Site 5	Salyer, Kathleen EPA Region IX
2931	19 Apr 99	Base Letter to EPA and CDTSC Concerning BCT Meeting Agenda, 29 Apr 99	Bartol, Thomas J AFBCA/DD Norton
2863 Part 1	May 99	Draft Closure Report, Landfill Closure, Rev 0, Site 2	Bechtel Environmental, Inc.
2863 Part 2	May 99	Draft Closure Report, Landfill Closure, Rev 0, Site 2	Bechtel Environmental, Inc.
2865	May 99	Draft Final Closure Report, Small Arms Range, Site 5	Earth Tech, Inc.
2873	May 99	Fact Sheet, Restoration Review, Vol 5, Issue 2, Old Fuel Removed from Soil Near Flightline	AFBCA/DD Norton
2971	07 May 99	Landfill Gas Flare Report, Source Test Results, Site 2	SCEC
2869	20 May 99	Update Pages, Final Technical Memorandum Report, Landfill Closure Detection Monitoring Program, Groundwater Sampling and Statistical Analysis, Jul 98, Rev 0, Site 2	CDM Federal Programs Corp.
3607	24 May 99	Base Letter to Regulators Concerning Responses to Comments on Draft Final Closure Report, Site 05	Bartol, Thomas J AFBCA/DD Norton
3033	25 May 99	CDTSC Letter to Base Concerning Comments on Draft O&M Plan, Feb 99, Site 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
2872	28 May 99	EPA Letter to Base Concerning Comments on Draft O&M Plan, Landfill Closure, Site 2,	Salyer, Kathleen EPA Region IX
2875	Jun 99	Draft Proposed Plan, Basewide OU	CDM Federal Programs Corp.
3535	Jun 99	Pre-Final/Final Inspection Report, Site 02	CH2M Hill
3609	Jun 99	ITIR, Landfill Gas Monitoring Data, Spring 99	Bechtel Environmental, Inc.
2874	02 Jun 99	FS, Draft Final Basewide Report, Rev 0	CDM Federal Programs Corp.
2876	02 Jun 99	CDTSC Letter to Base Concerning Final Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 99	Jimenez, Juan Manuel California Department of Toxic Substances Control
2877	02 Jun 99	CDTSC Letter to Base Concerning Final Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 98	Jimenez, Juan Manuel California Department of Toxic Substances Control
2878	02 Jun 99	CDTSC Letter to Base Concerning Comments on Final Technical Memorandum, Landfill Closure Detection Monitoring, Groundwater Sampling and Statistical Analysis, Jul 98, Site 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
2881	08 Jun 99	CDTSC Letter to Base Concerning Requirements for Closure Certification, IWTP	Plaza, Allan California Department of Toxic Substances Control
2882	09 Jun 99	CDTSC Letter to Base Concerning Comments on Draft Final Closure Report, Small Arms Range, Site 5	Scandura, John E California Department of Toxic Substances Control
3003	10 Jun 99	CDTSC Letter to Base Concerning Constituents of Potential Concern, IWTP	Plaza, Allan California Department of Toxic Substances Control

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2885	15 Jun 99	CRWQCB Letter to Base Concerning Review of Draft Final Closure Report, Small Arms Range, Site 5	Broderick, John C California Regional Water Quality Control Board
2886	21 Jun 99	CRWQCB Letter to Base Concerning Review of Draft Closure Report, Landfill Closure, Site 2	Broderick, John C California Regional Water Quality Control Board
2887	21 Jun 99	CRWQCB Letter to Base Concerning Review of FS, Draft Final Basewide Report, Rev 0	Broderick, John C California Regional Water Quality Control Board
2898	28 Jun 99	CRWQCB Letter to Base Concerning Comments on Draft Proposed Plan, Basewide OU	Broderick, John C California Regional Water Quality Control Board
2901	02 Jul 99	EPA Letter to Base Concerning Request for Seven Day Extension and Comments on FS, Draft Final Basewide Report	Salyer, Kathleen EPA Region IX
2903	08 Jul 99	CDTSC Letter to Base Concerning Groundwater Monitoring and Closure Certification, Air Combat Camera Service	Plaza, Allan California Department of Toxic Substances Control
2905	09 Jul 99	CDTSC Letter to Base Concerning Comments on FS, Draft Final Basewide Report	Jimenez, Juan Manuel California Department of Toxic Substances Control
2912	09 Jul 99	EPA Letter to Base Concerning Comments on FS, Draft Final Basewide Report	Salyer, Kathleen EPA Region IX
2915	16 Jul 99	CDTSC Letter to Base Concerning Comments on Draft Proposed Plan, Basewide OU	Jimenez, Juan Manuel California Department of Toxic Substances Control
2917	19 Jul 99	CDTSC Letter to Base Concerning Draft Closure Report, Landfill Closure, Site 2	Scandura, John E California Department of Toxic Substances Control
2918	19 Jul 99	EPA Letter to Base Concerning Comments on Draft Proposed Plan, Basewide OU	Salyer, Kathleen EPA Region IX
2920	21 Jul 99	CDTSC Letter to Base Concerning Comments on Draft Closure Report Landfill Closure, Site 2	Jimenez, Juan Manuel California Department of Toxic Substances Control
2922	28 Jul 99	EPA Letter to Base Concerning Review of Draft Closure Report, Small Arms Range, Site 5	Salyer, Kathleen EPA Region IX
2929	Aug 99	Update Pages, Final Closure Report, Small Arms Range, Site 5	Earth Tech, Inc.
2955	Aug 99	Fact Sheet, Restoration Review, Vol 5, Issue 3, Air Force Completes First Five-Year Review	AFBCA/DD Norton
2957	Aug 99	Biannual Report on Postclosure Groundwater Monitoring, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Rev 0, Site 2	Bechtel Environmental, Inc.
2974	Aug 99	Special Status Species Mitigation Report, Landfill Closure, Site 2	Bechtel Environmental, Inc.
2924	03 Aug 99	Base Letter to USFWS Concerning Initiation of Formal Consultation Under Endangered Species Act	Bartol, Thomas J AFBCA/DD Norton
2925	03 Aug 99	BCT Meeting Minutes, 20 Jul 99	Bartol, Thomas J AFBCA/DD Norton
2936	12 Aug 99	EPA Letter to Base Concerning Comments on Draft Closure Report, Landfill Closure, Site 2	Salyer, Kathleen EPA Region IX
2938	13 Aug 99	Update Pages, Draft Final O&M Plan, Landfill Closure, Site 2	IT Corp.
3818	13 Aug 99	Response to EPA Comments on OM&M Plan, Site 02	Bechtel Environmental, Inc.

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2968	17 Aug 99	FS, Final Basewide Report, Rev 0	CDM Federal Programs Corp.
2950	19 Aug 99	Draft Final Proposed Plan, Basewide OU	CDM Federal Programs Corp.
2953	25 Aug 99	Draft Work Plan, FSP, Additional RCRA Characterization, Rev 2, Sites 7, 17	CDM Federal Programs Corp.
3002	25 Aug 99	Final Work Plan, FSP, Additional RCRA Characterization, Rev 2, Sites 7, 17	CDM Federal Programs Corp.
2990	26 Aug 99	CDHS Letter to CDTSC Concerning Comments on IWL, Radionuclide Data Summary	Bailey, Darice G California Department of Health Services
3132	26 Aug 99	Base Letter to USFWS Transmitting Special Status Species Mitigation Report, Landfill Closure, Site 2	Bartol, Thomas J AFBCA/DD Norton
2852	27 Aug 99	Base Letter to CRWQCB Transmitting Postclosure Groundwater Monitoring Report, Landfill, Site 2	Bartol, Thomas J AFBCA/DD Norton
2969	Sep 99	ITIR, Landfill Gas Monitoring Data, Former Landfill Closure, Rev 0, Site 2	Bechtel Environmental, Inc.
2975	Sep 99	Update Pages, Draft Final Closure Report, Landfill Closure, Rev 0, Site 2	Bechtel Environmental, Inc.
2960	03 Sep 99	CRWQCB Letter to Base Concerning No Further Comments on Draft Final Proposed Plan, Basewide OU	Broderick, John C California Regional Water Quality Control Board
2949	08 Sep 99	CDTSC Letter to Base Concerning FFA Schedule, FS, Final Report and Draft Final Proposed Plan, Basewide OU	Scandura, John E California Department of Toxic Substances Control
2948	09 Sep 99	Base Letter to CDTSC Concerning Extension Granted for FFA Schedule, FS, Final Report and Draft Proposed Plan, Basewide OU	Bartol, Thomas J AFBCA/DD Norton
2956	09 Sep 99	USFWS Letter to Base Concerning Request for Initiation of Formal Consultation, Endangered Species Act	Bartel, Jim A US Fish and Wildlife Service
2961	13 Sep 99	CDTSC Letter to Base Concerning Biannual Report on Postclosure Groundwater Monitoring, Site 2	Yemut, Emad B California Department of Toxic Substances Control
2991	13 Sep 99	Base Letter to EPA and CDTSC Concerning BCT Meeting, 29 Sep 99	Bartol, Thomas J AFBCA/DD Norton
3608	13 Sep 99	Bechtel Response to EPA Comments on Draft Closure Report, Site 02	Bechtel Environmental, Inc.
2962	14 Sep 99	CDTSC Letter to Base Concerning Comments on Draft Final O&M Plan, Landfill Closure, Site 2	Yemut, Emad B California Department of Toxic Substances Control
2963	14 Sep 99	EPA Letter to Base Concerning Comments on FS, Final Basewide Report	Chang, James EPA Region IX
2998	14 Sep 99	Compliance Summary Report, Action Memorandum Response Items, Rev 1, Site 17	CDM Federal Programs Corp.
2964	17 Sep 99	CRWQCB Letter to Base Concerning Review of Biannual Report on Postclosure Groundwater Monitoring, Site 2	Broderick, John C California Regional Water Quality Control Board
2977	22 Sep 99	EPA Letter to Base Concerning Comments on Draft Final O&M Plan, Landfill Closure, Site 2	Chang, James EPA Region IX
2997	22 Sep 99	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Jul 99, Rev 0	CDM Federal Programs Corp.

