

SIERRA ARMY DEPOT

Army Cleanup Program

Installation Action Plan Final

June 2024

TABLE OF CONTENTS

STATEMENT OF PURPOSE3

INSTALLATION OVERVIEW4

ACRONYMS5

PHASE TRANSLATION TABLE7

PROGRAM SUMMARY8

SITE-LEVEL INFORMATION9

 06815.1001_SIAD-001_TNT LEACHING BEDS 10

 06815.1002_SIAD-002_DRMO TRENCH AREA 12

 06815.1003_SIAD-003_ABANDONED LANDFILL 15

 06815.1010_SIAD-010_UPPER BURNING GROUND - HANSENS 17

 06815.1014_SIAD-014_BUILDING 210 AREA 18

 06815.1020_SIAD-020_1960 DEMOLITION AREA 20

 06815.1022_SIAD-022_OLD POPPING FURNACE 21

 06815.1074_SIAD-PFAS_PFAS 23

 06815.1057_SIAD-006-R-01_.50 CALIBER FIRING RANGE 24

 06815.1058_SIAD-009-R-01_HAZARD CLASSIFICATION TEST 26

 06815.1059_SIAD-012-R-01_LOWER BURNING GROUND 28

 06815.1060_SIAD-007-R-01_1960 DEMOLITION AREA 30

 06815.1062_SIAD-010-R-01_HONEY LAKE DEMOLITION RANG 32

 06815.1064_SIAD-014-R-01_UPPER BURNING GROUND 34

 06815.1065_SIAD-015-R-01_BLM-ADMINISTERED PUBLIC LA 36

SITE SUMMARY37

SITE CLOSEOUT SUMMARY 38

COMMUNITY INVOLVEMENT 39

FIVE-YEAR / PERIODIC REVIEW SUMMARY 40

STATEMENT OF PURPOSE

The Installation Action Plan (IAP) provides evidence that the Army is firmly committed to expeditious identification and cleanup of environmental contamination, and that the installation has a credible, organized program to carry out that commitment. The IAP provides an outline of the total multi-year environmental cleanup program for each site with ongoing or future planned restoration activity and includes the (1) environmental restoration requirements, (2) the rationale for the selected technical approach, and (3) foundation to develop corresponding financial needs for each cleanup site.

INSTALLATION OVERVIEW

Installation Name: SIERRA ARMY DEPOT

Installation City: HERLONG

Installation County: LASSEN

Installation State: CA

Regulatory Participation - Federal: N/A

Regulatory Participation - State: Lahontan Regional Water Quality Control Board (LRWQCB), Department of Toxic Substances Control (DTSC)

ACRONYMS

Acronym	Definition
ALF	Abandoned Landfill
AOPI	Area of Potential Interest
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CAMU	Corrective Action Management Unit
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
CRL	Cleanup Restoration & Liabilities
DPDO	Defense Property Disposal Office
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
ERD	Enhanced Reductive Dechlorination
ENV	Environmental
FS	Feasibility Study
FY	Fiscal Year
FYR	Five-Year Review
HE	High Explosive
IAP	Installation Action Plan
IR	Installation Restoration
IRP	Installation Restoration Program
IRA	Interim Remedial Action
IRZ	In Situ Reactive Zone
LRWQCB	Lahontan Regional Water Quality Control Board
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
mm	millimeter
MMRP	Military Munitions Response Program
MNA	Monitor Natural Attenuation
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol

Acronym	Definition
OPF	Old Popping Furnace
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutane Sulfonic Acid
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonic Acid
RAB	Restoration Advisory Board
Range C	Honey Lake Demolition Range C
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SC	Site Closeout
SI	Site Inspection
SIAD	Sierra Army Depot
SSA	Southern Sites Area
SVE	Soil Vapor Extraction
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TNT	Trinitrotoluene
UBG	Upper Burning Ground
UU/UE	Unlimited Use/Unrestricted Exposure
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WP	White Phosphorus
WSA	Wilderness Study Area

PHASE TRANSLATION TABLE

CERCLA Phase	RCRA Phase	RCRA UST Phase
Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
Remedial Design (RD)	Design (DES)	Design (DES)
Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
Remedial Action (Operations) (RA(O))	Corrective Measures Implementation (Operations) (CMI(O))	Implementation (Operations) (IMP(O))
Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

PROGRAM SUMMARY

Number of Open Sites with Response Complete/Total Open IR Sites: 3/8

Number of Open Sites with Response Complete/Total Open MR Sites: 7/7

Number of Open Sites with Response Complete/Total Open CC Sites: 0/0

SITE-LEVEL INFORMATION

06815.1001_SIAD-001_TNT LEACHING BEDS

Env Site ID: SIAD-001

Cleanup Site: TNT LEACHING BEDS

Alias: SIAD-001

Regulatory Driver: CERCLA

RIP Date: 11/15/1998

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	9/30/1989	5/4/1993
RD:	1/31/1995	8/1/1995
IRA:	--	--
RA(C):	10/15/1995	11/15/1998
RA(O):	1/1/1998	9/30/2054
LTM:	--	--