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2996	29 Sep 99	CDTSC Letter to Base Concerning Approval of Work Plan, FSP, Additional RCRA Characterization, Sites 7 and 17	Plaza, Allan California Department of Toxic Substances Control
3000	01 Oct 99	CRWQCB Letter to Base Concerning Review of Landfill Gas Flare Source Test Results, ITIR Landfill Gas Monitoring Data, Site 2	Broderick, John C California Regional Water Quality Control Board
3001	01 Oct 99	CDTSC Letter to Base Concerning Review of Draft Technical Memorandum, Groundwater Sampling Data Results, Summary Report, Apr 99	Yemut, Emad B California Department of Toxic Substances Control
3004	05 Oct 99	CRWQCB Letter to Base Concerning Comments on Draft Final O&M Plan, Landfill Closure, Site 2	Thibeault, Gerard J California Regional Water Quality Control Board
3512	05 Oct 99	CRWQCB Letter to Base Concerning Concurrence with Draft Final Closure Report, Site 02	Thibeault, Gerard J California Regional Water Quality Control Board
3005	06 Oct 99	CRWQCB Letter to Base Concerning Comments on Draft Final O&M Plan, Landfill Closure, Site 2	Broderick, John C California Regional Water Quality Control Board
3008	06 Oct 99	CDTSC Letter to Base Concerning Response to Comments on FS, Final Basewide Report, Ecological Risk Assessment	Fair, Sharon California Department of Toxic Substances Control
3743	18 Oct 99	Base Letter to CDTSC Concerning Final FS, Response to Comments on Human Health and Ecological Risk Assessment	Bartol, Thomas J AFBCA/DD Norton
3142	21 Oct 99	Base Letter to CDTSC Concerning Responses to Comments on FS, Final Report, Human Health and Ecological Risk Assessment	Bartol, Thomas J AFBCA/DD Norton
3046	Nov 99	Fact Sheet, Restoration Review, Vol 5, Issue 4, Environmental Cleanup Nearly Complete	AFBCA/DD Norton
3022	01 Nov 99	CRWQCB Letter to Base Concerning Review of Concur Compliance Summary Report, Action Memorandum Response Items, Site 17	Broderick, John C California Regional Water Quality Control Board
3020	02 Nov 99	Base Letter to EPA and CDTSC Concerning Grant of Request for Extension on FS, Final Basewide Report	Bartol, Thomas J AFBCA/DD Norton
3021	04 Nov 99	CDTSC Letter to Base Concerning Comments on FS, Final Basewide Report	Yemut, Emad B California Department of Toxic Substances Control
3038	30 Nov 99	Base Letter to EPA and CDTSC Concerning Comments and Extension of Informal Dispute Resolution Period, Basewide FS	Bartol, Thomas J AFBCA/DD Norton
3040	Dec 99	Update Pages, Final O&M Plan, Landfill Closure, Site 2	IT Corp.
3049	Dec 99	Update Pages, Final Closure Report, Landfill Closure, Site 2	Bechtel Environmental, Inc.
3045	03 Dec 99	CDTSC Letter to Base Concerning Extension of Informal Dispute Resolution Period, FS, Final Basewide Report	Scandura, John E California Department of Toxic Substances Control
3050	14 Dec 99	EPA Letter to HQ AFCEE/ERB Concerning Draft Final Closure Report, Landfill Closure, Site 2	Chang, James EPA Region IX
3051	22 Dec 99	CDTSC Letter to Base Concerning Review of, ITIR, Landfill Gas Monitoring Data, Landfill Closure, Site 2	Yemut, Emad B California Department of Toxic Substances Control

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3056	Jan 00	Semiannual Report on Postclosure Groundwater Monitoring, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 2	Bechtel Environmental, Inc.
3054	18 Jan 00	CRWQCB Letter to Base Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 99	Broderick, John C California Regional Water Quality Control Board
3064	20 Jan 00	Summary of Annual Public Forum, 20 Jan 00	AFBCA/DD Norton
3855	21 Jan 00	Newspaper Article, "Cleanup at former Air Force base nearly done"	Redlands Daily Facts
3856	21 Jan 00	Newspaper Article, "Norton cleanup almost finished, Air Force says"	Riverside Press-Enterprise
3857	21 Jan 00	Newspaper Article, "Norton cleanup nearly complete"	San Bernardino Sun
3055	21 Jan 00	Update Pages, Final Technical Memorandum Report, Landfill Closure Detection Monitoring Program, Groundwater Sampling and Statistical Analysis, Jul 98, Site 2	CDM Federal Programs Corp.
3060	27 Jan 00	CDTSC Letter to Base Concerning Annual Groundwater Monitoring	Kou, Jose California Department of Toxic Substances Control
3065	03 Feb 00	City of San Bernardino Letter to Base Concerning Invitation to Annual Public Forum	Saurez, Joe V C, Jr City of San Bernardino
3068	07 Feb 00	CDTSC Letter to Base Concerning Review of Final Technical Memorandum, Landfill Closure Detection Monitoring Program, Jul 98	Yemut, Emad B California Department of Toxic Substances Control
3067	11 Feb 00	Base Letter to CDTSC Transmitting Final Seventh Annual Groundwater Data Trends Report, LTM, Rev 0	Satrom, Jon M AFBCA/DD Norton
3083	11 Feb 00	Update Pages, Final Technical Memorandum Report, Well Abandonment and Repair Plan, Addendum 4, Rev 0	CDM Federal Programs Corp.
3092	21 Feb 00	Draft Technical Memorandum Report, Dioxins and PAH Characterization, Site 10	CDM Federal Programs Corp.
3078	22 Feb 00	EPA Letter to Base Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 99	Chang, James EPA Region IX
3079	23 Feb 00	CRWQCB Letter to Base Concerning Comments on Postclosure Groundwater Monitoring, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 2	Broderick, John C California Regional Water Quality Control Board
3091	23 Feb 00	ROD, Draft, Basewide OU	CDM Federal Programs Corp.
3026	Mar 00	Fact Sheet, Restoration Review, Vol 7, Issue 1, Annual Public Forum Summarizes Progress	AFBCA/DD Norton
3085	17 Mar 00	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Jan 00, Rev 0	CDM Federal Programs Corp.
3084	21 Mar 00	Update Pages, Final Technical Memorandum, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Oct 99, Rev 0	CDM Federal Programs Corp.
3086	30 Mar 00	Update Pages, Final Closure Report, Final O&M Plan, Landfill Closure, Site 2	Bechtel Environmental, Inc.
3089	06 Apr 00	FS, Revised Draft Final Basewide Report, Rev 1	CDM Federal Programs Corp.
3090	17 Apr 00	CRWQCB Letter to Base Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 00	Broderick, John C California Regional Water Quality Control Board

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3168	26 Apr 00	CDTSC Memorandum Concerning Revised Draft Final Basewide FS, Site 10	Renzi, Barbara California Department of Toxic Substances Control
3096	May 00	Landfill Gas Flare Report, Source Test Results, Site 2	SCEC
3097	May 00	ITIR, Landfill Gas Monitoring Data, Former Landfill Closure, Site 2	Bechtel Environmental, Inc.
3104	05 May 00	CDTSC Letter to Base Concerning Comments on FS, Revised Draft Final Basewide Report	Fair, Sharon California Department of Toxic Substances Control
3105	08 May 00	CRWQCB Letter to Base Concerning Comments on FS, Revised Draft Final Basewide Report	Broderick, John C California Regional Water Quality Control Board
3107	09 May 00	EPA Letter to AFBCA/DD March ROL Concerning Loss of BEC and Request for Extension, FS, Revised Draft Final Basewide Report	Chang, James EPA Region IX
3109	15 May 00	Update Pages, Semiannual Report on Postclosure Groundwater Monitoring, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 2	Bechtel Environmental, Inc.
3095	17 May 00	Draft Technical Memorandum Report, Additional RCRA Characterization, Sites 7, 17	CDM Federal Programs Corp.
3112	23 May 00	AFBCA/DD March ROL Letter to EPA Concerning Grant for Extension on FS, Revised Draft Final Basewide Report	Collins, William A AFBCA/DD March ROL
3136	Jun 00	Fact Sheet, Restoration Review, Vol 7, Issue 2, Base Boundary Groundwater Treatment System Turned Off	AFBCA/DD Norton
3137	05 Jun 00	Eighth Annual Groundwater Data Trends Report and LTM Plan, Appendix A	CDM Federal Programs Corp.
3169	07 Jun 00	EPA Letter to AFBCA/EV, CDTSC, and EPA Concerning Invocation of Informal Dispute Resolution Process for FS, Basewide Report	Smith, Barbara M EPA Region IX
3138	16 Jun 00	Draft Eighth Annual Groundwater Data Trends Report and LTM Plan	CDM Federal Programs Corp.
3144	20 Jun 00	AFBCA/DD March ROL Letter to CDTSC Concerning Results of Cyanide Sampling of Six Wells Located near Air Combat Camera Services, Jul 99-Apr 00	Bridgewater, Mary AFBCA/DD March ROL
3506	23 Jun 00	FS, Draft Final Report, AOCs 18, 33, Site 10	CDM Federal Programs Corp.
3514	28 Jun 00	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 00	Yemut, Emad B California Department of Toxic Substances Control
3149	Jul 00	Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 2	Earth Tech, Inc.
3515	10 Jul 00	CDTSC Letter to Base Concerning Comments on Draft Technical Memorandum, Additional RCRA Characterization, Sites 07, 17	Plaza, Allan California Department of Toxic Substances Control
3198	12 Jul 00	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on FS, Draft Final Text Revisions, Site 10, AOC 18	Broderick, John C California Regional Water Quality Control Board
3156	24 Jul 00	Technical Memorandum Report, Additional Soil Characterization, Site 10	CDM Federal Programs Corp.
3157	25 Jul 00	CDTSC Letter to AFBCA/DD March ROL Concerning Comments on Draft Final Work Plan for Additional Sampling, Site 10	Yemut, Emad B California Department of Toxic Substances Control

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3148	26 Jul 00	AFBCA/DD March ROL Letter to County of San Bernardino Concerning Recording Requirements, Site 02	Bridgewater, Mary AFBCA/DD March ROL
3141	27 Jul 00	Final Technical Memorandum, Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program, Apr 00	CDM Federal Programs Corp.
3178	28 Jul 00	AFBCA/DD March ROL Letter to Regulators Concerning Schedule for Completion, Basewide FS and ROD	Bridgewater, Mary AFBCA/DD March ROL
3181	Aug 00	ITIR, Landfill Gas Monitoring Data, Jan 00-Jun 00, Site 2	Earth Tech, Inc.
3165	01 Aug 00	AFBCA/DD March ROL Letter to CDTSC Concerning Response to Comments on Draft Technical Memorandum, Additional RCRA Characterization, Sites 7, 17	Bridgewater, Mary AFBCA/DD March ROL
3199	01 Aug 00	AFBCA/DD March ROL Letter to Regulators Concerning Final Sampling Approach, Additional Dioxin Characterization, Site 10	Bridgewater, Mary AFBCA/DD March ROL
3164	08 Aug 00	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Draft Technical Memorandum, Apr 00 Groundwater Sampling Data Results Summary	Yemut, Emad B California Department of Toxic Substances Control
3166	09 Aug 00	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Eighth Annual Groundwater Data Trends Report, LTM Plan	Broderick, John C California Regional Water Quality Control Board
3162	22 Aug 00	EPA Letter to AFBCA/DD March ROL Concerning Comments on Eighth Annual Groundwater Data Trends Report, LTM Plan	Chang, James EPA Region IX
3152	23 Aug 00	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Semiannual Report, Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 02	Broderick, John C California Regional Water Quality Control Board
3176	Sep 00	Draft SAP, Basewide Groundwater Monitoring Program and Water Supply Contingency Policy Groundwater Sampling Program	Earth Tech, Inc.
3622	Sep 00	Fact Sheet, Restoration Review, Vol 7, Issue 3, Cleanup Continues	AFBCA/DD Norton
3180	01 Sep 00	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Eighth Annual Groundwater Data Trends Report, LTM Plan	Yemut, Emad B California Department of Toxic Substances Control
3255	12 Sep 00	AFBCA/DD March ROL Letter to Regulators Concerning Announcement of BCT Meeting, 20 Sep 00	Bridgewater, Mary AFBCA/DD March ROL
3160	29 Sep 00	Final Eighth Annual Groundwater Data Trends Report, LTM Plan	CDM Federal Programs Corp.
3861	02 Nov 00	CDTSC Letter to Base Final Status Survey Plan for Building 752	Yemut, Emad B, California Department of Toxic Substances Control
3200	03 Oct 00	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 2	Yemut, Emad B, California Department of Toxic Substances Control
3177	16 Oct 00	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Eighth Annual Groundwater Data Trends Report, LTM Plan	Fair, Sharon, California Department of Toxic Substances Control
3209	03 Nov 00	TechLaw Letter to EPA Concerning Draft Comments on Draft SAP, Basewide Groundwater Monitoring Program and Water Supply Contingency Policy Groundwater Sampling Program	TechLaw Inc.

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3182	17 Nov 00	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 00	Earth Tech, Inc.
3207	28 Nov 00	FS, Draft Basewide Additional Soil Characterization Report, Sites 10, 12	CDM Federal Programs Corp.
3206	Dec 00	Draft Annual OM&M Report, Site 2	Bechtel Environmental, Inc.
3623	Dec 00	Fact Sheet, Restoration Review, Vol 7, Issue 4, Environmental Cleanup Update	AFBCA/DD Norton
3211	22 Dec 00	Draft Technical Memorandum Report, Results of Surface Samples Collected Adjacent to Site 07, IWTP	CDM Federal Programs Corp.
3213	28 Dec 00	CDTSC Letter to AFBCA/DD March ROL Concerning Comments on Basewide FS, Additional Soil Characterization, Sites 10, 12	Niou, Stephen California Department of Toxic Substances Control
3219	Jan 01	Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 2	Earth Tech, Inc.
3625	15 Jan 01	CDTSC Letter to Base Concerning Comment Period Extension for FS, Draft Basewide Report	Scandura, John E California Department of Toxic Substances Control
3223	06 Feb 01	AFBCA/DD March ROL Letter to Public Concerning Invitation to Annual Public Forum	Zabaneh, Mike AFBCA/DD March ROL
3627	08 Feb 01	CDTSC Letter to Base Concerning Comments on FS, Revised Draft Basewide Report	Niou, Stephen California Department of Toxic Substances Control
3629	13 Feb 01	Newspaper Article, "Public Notice, Annual Public Forum"	The San Bernardino Sun
3221	16 Feb 01	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Draft Annual OM&M Report, Site 02	Broderick, John C California Regional Water Quality Control Board
3222	16 Feb 01	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Basewide FS, Additional Soil Characterization, Sites 10, 12	Broderick, John C California Regional Water Quality Control Board
3183	19 Feb 01	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 00	Earth Tech, Inc.
3227	26 Feb 01	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 00	Broderick, John C California Regional Water Quality Control Board
3228	26 Feb 01	EPA Letter to AFBCA/DD March ROL Concerning Comments on OM&M, Draft Annual Report, Site 2	Chang, James EPA Region IX
3251	Mar 01	ITIR, Landfill Gas Monitoring Data, Jul 00-Dec 00, Site 2	Earth Tech, Inc.
3231	14 Mar 01	EPA Letter to AFBCA/DD March ROL Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 00	Chang, James EPA Region IX
3283	15 Mar 01	AFBCA/DD March ROL Letter to Resident Concerning Human Health Effects Caused by Base Activities	Zabaneh, Mike AFBCA/DD March ROL
3740	15 Mar 01	Base Letter to Regulators Concerning Proposed Approach for Addressing Ecological Resource Risk, Site 10	Zabaneh, Mike AFBCA/DD March ROL
3187	28 Mar 01	Technical Memorandum, Twelve Quarter Cyanide Data Trends Report for Wells Monitoring the Air Combat Camera Services Unit	Earth Tech, Inc.
3243	04 Apr 01	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Jul 00-Oct 00, Site 2	Niou, Stephen California Department of Toxic Substances Control

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3739	11 Apr 01	Ecological Risk Assessment Teleconference Meeting Minutes, 11 Apr 01, Site 10	AFBCA/DD Norton
3245	12 Apr 01	EPA Email to AFBCA/DD March ROL Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Jul 00-Oct 00, Site 2 or 12th Quarter Cyanide Data Trends Report for Wells Monitoring the Air Combat Camera Services Unit or Draft Technical Memorandum, Results of Surface Samples Collected Adjacent to Site 7, IWTP	Chang, James EPA Region IX
3249	27 Apr 01	CDTSC Letter to AFBCA/DD March ROL Concerning Comments on OM&M Draft Annual Report, Site 2	Niou, Stephen California Department of Toxic Substances Control
3252	27 Apr 01	Landfill Gas Flare Report, Source Test Results, Site 2	SCEC
3260	May 01	Draft Final SAP, Basewide Groundwater Monitoring Program and Water Supply Contingency Policy, Groundwater Sampling Program	Earth Tech, Inc.
3254	09 May 01	AFBCA/DD March ROL Letter to CDHS Concerning Response to Questions on Radionuclides Raised at Annual Public Forum	Zabaneh, Mike AFBCA/DD March ROL
3268	16 May 01	CRWQCB Letter to AFBCA/DD March ROL Concerning No Comments on Off-Base Water Supply Contingency Policy, Groundwater Sampling Program Annual Report, May 99-Apr 00 or Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 00	Broderick, John C California Regional Water Quality Control Board
3240	22 May 01	EPA Letter to AFBCA/DD March ROL Concerning No Comments on Final Basewide Soil Characterization, Basewide Radionuclide Characterization	Chang, James EPA Region IX
3262	23 May 01	CDTSC Letter to AFBCA/DD March ROL Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jul 00-Dec 00, Site 2	Niou, Stephen California Department of Toxic Substances Control
3266	Jun 01	Fact Sheet, Restoration Review, Vol 8, Issue 1, Air Force Hosts Third Annual Public Forum	AFBCA/DD Norton
3633	Jun 01	Fact Sheet, Facts About Naturally Occurring Radioactive Material in the Vicinity of Former Norton Air Force Base	AFBCA/DD Norton
3256	18 Jun 01	Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 01	Earth Tech, Inc.
4158	27 Jun 01	EPA Letter to Base Concerning Comments on the Adequacy of Site 5 Ecological Risk Assessment Effort for the Proposed Additional Work at Site 10 to Address Dioxin	Callahan, Clarence A EPA Region IX
3637	09 Jul 01	CRWQCB Letter to Base Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jan-Jun 00, Site 02	Broderick, John C California Regional Water Quality Control Board
3638	15 Jul 01	EPA Letter to Base Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jul-Dec 00, Site 02	Chang, James EPA Region IX
3639	15 Jul 01	EPA Letter to Base Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 01	Chang, James EPA Region IX
3643	17 Jul 01	Base Letter to SBIAA Concerning Draft Conservation Management Plan	Kempster, Thomas B AFBCA/DM
4019	17 Jul 01	Base Letter to public, response to questions concerning contamination	Mook, Philip H, Jr. AFBCA/DD