Site Narrative: The Trinitrotoluene (TNT) Leaching Beds Area (SIAD-001) is comprised of the TNT Leaching Beds and the paint shop. This is a multimedia site for both soils and groundwater. The TNT Leaching Beds consist of two former TNT leaching beds used for disposal of wastewater from the ammunition shell dismantling and washout facility. The two leaching beds were unlined shallow depressions about 50 by 50 feet and 50 by 100 feet. The water used to flush out explosives was transported through a concrete trench leading to the TNT leaching beds where it was allowed to evaporate and infiltrate the soils. From 1940 to 1949 the washout facility was in operation and at maximum capacity could process and reclaim TNT from 800 105mm shells per day. Over time, the paint shop operations released trichloroethylene (TCE). In 1993, the remedial investigation (RI)/feasibility study (FS) was completed and identified explosives and volatile organic compounds (VOC) in the soil and groundwater and in August 1995 the record of decision (ROD) was signed. The selected remedy included composting of explosives contaminated soils, institutional controls, and monitored natural attenuation (MNA) for the groundwater contamination. Groundwater monitoring started in 1995. In December 1997, the composting action was started and was completed in December 1998. The final site soil closure report was approved by state regulators in fiscal year (FY)99. In summer 2004, an in situ reactive zone (IRZ) demonstration program and enhanced reductive dechlorination (ERD), molasses injections were implemented to accelerate the degradation of VOCs (primarily TCE) in groundwater. Five-year reviews were completed 2005, 2011, 2017, and 2022. This site was designated short-term protective during the 2022 five-year review, where the following actions need to be taken for long-term protectiveness- re-evaluate the progress of the remedy component of MNA, enhanced with the implementation of the in situ reactive zone demonstration program for treatment of VOC contaminants of concern; add hexavalent chromium cis-1,2-dichloroethene, vinyl chloride, 2-amino-4, 6-dinitrotoluene, and 4-amino-2, 6-dinitrotoluene to the list of groundwater contaminants of concern (COC), identify the appropriate Protective Water Quality Objectives, and evaluate a remedial approach to address the impact from these contaminants at SIAD-001; evaluate nitrate as a potential COC and determine whether additional action is required at SIAD-001 or if the current remedial approach will address nitrate impacts; and conduct

additional investigations to delineate the VOC plume boundaries west of SIAD-001, near the Paint Shop Subsite. Evaluation was completed in 2019 and it was determined to continue injections to reduce concentrations. Because the future land use will remain industrial and hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for unlimited use/unrestricted exposure (UU/UE), five-year remedy reviews will continue indefinitely. Cleanup/Exit Strategy - the duration of remedial action (operations) (RA(O)) is unknown and because of this, the installation assumes 30 years of RA(O) is required based on DoD guidance; discuss with regulators whether to discontinue ERD to maintain MNA; annual groundwater monitoring and reporting; land use control (LUC) inspections; five-year review reports; and annual injections.

06815.1002_SIAD-002_DRMO TRENCH AREA

Env Site ID: SIAD-002

Cleanup Site: DRMO TRENCH AREA

Alias: SIAD-002

Regulatory Driver: CERCLA

RIP Date: 10/31/2000

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	9/30/1989	1/1/1997
RD:	1/2/1997	3/25/1998
IRA:	--	--
RA(C):	8/31/1999	9/30/2000
RA(O):	10/31/2000	9/30/2054
LTM:	--	--

Site Narrative: The Defense Reutilization and Marketing Office (DRMO) site formerly called Defense Property Disposal Office (DPDO) during the 1970s through the 1980s is located approximately one half-mile east of Main Magazine Road in the southern portion of Sierra Army Depot (SIAD). The DRMO site includes the DRMO Open Trench, the burn and debris area, and the active DRMO yard. The DRMO was reportedly used extensively from 1942 to 1973 and limited capacity from 1973 to 1987. Between 1942 and 1973, approximately 190 liters per day of waste oils, oil sludge, solvents, and cleaning fluids from vehicle maintenance activities in Buildings 208, 209, and 210 were disposed of and burned in the DRMO trench for disposal of waste oils, oil sludge, solvents, and cleaning fluids from vehicle maintenance activities. As a result, and 1991 legal driver of the Federal Facility Site Remediation Agreement, numerous investigations have been conducted over the years to determine nature and extent of the contamination and impacts to human health and the environment. The Master Environmental Plan completed in October 1988 is considered the preliminary assessment (PA) for this site. Thirty of the 34 areas investigated were determined to have little or no contamination migration potential. The remaining four sites including the DPDO were considered to potentially pose a threat due to off-post migration of munitions compounds, sludge, waste oils, and solvents containing TCE which was used until 1973 for degreasing operations. Engineering Division, currently known as Base Support either disposed of the waste in the DPDO (DRMO trenches) or it was used for dust suppression measures on roads. The 1991 final Phase 1 RI/FS included a geophysical survey, soil gas survey, excavation of eight test pits, and installation of eight soil borings and three water table monitoring wells. Two rounds of groundwater sampling were conducted on the three new monitoring wells. VOCs were detected in soil gas near the open trench. VOCs, semi-volatile organic compounds, and metals were detected in surface and subsurface soil adjacent to and beneath the open trench. There were TCE detections in the groundwater collected from the three monitoring wells. The report recommended additional investigation for which insufficient data were available. The draft final RI, 1992 group one follow-up RI field work included soil gas survey, soil borings for soil sample, six new wells for soil and groundwater sampling. Results