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3646	26 Jul 01	CDTSC Letter to Base Concerning Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 01	Niou, Stephen California Department of Toxic Substances Control
3647	27 Jul 01	CRWQCB Letter to Base Concerning No Comments on Draft Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 01	Broderick, John C California Regional Water Quality Control Board
4020	31 Jul 01	BCT Meeting Minutes	Mook, Philip H, Jr, AFBCA/DD-Norton
3649	Aug 01	ITIR, Landfill Gas Monitoring Data, Jan-Jun 01, Site 02	Earth Tech, Inc.
3650	Aug 01	Alternative Compliance Plan, Former Landfill Closure, Site 02	Earth Tech, Inc.
3652	01 Aug 01	CRWQCB Letter to Base Concerning No Comments on Multiple Documents	Broderick, John C California Regional Water Quality Control Board
3654	29 Aug 01	Base Letter to SCAQMD Concerning Alternative Compliance Plan, Landfill Closure, Site 02	Mook, Philip H, Jr AFBCA/DM
4021	31 Aug 01	Draft Final Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 00	
3655	21 Sep 01	CRWQCB Letter to Base Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jan-Jun 01, Site 02	Broderick, John C California Regional Water Quality Control Board
3657	28 Sep 01	Base Letter to USFWS Concerning Conservation Management Plan	Mook, Philip H, Jr AFBCA/DM
3658	Oct 01	Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 02	Earth Tech, Inc.
3660	Oct 01	Final OM&M Annual Report, Site 02	Bechtel Environmental, Inc.
3661	Oct 01	Final SAP, Basewide Groundwater Monitoring Program and Water Supply Contingency Policy Groundwater Sampling Program	Earth Tech, Inc.
3665	Oct 01	Conservation Management Plan	Earth Tech, Inc.
3666	01 Oct 01	CDTSC Letter to Base Concerning No Comments on Landfill Gas Monitoring Data, Jan-Jun 01 or Alternative Compliance Plan, Site 02	Niou, Stephen California Department of Toxic Substances Control
3667	02 Oct 01	Base Letter to Residents Concerning Public Participation in Environmental Cleanup	Mook, Philip H, Jr AFBCA/DM
4105	16 Oct 01	BCT Telecon Minutes	Mook, Philip H., Jr AFBCA/DM
3671	19 Oct 01	CRWQCB Letter to Base Concerning Comments on FS, Draft Basewide Report	Broderick, John C California Regional Water Quality Control Board
3673	25 Oct 01	CDTSC Letter to Base Concerning No Comments on Semiannual Postclosure Monitoring Report, Site 02	Niou, Stephen California Department of Toxic Substances Control
3677	Nov 01	ITIR, Landfill Gas Monitoring Data, Jul-Sep 01, Site 02	Earth Tech, Inc.
3678	05 Nov 01	CRWQCB Letter to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02	Broderick, John C California Regional Water Quality Control Board
3724	13 Nov 01	EPA Letter Base Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jan-Jun 01, Site 02	Chang, James EPA Region IX
3680	14 Nov 01	RPUD Letter to Base Concerning FS, Revised Draft Report	Evans, Thomas P Riverside Public Utilities Department

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3681	15 Nov 01	EPA Email to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02 or Technical Memorandum, Groundwater Sampling Data Results Report	Chang, James EPA Region IX
3682	27 Nov 01	CDTSC Letter to Base Concerning Request for Comment Extension on FS, Draft Basewide Report	Niou, Stephen California Department of Toxic Substances Control
3683	Dec 01	Fact Sheet, Restoration Review, Vol 8, Issue 2, Environmental Cleanup Progress Report	AFBCA/DD Norton
4130	Dec 01	Environmental Cleanup Plan RCRA Closure Plan of the IWL	Bechtel Environmental, Inc.
3684	03 Dec 01	EPA Letter to Base Concerning Request for Extension on Comment Period for FS, Basewide Report	Chang, James EPA Region IX
4101	13 Dec 01	BCT Meeting Minutes	Mook, Philip H., Jr AFRPA/DD-Norton
3688	17 Dec 01	CDTSC Letter to Base Concerning Comments on Landfill Gas Monitoring Data Report, Jul-Sep 01, Site 02	Niou, Stephen California Department of Toxic Substances Control
3689	07 Jan 02	CRWQCB Letter to Base Concerning No Comments on ITIR, Landfill Gas Monitoring Data, Jul-Sep 01, Site 02	Broderick, John C California Regional Water Quality Control Board
3697	Feb 02	Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02	Earth Tech, Inc.
4022	Feb 02	ITIR Landfill Gas Monitoring Data, Oct-Dec 01, Site 2	Earth Tech, Inc.
3628	11 Feb 02	EPA Letter to Base Concerning Comments on FS, Draft Basewide Report	Chang, James EPA Region IX
3698	21 Feb 02	EPA Email to Base Concerning No Comments on Landfill Gas Monitoring Report, Oct-Dec 01 or Report of Abandonment and Closure of SVE Wells, JP-4 Leakage Site, Bldg 805	Chang, James EPA Region IX
3699	22 Feb 02	USFWS Letter to Base Concerning Comments on FS, Revised Draft Basewide Report	Bartel, Jim A US Fish and Wildlife Service
4024	28 Feb 02	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD Norton
4030	28 Feb 02	Summary of Annual Public Forum	Mook, Philip H, Jr, AFRPA/DD Norton
4023	Mar 02	Conservation Management Plan	Earth Tech
3867	01 Mar 02	Newspaper Article, “Ex-base still has military mission”	San Bernardino Sun
3868	01 Mar 02	Newspaper Article, “Cleanup Progressing”	Redlands Daily Facts
3870	01 Mar 02	Newspaper Article, “Air Force trying to determine how to clean site at former base”	The Press-Enterprise
3869	06 Mar 02	Newspaper Article, “Base cleanup on target”	San Bernardino Sun
3702	28 Mar 02	Landfill Gas Flare Source Test Results Report, Site 02	SCEC
3706	Apr 02	OM&M Second Annual Report, Site 02	Earth Tech, Inc.
3707	Apr 02	Fact Sheet, Restoration Review, Vol 9, Issue 1, Air Force Displays Environmental Cleanup and Future Plans at the Fourth Annual Public Forum	AFBCA/DD Norton
4070	03 Apr 02	CRWQCB Letter to Base Concerning No Comments ITIR Landfill Gas Monitoring Data, Oct-Dec 01, Site 02	Broderick, John C, California Regional Water Quality Control Board

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3708	15 Apr 02	CRWQCB Letter to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 02	Broderick, John C California Regional Water Quality Control Board
4102	18 Apr 02	BCT Meeting Minutes	Mook, Philip H., Jr. AFBCA/DM
3715	May 02	ITIR, Landfill Gas Monitoring Data, Jan-Mar 00, Site 02	Earth Tech, Inc.
3721	03 May 02	CRWQCB Letter to Base Concerning No Comments on OM&M Second Annual Report, Site 02	Broderick, John C California Regional Water Quality Control Board
3722	09 May 02	Land Use Controls Communications Plan	AFBCA/DD Norton
3723	28 May 02	Base Letter to CIWMB Concerning Transmittal of Three Site 02 Documents	Mook, Philip H, Jr AFBCA/DD
3873	30 May 02	BCT Meeting Minutes	Mook, Philip H, Jr AFBCA/DM
3728	Jul 02	Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02	Earth Tech, Inc.
3875	Jul 02	Ninth Annual Groundwater Data Trends Report, LTM Plan	Earth Tech, Inc.
3728	Jul 02	Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Jan-Jun 02, Site 02	Earth Tech, Inc.
4104	15 Jul 02	BCT Meeting Minutes	Mook, Philip H., Jr. AFBCA/DM
3733	29 Jul 02	CRWQCB Letter to Base, No Comments, Technical Memorandum, Apr 02 Groundwater Sampling Data Results Summary Report	Broderick, John C, California Regional Water Quality Control Board
3874	29 Jul 02	Base Letter to BCT Concerning Remedy Decision Summaries and Indoor Air Risk Modeling	Mook, Philip H, Jr, AFBCA/DD
4025	Aug 02	OM&M Third Annual Report (2001), Site 02	Earth Tech, Inc
3737	Aug 02	ITIR, Landfill Gas Monitoring Data, Apr-Jun 02, Site 02	Earth Tech, Inc
4028	Aug 02	Supplemental Work Plan/FSP, Draft RCRA Closure Plan, IWL, Waste Solvent Sump Removal at AOC 33	Earth Tech, Inc.
3876	Aug 02	Fact Sheet, Restoration Review, Vol 9, Issue 2, Conservation Management Plan is Signed	AFBCA/DD Norton
3878	06 Aug 02	CRWQCB Letter to AFBCA/DD Concerning No Comments on Ninth Annual Groundwater Data Trends Report, LTM Plan	Broderick, John C, California Regional Water Quality Control Board
3887	28 Aug 02	BCT Meeting Minutes	Mook, Philip H, Jr, AFBCA/DD
3880	Sep 02	Work Plan, SAP Demolition and Soil Removal, AOC 40, Former Golf Course Maintenance Area	Earth Tech, Inc.
3881	Sep 02	RCRA Closure Plan Addendum SAP, Former IWTP Area	Earth Tech, Inc.
4131	06 Sep 02	Basewide FS Text Excerpts Presenting Indoor Air Inhalation Risk Assessment Results	CDM Federal Programs Corp.
4103	20 Sep 02	BCT Meeting Minutes	Mook, Philip H., Jr. AFRPA/DD
3883	30 Sep 02	CDTSC Letter to Base Concerning Draft SAP Demolition and Soil Removal, AOC 40	Niou, Stephen, California Department of Toxic Substances Control
3860	29 Oct 02	BCT Meeting Minutes	Mook, Philip H, Jr, AFRAP/DD
3883	30 Sep 02	CDTSC Letter to Base Concerning Draft SAP Demolition and Soil Removal AOC 40	Niou, Stephen, California Department of Toxic Substances Control
4026	Oct 02	Work Plan/SAP, IWL RCRA Closure Plan	Earth Tech, Inc

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4027	03 Oct 02	CDTSC Letter to AFBCA/DD Concerning No Comments on Ninth Annual Groundwater Data Trends Report, LTM Plan	Niou, Stephen, California Department of Toxic Substances Control
3884	07 Oct 02	TM Jul 02 Groundwater Sampling Data Results Summary Report	Earth Tech, Inc
3886	15 Oct 02	CDTSC Letter to Base concerning Remedy Decision Summaries and Indoor Air risk Modeling	Niou, Stephen, California Department of Toxic Substances Control
3860	29 Oct 02	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3892	Nov 02	ITIR Jul-Sep 02, Landfill Gas Monitoring Data, Site 02	Earth Tech, Inc.
3890	05 Nov 02	USEPA Letter to Base Concerning Draft SAP Demolition and Soil Removal, AOC 40	Chang, James, EPA Region IX
3891	07 Nov 02	Base Letter to CDTSC Concerning Air Combat Camera Services Clean Closure	Mook, Philip H, Jr. AFRPA/DD-Norton
3894	20 Nov 02	Base Letter to CDTSC Concerning Cyanide Analytical Results at ACCS Clean Closure	Mook, Philip H, Jr. AFRPA/DD-Norton
3904	Dec 02	Results of 2002 Protocol Live-Trapping Survey for Federally Endangered Kangaroo Rat	SJM Biological Consultants
3898	Dec 02	Fact Sheet, Restoration Review, Vol 9, Issue 3, Cleanup Team Achieves Significant Milestones	AFRPA
3895	18 Dec 02	CRWQCB Letter to Base Concerning Comments on Work Plan and SAP for Demolition and Soil Removal at AOC 40	Broderick, John C, California Regional Water Quality Control Board
3896	30 Dec 02	CRWQCB Letter to Base Concerning No comments on Technical Memorandum, Groundwater Sampling Data results Summary Report, Jul 02	Broderick, John C, California Regional Water Quality Control Board
3897	30 Dec 02	CDTSC letter to Base Partial Closure Certification Acceptance for Hazardous Waste Management Units at the Air combat Camera Services Unit	Jose Kou, California Department of Toxic Substances Control
3902	Jan 03	Semiannual Report (Jul-Dec 02), Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02	Earth Tech, Inc.
4133	Jan 03	Fact Sheet 16 (revised) Facts about Naturally Occurring Radioactive Material in the Vicinity of Former Norton Air Force Base	AFRPA/DD-Norton
3901	22 Jan 03	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3906	Feb 03	Corrective Action Work Plan, Site 02	Earth Tech, Inc.
4106	Feb 03	ITIR Landfill Gas Monitoring Oct-Dec 02, Site 02	Earth Tech, Inc.
3913	Feb 03	Annual Groundwater Data Summary Report IWTP	Earth Tech, Inc.
3905	25 Feb 03	TM Oct 02 Groundwater Sampling Data Results Summary Report	Earth Tech, Inc.
3914	27 Feb 03	BCT Meeting Minutes	Mook, Phil H, Jr, AFRPA/DD
3866	27 Feb 03	Summary of Annual Public Forum	Mook, Philip H, Jr, AFRPA/DD
3907	28 Feb 03	Newspaper Article, “Cleanup of air base site touted”	The San Bernardino Sun
3909	Mar 03	Results of 2002 Survey of Federally Endangered Santa Ana Woolly Star	Earth Tech, Inc
3908	03 Mar 03	CDTSC Letter to Base Concerning Delay of Review and Approval of Reports and Work Plans, IWL and IWTP	Kou, Jose California Department of Toxic Substances Control

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3912	06 Mar 03	EPA Letter to Base Concerning Extension of Review Period for Draft Final Basewide FS	Chang, James, EPA Region IX
3915	02 Apr 03	CRWQCB Letter to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Site 02	Broderick, John C, California Regional Water Quality Control Board
3929	10 Apr 03	Annual Landfill Gas Flare Source Test Results Report, Site 02	SCEC
3918	17 Apr 03	CRWQCB Letter to Base, No Comments on BWFS	Broderick, John C, California Regional Water Quality Control Board
3919	18 Apr 03	Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 03	Earth Tech, Inc
3888	May 03	Final IWL Construction Completion Report	Bechtel Environmental, Inc.
3928	May 03	ITIR Landfill Gas Monitoring, Jan-Mar 03, Site 02	Earth Tech, Inc
3930	May 03	Fact Sheet, Restoration Review, Vol 10, Issue 1, Air Force Presents Annual Environmental Cleanup Status at Public Meeting	AFRPA/DD Norton
4071	01 May 03	CRWQCB Letter to Base Concerning No Comments on Corrective Action Work Plan, Site 02	Broderick, John C, California Regional Water Quality Control Board
4072	01 May 03	CRWQCB Letter to Base Concerning Comments on Well Demolition Request	Broderick, John C, California Regional Water Quality Control Board
3923	01 May 03	CRWQCB letter to Base, Comments on TM Oct 02 Groundwater Sampling Data Results Summary Report	Broderick, John C, California Regional Water Quality Control Board
3924	02 May 03	CDTSC Letter to Base, Comments on Draft Final BWFS	Niou, Stephen, California Department of Toxic Substances Control
3925	02 May 03	USEPA Letter to Base, No Comments Draft Final BWFS	Chang, James, USEPA Region IX
3926	02 May 03	Base Letter to BCT Concerning Comments on Draft Final Basewide FS	Mook, Philip H, Jr AFRPA/DD-McClellan
3927	05 May 03	CDTSC letter to base Concerning Supplemental Work Plan and FSP for Draft IWL RCRA Closure Plan AOC 33	Plaza, Allan, California Department of Toxic Substances Control
4073	06 May 03	CDTSC Letter to Base Concerning Comments on Well Demolition Request	Niou, Stephen, California Department of Toxic Substances Control
3935	08 May 03	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD Norton
4074	14 May 03	CRWQCB Letter to Base Concerning No Comments on Draft Tenth Annual Groundwater Data Trends Report, LTM Plan	Broderick, John C, California Regional Water Quality Control Board
4075	22 May 03	Base Letter to CDTSC Concerning Response to DTSC Comments on Work Plan and SAP, IWL RCRA Closure Plan	Mook, Philip H, Jr, AFRPA/DD Norton
3944	Jun 03	Supplemental Work Plan/FSP for Draft IWL RCRA Closure Plan Waste Solvent Sump Removal at AOC 33	Earth Tech, Inc
3933	06 Jun 03	CDTSC Letter to Base, Conditional Approval for WP and SAP IWL RCRA Closure Plan	Plaza, Allan, California Department of Toxic Substances Control
3911	10 Jun 03	Final Basewide FS	CDM Federal

AR IR File Number	Document Date	Subject or Title	Author
3982	23 Jun 03	Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Semiannual Report, Jul-Dec 03, Site 02	Earth Tech, Inc
3934	23 Jun 03	CRWQCB Letter to Base Concerning No Comments on Draft Work Plan for RA at B752 Ra-226	Broderick, John C, California Regional Water Quality Control Board
4076	23 Jun 03	CRWQCB Letter to Base, Comments on TM Jan 03 Groundwater Sampling Data Results Summary Report, Comprehensive Groundwater Monitoring Program	Broderick, John C, California Regional Water Quality Control Board
3937	07 Jul 03	Technical Memorandum, Groundwater Sampling Data Results summary Report, Apr 03	Earth Tech, Inc
3938	21 Jul 03	CDTSC Letter to Base, Approval of Supplemental Work Plan/Field SAP for IWL RCRA Closure Plan, Waste Solvent Sump Removal at AOC 33	Garza, Yolanda, California Department of Toxic Substances Control
3948	Aug 03	ITIR Landfill Gas Monitoring Data, Apr-Jun 03, Site 02	Earth Tech, Inc.
3949	Aug 03	Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Jan-Jun 03, Site 02	Earth Tech, Inc
3942	05 Aug 03	USFWS Letter to Base Concerning Formal Section 7 Consultation for Disposal and Reuse of the Former Norton AFB	Goebel, Karen A, US Fish and Wildlife Service
3952	12 Aug 03	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3945	14 Aug 03	Base Letter to USFWS Concerning Formal Section 7 Consultation, Remedial Activities Associated with Landfill Site 10	Mook, Philip H, Jr, AFRPA/DD
3950	25 Aug 03	Five-year Constituent of Concern Monitoring, Site 02	Mook, Philip H, Jr, AFRPA/DD
3951	27 Aug 03	Base Letter to BCT Concerning Proposed Cleanup of Site 10, Site 12	Mook, Philip H, Jr, AFRPA/DD
3961	Sep 03	Fact Sheet, Restoration Review, Vol 10, Issue 2, Dioxin- and Metal-Contaminated Soil to be Removed at Two Sites	AFRPA/DD-Norton
3953	11 Sep 03	CRWQCB Letter to Base Concerning Technical Memorandum, Groundwater Sampling Data Results Summary Report, Apr 03	Broderick, John C, California Regional Water Quality Control Board
3960	11 Sep 03	CDFG Memo to Base Concerning Comments on Draft Action Memorandum for Site 10, Site 12	Lake, Victoria, California Department of Fish and Game
3954	12 Sep 03	CDTSC Letter to Base Concerning Comments on Draft Action Memorandum for Site 10, Site 12	Niou, Stephen, California Department of Toxic substances Control
3955	16 Sep 03	USEPA Letter to Base, Comments Draft Action Memorandum IRP Sites 10 and 12	Chang, James, US EPA Region IX
3959	19 Sep 03	CDTSC Letter to base, Additional Comments on RCRA Closure Plan Addendum SAP for IWTP	Garza, Yolanda, California Department of Toxic Substances Control
4080	24 Sep 03	Letter to Base Concerning Dioxin and Metals-Contaminated Soil	Sonnen, Michael B, PhD
3962	25 Sep 03	CDTSC Letter to Base, Comments on Draft Non-Time Critical Removal Action WP and Field SAP Sites 10 and 12	Niou, Stephen, California Department of Toxic Substances Control
3969	Oct 03	Final RCRA Closure Plan Addendum SAP, Former IWTP Area	Earth Tech, Inc