indicated potential adverse health effects resulting from exposures to hazardous substances in soil and TCE in groundwater and the site. The source and extent of TCE in groundwater was unknown. The RI/FS delineated the extent of groundwater contamination within the active DRMO yard; however, a groundwater mound was identified near the southeastern portion of the active DRMO yard. The June 1996 DRMO Trench Area follow-up RI provided additional data on the hydrogeology of the site which indicated that the groundwater mound did not affect contaminant movement. No further investigation was recommended as the data presented in the report, along with previously collected data, would be used to develop remedial alternatives and complete an FS for soil and groundwater beneath the DRMO Trench Area. The 1997 DRMO Trench Area FS Plan designated soil remediation of 1,450 cubic yards, soil vapor extraction (SVE) and bioventing. The effort would provide protection to human health and the environment by reducing the toxicity, mobility, and volume of COCs in soil. Therefore, the potential for future groundwater contamination would be reduced. In addition, potential health risks posed by COCs in soil could be eliminated. The final ROD/remedial action plan received regulatory approval March 1998. The remedy includes SVE and bioventing, excavation and off-site disposal, and natural attenuation with source removal in groundwater. Pump-and-treat was the designated technology for source removal at the time. Remedial action objectives for groundwater are to allow natural attenuation to prevent further groundwater contamination and provide a long-term reduction in contaminant levels to attempt to restore background concentrations to protect human health and the environment. Debris and removal, soil excavation, and/or backfilling was completed at the DRMO site August to October 1999. An RA(O) SVE and bioventing system was installed November 2000. SVE operated intermittently through 2003. Sampling during that time determined SVE/bioventing reduced concentrations of contamination in soils so the system was shut off to conduct a rebound study; however, concentrations continued to increase in the groundwater. The RA(O) pump-and-treat technology defined in the ROD removed insignificant amount of COCs in groundwater. As a result, regulators approved the 2004 IRZ demonstration program. The main objective of the demonstration program was to install injection wells to ERD of COCs in groundwater by feeding microorganisms with molasses. The technology appeared to work and was fully implemented with the approval of the 2010 DRMO Trench Area treatability test. The ERD addresses hot spots and is ongoing. SVE is currently being used during warmer months. The future land use on SIAD is anticipated to remain as an active US Department of the Army facility with potential industrial-type and military training use. Metals are present at the DRMO in low concentrations; they are comparable to background and acceptable values for soil used for parkland or industrial uses. The planned long-term future use of the site is storage and salvage of materials and supplies which will prohibit residential and agricultural development. Furthermore, COCs prohibit use and restrict exposure to groundwater. This site was designated short-term protective during the 2022 five-year review where the following actions need to be taken for long-term protectiveness- add cis-1, 2-dichloroethene, vinyl chloride, and perchlorate to the list of groundwater COCs, identify appropriate project water quality objectives, and evaluate if the current remedial approach will address cis-1, 2-dichloroethene, vinyl chloride, nitrate, and perchlorate impacts at SIAD-002; evaluate nitrate as a potential COC and determine whether additional action is required at SIAD-002 or if the current remedial approach will address nitrate impacts; complete the ERD rebound evaluation initiated in 2019 to determine if monitored natural attenuation will achieve the remedial action objective of limiting contaminant migration and degradation rates to within acceptable ranges to the state of California and the Army; and conduct additional investigations to delineate the trichloroethene plume boundary southwest of SIAD-002 and south of DMO-07-MWA where trichloroethene concentrations exhibit an increasing trend. Because the future land use will remain industrial and hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue indefinitely. Cleanup/Exit Strategy - the duration of RA(O) is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. The duration for

RA(O) and five-year reviews are projected for rolling 30 years. This site is in the RA(O) phase and includes annual groundwater management and reporting, ERD injections, and LUCs with mandated five-year reviews. The small SVE system as part of the RA(O) continues intermittently.

06815.1003_SIAD-003_ABANDONED LANDFILL

Env Site ID: SIAD-003

Cleanup Site: ABANDONED LANDFILL

Alias: SIAD-003

Regulatory Driver: CERCLA

RIP Date: 9/30/2013

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	10/1/1990	8/24/2007
RD:	8/25/2007	1/26/2009
IRA:	--	--
RA(C):	8/31/2003	9/30/2013
RA(O):	1/9/2004	9/30/2054
LTM:	--	--

Site Narrative: SIAD-003 is made up of the Abandoned Landfill (ALF) and the Southern Sites Area (SSA). From the early 1940s to 1965 the ALF was used as the main disposal area for SIAD domestic wastes. The primary method of disposal was waste burning followed by spreading and burning of the resulting residue. The ALF is a trench type landfill without a liner or leachate collection system. The dimensions of this site are approximately 1,600 by 1,500 feet (approximately 55 acres). The SSA is located south of the ALF and north of the potable supply wells PSW-02 and PSW-08. This area includes the equipment yard, equipment maintenance yard, fuel sump area, former officer's club pool, and Washrack area. Some of these areas are still active; however, the contamination is from past activities. Groundwater under the ALF and the SSA is contaminated with TCE and total petroleum hydrocarbons. Because of previous TCE detections, monitoring of potable supply wells is ongoing. In FY03, a preliminary groundwater model and a slug/pump test were completed, and six new guard wells were installed. In January 2003, perchlorate was detected (eight parts per billion) in well ALF-05-MWA; however, downgradient wells and adjacent wells did not detect perchlorate. There have been no perchlorate detections in subsequent sampling events. The RI/FS was conducted in 1990, 1996, 1997, and 2007. In summer 2004, an IRZ pilot study (molasses injections) was implemented to evaluate the technology to degrade VOCs (primarily TCE) in the groundwater. The ROD was signed in 2009 designating the selected remedy of ERD and MNA. The RA(O) phase began in 2004 for soils. Soil contamination was previously addressed in the three sites ROD through off-site disposal. In 2019 an MNA evaluation was completed, and the regulators approved temporary discontinuation of the ERD at the site. Monitoring MNA and potential rebound continues. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) five-year reviews were initiated in 2001. This site was designated short-term protective during the 2022 five-year review where the following actions need to be taken for long-term protectiveness- add cis-1,2-dichloroethene and vinyl chloride to the list of groundwater COC, identify appropriate cleanup levels and evaluate if the current remedial approach will address cis-1,2-dichloroethene and vinyl chloride impacts at SIAD-003; delineate the SSA western plume boundary near groundwater monitoring well MPA-03-