AR IR File Number	Document Date	Subject or Title	Author
3967	Oct 03	Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jul 03	Earth Tech, Inc
3964	Oct 03	Final Work Plan and FSP for Demolition and Soil Removal at AOC 40, Former golf Course Maintenance Area	Earth Tech, Inc
3963	02 Oct 03	USEPA Letter to Base, Draft WP and Field SAP, Sites 10 and 12	Chang, James, US EPA Region IX
4100	17 Oct 03	CRWQCB Letter to Base, Comments on Draft Non-Time Critical Removal Action WP and SAP IRP Sites 10 and 12	Broderick, John C, California Regional Water Quality Control Board
3966	17 Oct 03	CRWQCB Letter to Base, Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone, and Monolithic cap Moisture Monitoring, Site 02	Broderick, John C, California Regional Water Quality Control Board
3968	27 Oct 03	CRWQCB Letter to Base, Comments on Draft AM Sites 10 and 12	Broderick, John C, California Regional Water Quality Control Board
3974	29 Oct 03	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3970	Nov 03	Final Action Memorandum Site 10, Site 12	Earth Tech, Inc
3971	Nov 03	Final Non-Time Critical Removal Action Work Plan and FSP, Site 10, Site 12	Earth Tech, Inc
3973	Nov 03	ITIR Landfill Gas Monitoring Jul-Sep 03, Site 02	Earth Tech, Inc
3970	Nov 03	Final AM for IRP Sites 10 and 12	Earth Tech, Inc.
3971	Nov 03	Final Non-Time Critical Removal Action, WP and SAP IRP Sites 10 and 12	Earth Tech, Inc.
4029	01 Nov 03	Base Letter to USFWS Concerning Further Information for Formal Section 7 Consultation, Remedial Activities Associated with a Landfill (Site 10)	Mook, Philip H, Jr, AFRPA/DD
4081	25 Nov 03	CDTSC Letter to Base Concerning Comments on Final Non-Time Critical Removal Action Work Plan and FSP, Site 10 and Site 12	Alonzo, Manny, California Department of Toxic Substances Control
3981	Dec 03	Tenth Annual Groundwater Data Trends Report, LTM Plan	Earth Tech, Inc
3973	Nov 03	ITIR Landfill Gas Monitoring Data, Jul-Sep 03, Site 02	Earth Tech, Inc.
3976	Jan 04	Fact Sheet 11:1, Restoration Review “Air Force Conducts Final Cleanup Actions”	Earth Tech, Inc.
3975	Jan 04	Technical Memorandum, Groundwater Sampling Data Results summary Report, Oct 03	Earth Tech, Inc
3982	Jan 04	Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Jul-Dec 03 Site 02	Earth Tech, Inc.
3984	Feb 04	ITIR Landfill Gas Monitoring Data Former Landfill Closure Oct-Dec 03, Site 02	Earth Tech, Inc.
3999	Feb 04	Annual Groundwater Data Summary Report, IWTP	Earth Tech, Inc.
3983	09 Feb 04	AFRPA/DD Letter to Public Concerning Invitation to Annual Public Forum 26 Feb 04	Mook, Philip H, Jr, AFRPA/DD-Norton
4044	26 Feb 04	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3985	26 Feb 04	CDHS Memo to CDTSC Concerning Comments on Draft Final Work Plan for RA at Building 752 Ra-226 Exterior Spill Site	Bailey, Darice G, California Department of Health Services
4031	26 Feb 04	Summary of Annual Public Forum	Mook, Philip H, Jr, AFRPA/DD
3986	01 Mar 04	CRWQCB Letter to Base, Comments on TM Oct 03 Groundwater Sampling Data Results Summary Report	Broderick, John C, California Regional Water Quality Control Board

AR IR File Number	Document Date	Subject or Title	Author
3987	22 Mar 04	CRWQCB Letter to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring, Jul-Dec 03, Site 02	Broderick, John C, California Regional Water Quality Control Board
3995	24 Mar 04	Annual Landfill Gas Flare Source Test Results Report, Site 02	SCEC
3988	Apr 04	Final Work Plan for RA at Building 752 Ra-226 Exterior Spill Site	Weston Solutions, Inc and Kleinfelder, Inc
3989	Apr 04	Technical Memorandum, Groundwater Sampling Data Results Summary Report, Jan 04	Earth Tech, Inc
4033	Apr 04	Technical Memorandum, Groundwater Sampling Data Results Summary Report, Apr 04	Earth Tech, Inc
4045	21 Apr 04	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3989	Apr 04	Jan 04 Groundwater Sampling Data Results Summary Report	Earth Tech, Inc
3994	May 04	ITIR, Landfill Gas Monitoring Data, Jan-Mar 04, Site 02	Earth Tech, Inc
3995	24 Mar 04	Annual Source Test Results for IRP Site 02 Landfill Gas Flare	Earth Tech, Inc
4109	Jun 04	Fact Sheet: Air Force Reports Final Steps to Complete Environmental Cleanup and Deed Property	AFRPA/DD-Norton
4082	17 Jun 04	Base E-Mail to BCT Concerning Site 10 Confirmation Results	Mook, Philip H, Jr, AFRPA/DD-Norton
4107	Jul 04	Basewide Operable Unit Proposed Plan	AFRPA/DD-Norton
4115	Jul 04	Draft Basewide ROD	Earth Tech, Inc
4034	Jul 04	Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring, Site 02, Jan-Jun 04	Earth Tech, Inc
4033	Jul 04	TM Groundwater Sampling Data Results Summary Report Apr 04	Earth Tech, Inc.
4046	28 Jul 04	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD
3979	Aug 04	Closure Report, IRP Site 12	Earth Tech, Inc
3958	Aug 04	ITIR Landfill Gas Monitoring Data Apr-Jun 04, Site 02	Earth Tech, Inc.
4108	05 Aug 04	BW OU Proposed Plan Addendum	AFRPA/DD-Norton
4038	10 Aug 04	CDTSC Letter to Base Concerning Comment Period Extension for Draft Basewide ROD	Alonzo, Manny, California Department of Toxic Substances Control
4035	11 Aug 04	CRWQCB Letter to Base, Concerning Draft Basewide ROD	Broderick, John C, California Regional Water Quality Control Board
3980	Sep 04	Work Plan Addendum, Waste Solvent Sump Removal at AOC 33	Earth Tech, Inc
4041	Sep 04	Draft Closure Report for Site 07, Former Sludge Drying Beds	Earth Tech, Inc
4042	Sep 04	Draft Closure Report, AOC 40	Earth Tech, Inc.
4051	Sep 04	Work Plan, Additional Corrective Action IRP Site 02 Landfill	Earth Tech, Inc
4036	10 Sep 04	USEPA Letter to Base Concerning Draft Basewide ROD	Chang, James, EPA Region IX
3992	22 Sep 04	CRWQCB E-mail to Base Concerning Comments on Work Plan, Soil Gas Samples at AOC 33	Broderick, John C California Regional Water Quality Control Board
4039	23 Sep 04	CDTSC E-mail to Base concerning Comments on Work Plan, Soil Gas Samples at AOC 33	Niou, Stephen, California Department of Toxic Substances Control

AR IR File Number	Document Date	Subject or Title	Author
3991	23 Sep 04	USEPA E-Mail to Base, Comments on Work Plan, Soil Gas Samples AOC 33	Chang, James, EPA Region IX
4040	24 Sep 04	Base E-Mail to BCT Concerning Response to Comments, AOC 33 Work Plan Addendum	Mook, Philip H, Jr, AFRPA/DD-Norton
4047	Oct 04	Closure Report, IRP Site 12	Earth Tech, Inc
4048	04 Oct 04	CDTSC Memorandum to John Scandura, Concerning Comments on Draft Basewide ROD	Kou, Jose, California Department of Toxic Substances Control
4101	06 Oct 04	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD-Norton
4049	12 Oct 04	CDTSC Letter to Base Concerning Comments on Draft Basewide ROD	Niou, Stephen, California Department of Toxic Substances Control
4050	12 Oct 04	EPA Letter to Base Concerning Draft Basewide ROD	Chang, James, EPA Region IX
4052	26 Oct 04	CDTSC Letter to Base Concerning Comments on Draft Closure Report Site 07	Garza, Yolanda M, California Department of Toxic Substances Control
4043	27 Oct 04	CDTSC Letter to Base Concerning Comments on Draft Closure Report, AOC 40, Former Golf Course Maintenance Area	Niou, Stephen, California Department of Toxic Substances Control
4061	Nov 04	ITIR Landfill Gas Monitoring Data, Jul-Sep 04	Earth Tech, Inc
4099	Nov 04	ITIR Landfill Gas Monitoring Data, Oct-Dec 04	Earth Tech, Inc
4057	08 Nov 04	CRWQCB Letter to Base Concerning No Comments on Eleventh Annual Groundwater Data Trends Report, LTM Plan	Broderick, John C, California Regional Water Quality Control Board
4053	08 Nov 04	CRWQCB Letter to Base Concerning No Comments on Draft Closure Report for Site 07	Broderick, John C, California Regional Water Quality Control Board
4055	08 Nov 04	CRWQCB Letter to Base Concerning Draft Closure Report, AOC 40, Former Golf Course Maintenance Area	Broderick, John C, California Regional Water Quality Control Board
4084	09 Nov 04	Hillwood Letter to Base Concerning Request to Inactivate and Dismantle MW-225, 226, 267, and 285	Stone, John, Hillwood
4059	15 Nov 04	CRWQCB Letter to Base Concerning No Comments on Work Plan, Additional Corrective Action IRP Site 02 Landfill	Broderick, John C, California Regional Water Quality Control Board
4083	15 Nov 04	CRWQCB Letter to Base concerning Comments on TM, Groundwater Sampling Data Results Summary Report, Apr 04	Broderick, John C, California Regional Water Quality Control Board
4060	23 Nov 04	CRWQCB Letter to Base Concerning No Comments, Closure Report, IRP Site 12	Broderick, John C, California Regional Water Quality Control Board
4063	Dec 04	Draft Final Closure Report, AOC 40, Former Golf Course Maintenance Area	Earth Tech, Inc
4062	Dec 04	Draft Closure Report, IRP Site 10	Earth Tech, Inc
4089	Dec 04	Technical Memorandum Groundwater Sampling Data Results Jul 04	Earth Tech, Inc
4111	Dec 04	Results of 2003 Survey of the Federally Endangered Santa Ana Woolly Star	Earth Tech, Inc.
4097	01 Dec 04	BCT Meeting Minutes	Mook, Philip H, Jr, AFRPA/DD-Norton

AR IR File Number	Document Date	Subject or Title	Author
4093	07 Dec 04	EPA E-mail to Base Concerning No Comments on Closure Report, AOC 40, Former Golf Course Maintenance Area	Chang, James, EPA Region IX
4085	21 Dec 04	EPA E-mail to Base Concerning No Comments on Closure Report for Site 7	Chang, James, EPA Region IX
4064	31 Dec 04	CDTSC Letter to Base Concerning Partial Clean Closure Certification Acknowledgement for AOC 70 and Ecological Risk Reduction at IRP Site 10	Kou, Jose, California Department of Toxic Substances Control
4116	Jan 05	Eleventh Annual Groundwater Data Trends Report, LTM Plan 02-03, 3 volumes	Earth Tech, Inc
4088	Jan 05	OM&M Fourth Annual Report, Site 02 (2002)	Earth Tech, Inc
4090	13 Jan 05	CDTSC Letter to Base Concerning Comments on Draft Final Closure Report, AOC 40, Former Golf Course Maintenance Area	Alonzo, Manny, California Department of Toxic Substances Control
4091	19 Jan 05	CRWQCB Letter to Base Concerning Comments on Draft Closure Report for Site 10	Broderick, John C, California Regional Water Quality Control Board
4092	20 Jan 05	Base Letter to BCT Concerning Abandonment of Monitoring Wells MW-225, 226, 267, and 285	Mook, Philip H, Jr, AFRPA/DD-Norton
4094	31 Jan 05	CRWQCB Letter to Base Concerning Concurrence, Closure Report, AOC 40, Former Golf Course Maintenance Area	Broderick, John C, California Regional Water Quality Control Board
4110	Feb 05	Fact Sheet Vol. 12, Issue 1, Air Force Finalizes cleanup	AFRPA/DD Norton
4098	Feb 05	Postclosure Groundwater, Unsaturated Zone, and Monolithic Cap Moisture Monitoring Site 2 Semiannual Report (Jul-Dec 04)	Earth Tech, Inc.
4114	Feb 05	Results of 2004 Survey of the Federal Endangered Santa Ana River Woolly Star	Earth Tech, Inc.
4099	Feb 05	ITIR Landfill Gas Monitoring Data Oct-Dec 04, Site 02	Earth Tech, Inc.
4138	Feb 05	Annual Groundwater Data summary Report, IWTP	Earth Tech, Inc.
4140	Feb 05	TM Groundwater Sampling Data Results summary Report, Oct 04	Earth Tech, Inc.
4095	01 Feb 05	EPA Letter to Base Concerning Comments on Eleventh Annual Groundwater Data Trends Report, LTM Plan	Chang, James, EPA Region IX
4096	03 Feb 05	EPA Letter to Base Concerning comments on Draft Closure Report for Site 10	Chang, James EPA Region IX
4163	02 Mar 05	BCT Meeting Minutes	Mook, Philip H, Jr AFRPA/DD-Norton
4139	04 Mar 05	CRWQCB Letter to Base concerning Comments on TM Groundwater Sampling Data Results Summary Report, Jul 04	Broderick, John C California Regional Water Quality Control Board
4142	08 Mar 05	CRWQCB Letter to Base concerning No Comments on 4th Annual Report OM&M Site 02	Broderick, John C California Regional Water Quality Control Board
4113	11 Mar 05	CDTSC Letter to Base Concerning Comments on Draft Closure Report, Site 10	Steven Niou, California Department of Toxic Substances Control
4144	16 Mar 05	CDTSC Letter to Base Concerning Comments on Comprehensive Groundwater Monitoring Evaluation Report, IWTP	Durand, Maria, California Department of Toxic Substances Control
4146	29 Mar 05	CRWQCB Letter to Base Concerning No Comments on Semiannual Report on Postclosure Groundwater, Unsaturated Zone and Monolithic Cap Moisture Monitoring (Jul-Dec 04), Site 02	Broderick, John California Regional Water Quality Control Board

AR IR File Number	Document Date	Subject or Title	Author
4151	Apr 05	Draft Final Basewide ROD	Earth Tech, Inc.
4153	Apr 05	OM&M Fifth Annual Report Site 02 (2003)	Earth Tech, Inc.
4149	01 Apr 05	Groundwater Split Sampling Program Report	TechLaw, Inc.
4112	12 Apr 05	Landfill Gas Flare Source Test Results, Site 02	SCEC
4152	27 Apr 05	CRWQCB Letter to Base concerning No Comments on Technical Memorandum, Groundwater Sampling Data Results Summary Report, Oct 04	Broderick, John C California Regional Water Quality Control Board
4155	May 05	Response to Comprehensive Groundwater Monitoring Report, CDTSC Proposed Corrective Actions, Former IWTP	Earth Tech, Inc.
4154	23 May 05	EPA Letter to Base Concerning Comments ?Draft Final Basewide ROD	Chang, James EPA, Region IX
4156	27 May 05	CDTSC Letter to Base Concerning 30-day Extension of Review Period for Draft Final Basewide ROD	Scandura, John E California Department of Toxic Substances Control
4159	01 Jun 05	CRWQCB Letter to Base Concerning No Comments, Draft Final Basewide ROD	Broderick, John C California Regional Water Quality Control Board
4160	02 Jun 05	AFRPA Email to CDTSC Concerning Acceptance of Request for 30-day Extension Draft Final Basewide ROD	Niou, Stephen California Department of Toxic Substances Control
4162	Jul 05	Technical Memorandum, Report of Monitoring Wells Decommissioned During 2005	Earth Tech, Inc.
	25 Jul 05	CRWQCB Letter to Base Concerning No Comments on Draft final ROD	Broderick, John C California Regional Water Quality Control Board
	25 Jul 05	CDTSC Letter to Base Concerning Comments on Draft Final ROD	Niou, Stephen California Department of Toxic substances Control
	17 Aug 05	EPA Letter to Base Concerning Comments on Draft Final Basewide ROD	Chang, James EPA Region IX

APPENDIX B

REPORTER'S TRANSCRIPT, PROPOSED PLAN PUBLIC HEARING

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REPORTER'S TRANSCRIPT OF PROCEEDINGS

BASEWIDE OPERABLE UNIT PROPOSED PLAN

PUBLIC MEETING

SAN BERNARDINO CITY COUNCIL CHAMBERS

300 NORTH D STREET, SAN BERNARDINO, CALIFORNIA

AUGUST 11, 2004, 6:30 P.M.

Reported by Kelly Paulson, CSR No. 8295

SAN BERNARDINO, CALIFORNIA, AUGUST 11TH, 2004

* * *

MR. CHANG: Thank you, Phil. I'm James Chang. I'm the project manager from EPA and, you know, if you guys realized some of the things that Phil has shared, you might have also wondered, golly, you know, if the site had become -- or when the site was on the NPL list since 1987, why did it take us so long.

Well, you know, you can see that the CERCLA process, even though it's very cumbersome, it's a very methodical process. Phil kind of walked you through some of that already, you know, how he's had to do the investigation, then followed by the feasibility study, then by the ROD, and then, of course, the removals.

So it is a very methodical process that EPA ensures that it's followed closely, and the reason why we do that, of course, is to protect the public. And this is probably what I would consider the CERCLA process at its best because in addition to what Phil has done to be sure that the remedies are protective, CERCLA also ensures that the public is well informed.

So at this time I just want to thank Phil and the two Linda's here who have put this presentation together because it is very important that the public

1 understands what has been done.

2 And I'd also like to follow up on what Phil

3 said a little bit about Norton being a good news story,

4 and I truly agree with that. As you can see, you know,

5 Phil shared a little bit about the pump and treat

6 system. The pump and treat system from an EPA

7 perspective is probably one of the most difficult

8 remedies to implement, and I think the Air Force here

9 has done an exceptional job.

10 I would consider Norton probably being one of

11 the best in the nation I've seen, and I'm glad to say

12 that we're very near closure to that. And with the

13 baseline ROD coming up, you know, I'm looking forward to

14 signing that ROD from the EPA perspective, you know,

15 based upon, of course, the type of comments we get from

16 the public, but Phil has shared and EPA does agree that

17 what has been written in the ROD, which you guys have a

18 chance to comment on, we agree with the remedy selected.

19 We feel that they are protective and it will support

20 reuse and, of course, that's really the bottom line is

21 that, you know, we can get this land transferred working

22 with the Air Force so that the public can have its

23 beneficial use.