MWA and implement appropriate contingency measures per the 2018 Final Monitored Natural Attenuation Letter Work Plan; conduct additional investigations to delineate the SSA southern plume boundary near groundwater monitoring well SSA-01-MWA and potable supply well PSW-08 and implement appropriate contingency measures per the 2018 Final Monitored Natural Attenuation Letter Work Plan; conduct additional investigations to delineate the ALF plume boundary near groundwater monitoring well CCB-01-MWA and implement appropriate contingency measures per the 2018 Final Monitored Natural Attenuation Letter Work Plan; expand the SIAD-003 LUC boundary to include all wells with detected trichloroethene and prohibit use of and exposure to contaminated groundwater; evaluate nitrate as a potential COC and determine whether additional action is required at SIAD-003 or if the current remedial approach will address nitrate impacts. Because the future land use will remain industrial and hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue indefinitely. Cleanup/Exit Strategy - the duration of RA(O) is unknown and because of this the installation assumes 30 years of monitoring will be required based on DoD guidance. A model will be completed to determine the length of MNA groundwater monitoring to reach RC. Annual groundwater monitoring, reporting LUC inspections and five-year review reports will continue.

06815.1010_SIAD-010_UPPER BURNING GROUND - HANSENS

Env Site ID: SIAD-010

Cleanup Site: UPPER BURNING GROUND - HANSENS

Alias: SIAD-010

Regulatory Driver: CERCLA

RIP Date: 6/30/2006

RC Date: 6/30/2006

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	9/30/1990	4/9/2004
RD:	7/2/2004	8/15/2005
IRA:	--	--
RA(C):	11/30/2005	6/30/2006
RA(O):	11/15/2005	6/30/2006
LTM:	1/31/2007	9/30/2054

Site Narrative: The Upper Burning Ground (UBG) is a 4,030-acre area located north of the main depot. The site was used to burn primers, fuses, propellants, pyrotechnics, flare materials, and high explosives that could not be detonated. The site was also used as an open demolition area. Six past activity sub-sites comprise the UBG Installation Restoration Program (IRP) site. These sub-sites are Hansen's Hole, the old demolition area, the open trenches and ash pile, and the north and south extension of the upper burn area and the lower burn area. The remaining UBG area will be remediated under the Military Munition Response Program (MMRP). In 1990, the RI work at these six sub-sites began. Additional RI work for this multimedia site identified metals contamination in the soil and the groundwater contains naturally occurring arsenic at high concentrations. The focused FS was finalized, and the proposed plan was completed in 2004. In 2005, the ROD was signed. Remedy-in-place (RIP)/response complete (RC) was achieved in 2006 by removal of discarded military munitions, removal of metals-contaminated soil, and placement of the metals-contaminated soil from the six sub-sites in a corrective action management unit (CAMU) (constructed as a part of this action) in Hansen's Hole. CERCLA five-year reviews began in 2010. This site was designated protective during the 2022 five-year review. The UBG area is controlled open space and LUCs (both engineered and administrative) have been implemented to restrict site use/access and limit exposure to residual hazardous substances at the site. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Furthermore, annual audits are conducted to monitor and maintain the effectiveness of these LUCs. Cleanup/Exit Strategy - annual groundwater monitoring and LUCs, reporting, five-year review reports, and quarterly CAMU inspection and maintenance will continue for 30 years based on DoD guidance.

06815.1014_SIAD-014_BUILDING 210 AREA

Env Site ID: SIAD-014

Cleanup Site: BUILDING 210 AREA

Alias: SIAD-014

Regulatory Driver: CERCLA

RIP Date: 5/31/2011

RC Date: 9/30/2029

RC Reason: Not assigned

SC Date: 9/30/2059

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	11/1/1988	12/1/2009
RD:	8/31/2003	2/10/2011
IRA:	7/1/2000	5/31/2006
RA(C):	9/17/2009	5/31/2011
RA(O):	10/1/2009	9/30/2029
LTM:	10/1/2029	9/30/2059

Site Narrative: Building 210 operated as a vehicle maintenance facility from 1942 until 1949 at which time a popping furnace was installed. The popping furnace was used for the demilitarization of small-arms ammunition during the 1950s and 1960s to 1979. Additional activities conducted included sand blasting, spray painting, steam cleaning, powder packaging, and tank engine fogging. Various wastes were generated in Building 210, including degreasing solvents containing TCE, oils, sludge, sand blasting residue, and residues from popping operations. At the federal and state levels interest and concern of Building 210 have centered on the potential for groundwater TCE contamination to reach the potable supply wells and groundwater contamination migrating outside the SIAD property boundaries into the Doyle Wildlife Area. The master environmental plan completed in October 1988 is considered the PA for this site. Investigations conducted between 1983 and 2002 were called seven site investigations. The primary objectives of these investigations were (1) to define the horizontal and vertical extents of elevated chemical concentrations in soil and groundwater; (2) to evaluate the potential for COCs detected in soil to impact groundwater; (3) to evaluate the potential for vertical migration of COCs into deeper aquifer zones; and (4) to further characterize the geology and hydrogeology of the site to establish a numerical flow and transport groundwater model. Findings from the investigations concluded there may be elevated metals remaining east of Building 210, but the area has been paved; thereby limiting exposure. Impacts from metals to groundwater have not been observed. TCE is the primary COC in groundwater beneath the site. Several investigations were conducted in the vicinity of Building 210 in an attempt to identify the source of the TCE groundwater contamination. Two soil gas surveys were conducted as part of the RI/FS where VOCs, primarily TCE, were detected in 183 samples. The RI/FS stated, "Results of investigations at the Building 210 Area support the conclusion that the TCE tank with a direct discharge to the sewer, and surface drain are likely sources of TCE in groundwater at the site." The final ROD received regulatory approval February 2011. The selected remedy for the site includes the following primary components- on-site and off-site treatment of groundwater and soil gas using ERD with SVE enhancement, MNA, five-year reviews, and LUCs. Per the agreement with the state, the

installation of a full-scale reagent delivery system requiring 80 injection wells and 40 dual-screen ERD and SVE combination wells were installed. The ROD requires 20 years of RA(O) and 30 years of long-term management (LTM) designating selected remedy of ERD with SVE enhancement and MNA. However, all actions (RA(O) and LTM) are combined and captured under the RA(O) phase through 2029. Remedy construction began in September 2009. The RA(O) phase began in October 2009. The future land use on SIAD is anticipated to remain as an active US Department of the Army facility with potential industrial-type and military training use. Hazardous substances will remain at Building 210 Area at levels above those that allow for unrestricted use and will be assessed using five-year reviews. Industrial operations continue on the site. CERCLA five-year reviews were completed in 2013, 2017, and 2022. This site was designated short-term protective during the 2022 five-year review where the following actions need to be taken for long-term protectiveness- add cis-1,2-dichloroethene and vinyl chloride to the list of groundwater COC identify appropriate cleanup levels and evaluate if the current remedial approach will address cis-1,2-dichloroethene and vinyl chloride impacts at SIAD-014; conduct additional investigations to delineate the trichloroethene plume boundary east of the Building 210 Area near the Doyle Wildlife Area; evaluate the effectiveness of the on-site treatment of trichloroethene impacted groundwater via ERD injections at the Building 210 Area; additional site characterization may be necessary to determine if residual sources are contributing to TCE concentrations rebounds and migration; evaluate nitrate as a potential COC and determine whether additional action is required at SIAD-014 or if the current remedial approach will address nitrate impacts. Because the future land use will remain industrial and hazardous substances pollutants or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue indefinitely. Cleanup/Exit Strategy - this site is currently in the RA(O) phase which began in 2009. The RA(O) phase entails operation and maintenance involving ERD with annual reporting, MNA, five-year reviews and LUCs. SVE was discontinued per the three years identified in the ROD. Annual groundwater monitoring and reporting, LUC inspections, five-year review reports, and annual injections continue. Well decommissioning will follow.

06815.1020_SIAD-020_1960 DEMOLITION AREA

Env Site ID: SIAD-020

Cleanup Site: 1960 DEMOLITION AREA

Alias: SIAD-020

Regulatory Driver: CERCLA

RIP Date: 12/30/2005

RC Date: 12/31/2005

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1988	10/31/1988
SI:	4/30/1988	10/31/1988
RI/FS:	5/31/1992	6/1/1994
RD:	6/2/1994	10/1/1996
IRA:	--	--
RA(C):	8/31/2003	12/30/2005
RA(O):	--	--
LTM:	1/31/2006	9/30/2054

Site Narrative: The 1960 Demolition Area is located in the northern portion of SIAD. The site is about 1,700 by 2,000 feet (approximately 80 acres). This area was developed during the 1960s when the UBG demolition area was closed for construction. Between 1960 and 1961, 36,500-pound bombs (per detonation) were detonated at a rate of 12 times per day (432 bombs per day). Some of the metal fragments from this activity remain on the surface. In 1961, 0-chlorobenzylmalononitrile tear gas grenades were also detonated at a rate of 200 to 248 pounds per day for a three-month period. During the 1970s, Nike Hercules XM-30 motors were fired in silos on the site. The solid-based propellant was burned in the silos during the firings. Approximately 24 surface depressions (trenches) created by detonated bombs are located at the 1960 Demolition Area. A review of aerial photographs indicates the trenches are 300-500 feet long, 150 feet wide and up to 20 feet deep. In 1994, the RI was completed. This site was included in the nine sites ROD signed in October 1996. Information to date indicates that perchlorate containing munitions were not disposed of at this site. Nine sites ROD designated the selected remedy as institutional controls and access restrictions to address ordnance and explosives concerns. Fencing was completed in December 2005. Cleanup/Exit Strategy - LUCs and fence inspection and maintenance will continue indefinitely. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved.

06815.1022_SIAD-022_OLD POPPING FURNACE

Env Site ID: SIAD-022

Cleanup Site: OLD POPPING FURNACE

Alias: SIAD-022

Regulatory Driver: CERCLA

RIP Date: 6/30/2006

RC Date: 6/30/2006

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	10/31/1988	10/31/1988
SI:	10/31/1988	10/31/1988
RI/FS:	3/31/1997	4/8/2004
RD:	7/2/2004	8/15/2005
IRA:	--	--
RA(C):	8/31/2003	6/30/2006
RA(O):	--	--
LTM:	7/31/2007	9/30/2054

Site Narrative: Activities from 1942 to the mid-1950s at the Old Popping Furnace (OPF) consisted of operation of a popping furnace to safely burn and discharge ammunition. The popping furnace was subsequently dismantled and removed from the site. Air pollution control devices were not required from 1942-1954; therefore, the OPF was operated without emission controls. The OPF was used for demilitarization of small-arms munitions. Metal casings and lead recovered from the operation were disposed of by the DRMO. Contamination at the OPF Area was suspected because ash with metal debris was placed on the soil at the OPF Area. As a result of the contamination and 1991 legal driver of the Federal Facility Site Remediation Agreement, numerous investigations have been conducted over the years to determine nature and extent of the contamination and potential impacts to human health and the environment. The master environmental plan completed in October 1988 is considered the PA for this site and drove the subsequent 1995 and 1997 RI. The RI collected four soil samples and were analyzed for California 22 total threshold limit concentration metals. Lead, antimony, zinc, and copper were detected in surface soil samples at concentration exceeding the respective total threshold limit concentration values. These metals are used in the manufacture of small arms munitions. However, because only four surface soil samples were collected during the investigation, definitive conclusions were not drawn regarding the presence or extent of elevated concentrations of total threshold limit concentration metals in soil at the OPF area. In 1997 the DTSC requested additional sampling using a different analytical method for background metals. SIAD completed the 1997 draft RI/FS using new data. The report concluded elevated metal concentrations of lead decrease with distance from the OPF area. In 2000-2004 there were various RI/FS groundwater samples collected to test for explosives and metals. Arsenic concentrations in groundwater exceeded the California maximum contaminant levels and became a concern. Explosives were not detected. The Army and state regulatory agencies later agreed that arsenic was consistent with naturally occurring background concentrations in groundwater/soils. Lead was determined to be the major contaminant impacting soils. The three sites ROD was signed in 2005. The major components of the selected remedy are unexploded ordnance surface clearance,