24 So I just wanted to also thank Phil for what

25 he's done from the Air Force perspective where, you

1 know, since '87 we've had a lot of tough decisions, and
2 some of these remedies you see, you know, we just didn't
3 pull them out of the air. You know, some of these
4 decisions have been hashed and rehashed three, four,
5 five, six, seven times until we've come to where we are
6 today.
7 So they are very tough methodical, you know,
8 thought-through decisions, and it's been a long time
9 coming. So I just want to thank the State and the
10 Air Force for coming along in the CERCLA process with
11 that. So thank you for being mere.
12 MR. MOOK: I had one thing before I turned it
13 over to clarifying questions. I had it written here and
14 I missed it, but I want to talk about schedule for the
15 ROD. It was our intention to sign this ROD before the
16 end of our fiscal year which was -- which is
17 30 September.
18 A couple of things have happened. One of
19 them is we've extended the public comment period to
20 10 September. If we were to get, you know, some really
21 salient hard-hitting comments that took, you know,
22 review and decision making, that could affect the
23 30 September.
24 There is another issue that doesn't deal with
25 the remedy that could slow down the ROD, and it's one

1 that DTSC, the State of California, and then my managers
2 back in Washington D.C. are working, you know, at this
3 higher level about the reimbursement of state costs
4 after the record of decision is signed.
5 So a site like Site 2, the landfill, that has
6 waste in place after the ROD is signed and there is an
7 ongoing remedy and there are institutional controls and
8 there's state land use covenants and there's deed
9 restrictions and stuff, DTSC wants/needs to stay
10 involved during that, and their involvement needs to be
11 paid for. The disagreement right now is who is going to
12 pay for that and how it's going to be paid for.
13 So we can go forward with our remedies. We
14 can be protective of human health and the environment
15 for a considerable period of time while the State and
16 the Air Force work out the mechanism for reimbursement
17 of their direct costs for oversight of our site. The
18 right people are involved. The decision makers are
19 involved. So it shouldn't take too long for these guys
20 to -- it shouldn't take too long for these guys to make
21 the resolution.
22 They're supposed to talk again, I think, on
23 the 16th of August, next week, and maybe something
24 substantial and permanent will come out of that
25 teleconference, but that is another thing that might

slow us down a little bit here. We will not sign the ROD until that is resolved. So that's the schedule, and with that I'll turn it back to Linda if there's questions.

MS. GEISSINGER: Yes. This is the Q and A part of it. So if there's something that you didn't understand that you'd like more clarification on, if Phil used too many acronyms, you want to know what ROD and CERCLA stands for, this is the time to ask those questions. It is not the public comment time.

Does anybody have any questions?

MR. CATOE: I do have one question. In regards to the one site that was exposed to Radium 226 and the plan to excavate to an off-site disposal site, you stated that site was in Utah and Wyoming, was it?

MR. MOOK: The question -- I think everybody heard it, but I'll just try and restate it for my own good -- was where is the soil from the radium paint facility removal action, where will it be in turn. And the two facilities, I think there's only two that are in the Western United States this side of the Mississippi, there's one in Utah, EnviroCare, and then there's one in Idaho.

So those are the two places, and they are licensed by the NRC regulatory commission, Nuclear

1 Regulatory Commission, to have this kind of waste, and
2 then they would be placed in a cell or an area and
3 monitored. Radium has a very long half life. It
4 doesn't actually decay, but it takes about 2,000 years
5 to go one half of its contamination. They figure to go
6 to zero, to approach zero, it has to do five half lives.
7 So that's like 10,000 years.
8 And you know from the news and things that
9 are going on, radionuclei disposal is a big issue and
10 this -- our side is just not -- compared to, you know,
11 some of the stuff they're talking about at DOE sites
12 and, you know, the nuclear testing facilities and stuff,
13 we just have a little bit of naturally occurring radium
14 that's been concentrated.
15 MR. CATOE: Well, my main question was
16 basically how was it transported.
17 MR. MOOK: Yes. Well, we have a
18 transportation plan. The soil is put into a specially
19 designed box. It's a covered lid. It's not, you know,
20 dumped into an open truck or anything like that. It's
21 put into -- they're called B-25 boxes. They're sealed
22 up. They're taken to a staging area. The whole
23 exterior of the box is scanned.
24 Radium is an alpha emitter. That's the
25 particle that it emits, and it is stopped by almost any

1 physical barrier. A piece of paper can actually shield
2 the radium paint or the alpha particle. What happens if
3 somebody ingests it and it gets stuck in your lungs or
4 like the ladies who used the paint and they'd lick their
5 paintbrushes, it can be very bad. But if there's any
6 kind of clothing or anything, it's fine.
7 So they put it in a box. They take it to an
8 area. They scan all around the box and make sure that
9 there's no loose material on the outside of it, and then
10 it's shipped off by a truck to one of those two
11 facilities.
12 MS. GEISSINGER: Any other questions?
13 MR. ROBERTS: Was there any evolution of
14 technology in going through this clean-up? Did you
15 learn anything new that you can use?
16 MR. MOOK: Well, yes, and not so much about
17 the decisions that we're making tonight, not so much
18 about the Basewide ROD as we did on the soil vapor
19 extraction and the pump and treat systems that were
20 installed for the central base unit.
21 You know, we made a lot of -- we were able to
22 do a much better job cleaning up at Norton than is
23 typical for other sites around the country, and it
24 mainly is the luck of the draw or heredity or whatever
25 that Norton Air Force Base has the right type of geology

1 that lends itself for pump and treat and vapor
2 extraction.
3 We also did a lot of investigations, and we
4 were able to enhance or do ways of investigating, both
5 radionuclei investigation and other investigations to
6 help save money, that then can be used for cleanup
7 rather than, you know, the characterization of the site.
8 And I guess the final one that I'd like to
9 say that was an enhancement or whatever for the process
10 is we used removal actions extensively. We went in
11 there early, determined we had an issue, and got it
12 taken care of, and that both saved money and reduced the
13 risk to human health and the environment, and it let the
14 property get into reuse quicker.
15 So we had a real good team, like you heard
16 from James and EPA and the State, working together for
17 this common goal of getting the place cleaned up as
18 quickly as possible. Even though we're talking about
19 1982, we did a lot of work and, you know, turned over a
20 lot of property.
21 MS. GEISSINGER: Any other questions?
22 All right. This is the point at which we ask for
23 official on-the-record public comments, and if you're
24 interested in making a comment, written responses will
25 be made available in the responsiveness summary which is

1 a supplement to the record of decision.

2 So it does become a public document, and it

3 is part of the administrative record for Norton. If you

4 don't want to make a verbal public comment, again, you

5 have until September 10th to fill out one of these and

6 send it to us in writing.

7 Anybody? Any comments? Jim, you always have

8 something to say.

9 MR. GOURLEY: Sure, I'll make a comment, as

10 long as I don't have to go down to the microphone.

11 MS. GEISSINGER: Okay. Just if you could

12 spell your name for the court reporter.

13 MR. GOURLEY: Yeah. It's Jim Gourley,

14 G-o-u-r-l-e-y, and I'd just like to express appreciation

15 of the agencies. As many of you know, when the base was

16 closed it was leased and turned over to Inland Valley

17 Loan Agency and San Bernardino International Airport

18 Authority, and that was in 1994 and 1995. And I've been

19 here since 1998 working with all of these folks on this

20 process, and there's a couple things I want to mention.

21 There's Phil, EPA, State of California, and

22 many others in the room who worked on this, and what's

23 really important frankly is getting this cleanup

24 approval and getting the title to the property because

25 title to the property allows us to go into

1 redevelopment.

2 And, in fact, we have a representative from

3 (inaudible) here tonight. They've been putting in some

4 very modern and up-scale buildings into this project

5 which is a tremendous development for the community,

6 adding jobs and so forth. So it's been a long road, but

7 I think as Phil said too, we've been very fortunate that

8 the cleanup has gone very well.

9 A lot of money has been spent too. I don't

10 know the number, and I don't know if anybody in the room

11 knows the number. Phil can maybe give us that number,

12 but it's not just a lot of time. It's a lot of money.

13 So what we're doing here tonight is really a milestone

14 because as these comments come in and we finish the

15 record of decision, we then frankly will shortly own all

16 the property and will be in the full development or

17 redevelopment program.

18 So again, thanks to you all. I've enjoyed

19 working with you. I've spent about six to seven years

20 myself that I've been here, and we've made an awful lot

21 of progress. So thank you for the opportunity to

22 comment.

23 MS. GEISSINGER: You're welcome. Thank you.

24 MR. MOOK: I did write down those numbers.

25 Overall to date to the end of fiscal year '04,

$133 million. FY '04 to completion, the estimate cost, $8.5 million. The selected alternatives that we discussed up here, their estimated cost is around $3.4 million once you kind of round off. These estimates are that, they're estimates. So I could say $3,396,000, but that would be accuracy that I don't have.

So 3.4 is plenty accurate, and hopefully there's still some cost savings. There isn't a cost savings on the $133 million that's already spent, but as we go through to completion, hopefully we can, you know, spend less taxpayer dollars on the eight and a half million that we have estimated to complete.

MS. GEISSINGER: Anyone else? Comments? No. Okay. Well, thank you very much for coming, and again, if you have second thoughts or want to put your comments in writing, we would appreciate those as well.

Thank you, Phil. Thank you very much.

(Meeting adjourned)

* * *

CERTIFICATION

I, Kelly S. Paulson, Certified Shorthand Reporter, in and for the State of California, do hereby certify:

That the foregoing proceedings were reported and transcribed into typewriting under my direction; that the foregoing is a true record to the best of my ability of the proceedings reported at that time.

IN WITNESS WHEREOF, I have subscribed my name this 26th day of August, 2004.

Kelly Paulson

Kelly S. Paulson, CSR No. 8295