excavation of lead contaminated soil to a depth of one foot below ground surface, consolidation of the contaminated soil into a four to six-acre footprint placed into a CAMU resembling a municipal landfill, LUCs, CAMU groundwater monitoring and CERCLA five-year site reviews. The RI indicated elevated concentrations of metals (primarily lead) in soil and elevated concentrations of naturally occurring arsenic in the groundwater. In 2004, the RI/FS and PP were finalized and in 2005 the three sites ROD was signed with remedy selection of lead contaminated soil consolidated into an on-site CAMU and groundwater monitoring. CAMU construction was completed in June 2006 and groundwater monitoring began in May 2005 (baseline event). CERCLA five-year reviews began in 2010. This site was designated protective during the 2022 five-year review. The UBG area is controlled open space and LUCs (both engineered and administrative) have been implemented to restrict site use/access and limit exposure to residual hazardous substances at the site. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Furthermore, annual audits are conducted to monitor and maintain the effectiveness of these LUCs. Cleanup/Exit Strategy - annual groundwater monitoring and LUCs reporting, five-year review reports, and quarterly CAMU inspection and maintenance will continue for 30 years based on DoD guidance.

06815.1074_SIAD-PFAS_PFAS

Env Site ID: SIAD-PFAS

Cleanup Site: PFAS

Alias: #

Regulatory Driver: CERCLA

RIP Date: 9/30/2028

RC Date: 9/30/2028

RC Reason: Not assigned

SC Date: 9/30/2028

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	9/30/2017	2/1/2022
SI:	9/28/2018	2/1/2022
RI/FS:	3/31/2022	9/30/2028
RD:	--	--
IRA:	--	--
RA(C):	--	--
RA(O):	--	--
LTM:	--	--

Site Narrative: Per direction from Deputy Chief of Staff G-9, this site was created to account for all per- and polyfluoroalkyl substances (PFAS) costs at the installation. The SIAD PA identified 15 areas of potential interest (AOPI) for investigation during the SI phase. SI sampling results from the 15 AOPIs were compared to risk-based screening levels calculated by the Office of the Secretary of Defense (OSD) for perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutane sulfonic acid (PFBS). PFOS, PFOA, and/or PFBS were detected in groundwater, surface water, soil, and/or sediment at 11 AOPIs; however, nine of the AOPIs had PFOS, PFOA, and/or PFBS present at concentrations greater than the risk-based screening levels. The SIAD PA/SI identified the need for further study in a CERCLA RI at the following AOPIs- SIAD Current Fire Training Area, Equipment Yard-Building 79, SIAD Fire Station, Obstacle Course Training Area, FH # 1-05 Nozzle Testing Area, Excavated Soil Laydown Area, Acid Shed, Garrison, and Mission Sewage Treatment Ponds. The RI is in progress.

06815.1057_SIAD-006-R-01_.50 CALIBER FIRING RANGE

Env Site ID: SIAD-006-R-01

Cleanup Site: .50 CALIBER FIRING RANGE

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	1/11/2003	5/1/2003
SI:	7/31/2004	12/31/2005
RI/FS:	1/31/2010	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/31/2013	9/30/2054

Site Narrative: The .50 Caliber Firing Range MMRP site consists of approximately 1,350 acres in the northern portion of the installation. The range fan for the .50 Caliber Range extends from east to west, with the furthest extent of the range fan situated on property that has been transferred to the Lassen Reuse Authority under Base Realignment and Closure (BRAC). The BRAC property is not included in the estimated acreage listed for this site. Also included is the surveillance test site that is located partially in the operational range and partially to the south of the operational range. The eastern most area is adjacent to the operational 7.62mm range. In 1997, the range fan for the .50 Caliber Firing Range (located in the northwest portion of the main depot area) was shortened to function as an active 7.62mm range, leaving a closed section of the range fan. The majority of this range is covered by Honey Lake Demolition Range C (Range C). This range was used from the 1940s to 1998. Items located at the site during the SI fieldwork in 2005 included white phosphorus (WP) grenade fragments, thermite, 40mm high explosive (HE), 40mm tear gas grenades, riot control grenades, land mines, flares, signal ground illumination grenades, illumination candles, a ground burst simulator, signal illumination flare, (ground parachute green star, ground green star cluster, ground parachute white star, and ground parachute red star) projectile fuses, .50 Caliber and 7.62mm expended rounds. The area is currently undeveloped. No known munitions response (MR) actions or clearances have been conducted at this MR site. Munitions and explosives of concern (MEC) surface sweeps were conducted in 2010. The ROD was completed December 2012 and LTM will continue thereafter. The remedy is institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the

duration of LTM is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land use changes, which may require additional remedial actions. If the land use changes, a revised exit strategy may be necessary. LTM remains indefinite.

06815.1058_SIAD-009-R-01_HAZARD CLASSIFICATION TEST

Env Site ID: SIAD-009-R-01

Cleanup Site: HAZARD CLASSIFICATION TEST

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	1/11/2003	5/1/2003
SI:	7/31/2004	12/31/2005
RI/FS:	1/31/2010	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/31/2013	9/30/2054

Site Narrative: This closed site of about 165 acres located in the northwestern portion of the main depot area was also known as an ammunition hazard test site. A small portion of this site is covered by the range fan of an active 7.62mm range. A larger portion covering the northwest corner of the range falls within the boundary of Range C. The munitions used in Range C take precedence over those used at this site; consequently, the overlapping acreage is included with Range C. According to a 1979 installation assessment, this area was used to blow/burn eight-inch, 40mm, 135mm, cluster bombs, and other conventional munitions for test purposes. According to the 1983 reassessment report, activities conducted at this site were designed to evaluate the fire capabilities and disposal procedures for improved conventional weapons. The hazard test site was used approximately three to four months per year, and all metal generated during the operations was collected and sent to the DPDO for disposal. SIAD staff stated that cluster bombs were demolished at this closed site from 1969-1973 and the site is heavily contaminated with scrap metal. The site is locked and is near a road which had been transferred to the state under BRAC. Under the IRP, a site inspection and an RI/FS were completed for this site. The IRP site (SIAD-024) that is geographically located with this site was closed in 1999 after USEPA conducted a walkthrough and determined that the site did not warrant any further investigation. The site is within the depot boundary fence. MEC surface sweeps were conducted in 2010. The ROD was completed in December 2012 and LTM will continue thereafter. The remedy is institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the duration of LTM is unknown and because of this the installation assumes 30 years of monitoring will be required based on DoD guidance.

Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land use changes, which may require additional remedial actions. If the land use changes a revised exit strategy may be necessary. LTM will continue indefinitely.

06815.1059_SIAD-012-R-01_LOWER BURNING GROUND

Env Site ID: SIAD-012-R-01

Cleanup Site: LOWER BURNING GROUND

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/15/2012

RC Date: 12/15/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	1/11/2003	5/1/2003
SI:	7/31/2004	12/31/2005
RI/FS:	1/31/2010	5/31/2012
RD:	--	--
IRA:	--	--
RA(C):	1/15/2010	12/15/2012
RA(O):	--	--
LTM:	1/15/2013	9/30/2054

Site Narrative: The Lower Burning Ground consists of approximately 1,315 undeveloped acres near the northeast corner of the main depot and encompasses a large, irregularly shaped area that measures approximately 5,300 feet by 1,800 feet. The 1983 reassessment report referred to the Lower Burning Ground as chemical systems laboratory area 24, and explains that it includes a rectangular area referred to as chemical systems laboratory area 25, or the interim burning area A. The site is included in the 1994 group IIIB RI, which describes the northern Lower Burning Ground area as having several open pits, associated soil mounds and long paired alignments of gravel. The central area contains a relatively large, elongated pit. The interim burning area also contains long, paired alignments. According to the 1983 reassessment report, between 1946 and the 1980s, the Army performed continuous pit and ground surface burning of powder projectiles and various pyrotechnics. Activities began during construction/renovation of the UBG and consisted of detonation, burning, and demolition of various types of ammunition, bombs, grenades, and pyrotechnics. Materials consisted of excess powder and waste products from demilitarization operations. Reportedly, there was a considerable amount of uncontrolled dumping of a wide variety of materials into pits. The material consisted of solvents, thinners, paint sludges, and degreasing sludges. In the northern portion of the Lower Burning Ground, the Army also burned tear gas and did some pre-burning of incendiaries. The tear gas is assumed to have been in the form of riot control grenades; however, bulk material may have been burned at this site. Periodically, metal scrap and debris were removed from the pits and taken to the DPDO for disposal. After removal, the pits were backfilled and covered. MEC surface sweeps were conducted in 2010. The ROD was completed December 2012 and LTM will continue thereafter. The remedy is institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year

remedy reviews will continue until UU/UE is achieved. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the duration of LTM is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land use changes, which may require additional remedial actions. If the land use changes, a revised exit strategy may be necessary. LTM will continue indefinitely.

06815.1060_SIAD-007-R-01_1960 DEMOLITION AREA

Env Site ID: SIAD-007-R-01

Cleanup Site: 1960 DEMOLITION AREA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	9/30/2004	8/1/2006
SI:	9/30/2005	9/30/2008
RI/FS:	3/31/2008	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/31/2013	9/30/2054

Site Narrative: Operations at the 1960 Demolition Area began in 1960 during renovation of the UBG. Between 1960 and 1961, thirty-six 500-pound bombs (per detonation) were detonated at a rate of 12 times per day (432 bombs per day). During these same years, tear gas detonation occurred at a rate of approximately 200-249 pounds/day for three months. Although the available documentation does not specify what form the tear gas was in, the assumption is that these were tear gas grenades. The 1960 Demolition Area contains two columns of 12 elongated trenches that form a total of 24 depressions created by the detonation of 500-pound bombs. The largest of the 24 depressions is located in the southern half of the site and is approximately 600 feet long, 100 feet wide, and 20 to 30 feet deep. The 1988 RCRA facility assessment (RFA) described the trenches as ranging in size from 400 to 600 feet long, 300 to 600 feet wide, and approximately 15 feet deep. The 1988 RFA refers to this area as solid waste management unit 13. The 1994 group IIIB RI described the depressions as having very steep-sided berms, devoid of vegetation, and deeply incised by erosional gullies. The surface of the site consists of an abundance of scattered metal debris especially in the southern half. The debris included jagged pieces of steel bomb fragments ranging in size from one inch to one foot or more in diameter. The area south of the main bomb craters contained concrete-lined silos, scattered wooden crates, and bomb casings. In 1961 and in the mid-1970s, the Army fired Nike Hercules XM-30 motors inside underground silos. During firing of the motors, solid-based propellant was burned in the silos. One cylindrical concrete structure was observed at the site during the 1988 RFA. The structure was described as below grade, three feet in diameter, and eight feet deep. It was reported as likely to be one of the silos used for firing Hercules XM-30 missile motors. The 1988 RFA reported that it was likely that several other silos are contained within the site. According to installation personnel, the silos had concrete sides with dirt floors and were demolished by explosive ordnance disposal personnel. The motor remains from missile testing were sent to the DRMO for salvage. Between 1973 and 1974, tear gas grenades were also burned at the site. Because the 1960 Demolition Area intersects with the .50 Caliber Firing Range, it may contain remnants from small arms training and from activities conducted on the surveillance test site. Because the range of

the 40mm grenade launcher used at the surveillance test site is not long enough to reach the 1960 Demolition Area, it is not likely that these rounds would have impacted this range. In 2006, the site was fenced. The site's final remedial action was previously documented with a ROD under the IRP. MEC surface sweeps were conducted in 2010 as part of the RI. The seven sites ROD (MR sites) was signed in December 2012 designating selected remedy as LUCs with five-year review inspections to address residual MEC. Remedial action (construction) (RA(C)) involved the fence construction at this site that was captured under site number 06815.1020 (SIAD-020) which is geographically the same location. The ROD was completed December 2012 and LTM will continue thereafter. The remedy is institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the duration of LTM is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land use changes, which may require additional remedial actions. If the land use changes, a revised exit strategy may be necessary. LTM will continue indefinitely.

06815.1062_SIAD-010-R-01_HONEY LAKE DEMOLITION RANG

Env Site ID: SIAD-010-R-01

Cleanup Site: HONEY LAKE DEMOLITION RANG

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	1/11/2003	5/1/2003
SI:	7/31/2004	12/31/2005
RI/FS:	1/31/2010	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/31/2013	9/30/2054

Site Narrative: This closed range (Range C) of about 861 acres is located along the western boundary of the installation. Range C lies within the maximum fragment arc of Honey Lake Demolition Range and comprises approximately one-quarter of the entire demolition range. The rest of the demolition range falls within BRAC property. Range C was used from 1945 to approximately 1958, with the most frequent use during the 1940s. The hazard classification test site was used from 1969 to 1973 and the .50 Caliber Range was used from 1960 to 1997. In 1996, the entire Honey Lake Demolition Range was evaluated as part of an archive search report. The archive search report team conducted a site visit and observed demolition range fragments on the extreme western edge of Range C. They also observed fragments further inland that were the result of the hazard classification test site, which is within this area. While 105mm HE shells were the most common item destroyed at the site, other typical munitions that were detonated or burned at the Honey Lake Demolition Range include .30, .45, and .50 caliber rounds (ball, tracer, and incendiary); 20mm HE incendiary cartridges; 60mm and 81mm mortars, HE and WP smoke; 75mm HE and WP smoke shells; 105mm HE shells; 2.36 inch HE anti-tank (bazooka) and WP rockets; 4.5 inch HE rockets; fragmentation, hexachloroethane smoke, red smoke, and WP smoke hand grenades; WP and anti-tank rifle grenades; Bangalore torpedoes, anti-personnel and anti-tank mines; pyrotechnics; and general purpose cluster and fragmentation bombs; and fuses. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the duration of LTM is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land

use changes, which may require additional remedial actions. If the land use changes, a revised exit strategy may be necessary. LTM will continue indefinitely.

06815.1064_SIAD-014-R-01_UPPER BURNING GROUND

Env Site ID: SIAD-014-R-01

Cleanup Site: UPPER BURNING GROUND

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	9/30/2004	8/1/2006
SI:	9/30/2005	9/30/2008
RI/FS:	3/31/2008	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/31/2013	9/30/2054

Site Narrative: The UBG demolition area is 4,030-acres. Activities at the UBG included large-scale burning, munitions-related demolition, and other disposal operations since the late 1940s or early 1950s. Aerial photographs indicate that the UBG underwent significant development between 1951 and 1954. In 1960 through 1961, the UBG was closed for construction/renovation. The last detonation operation at the UBG occurred in September 2001. Thirty thousand tons of HE, HE bombs, grenades, projectiles, warheads, rockets missiles, torpedoes, fuses, and large rocket motors were destroyed every year. The investigations from 1981-2008 fell under the IRP. The primary objectives of the IRP investigations were to define the horizontal and vertical extents of elevated COC concentrations in soil and groundwater, to evaluate the potential for COCs detected in soil to impact groundwater, and to evaluate the potential for vertical migration of contaminants into the deeper aquifer zones. The analytical results indicated fairly low concentrations of metals and explosives. The UBG then moved over to the MMRP under the Defense Environmental Restoration Program to address unexploded ordnance, discarded military munitions, and munitions constituents (MC) located on current and former military installations. The historical records review conducted for the UBG, completed in August 2006, marks the completion of the PA for the subsequent MMRP SI and RI/FS. RI field work, completed between August 2010 and February 2011, consisted of collecting sufficient MEC and MC data to complete site characterization at the area. MEC investigation activities included- a 100% sweep for surface MEC conducted over the site; random magnetometer-assisted surface sweeps at certain grid locations having a higher density of vegetation; and disposal of the MEC items found using blow-in-place and consolidated shots. At the conclusion of the RI field activities, all MEC items found were disposed of. The seven sites ROD was signed in December 2012 designating the selected remedy as LUCs with five-year review site inspections to address residual MEC. The LUCs reduce the potential for exposure by limiting access to the site through engineering controls (i.e., fencing and signage) and administrative controls. SIAD is anticipated to remain an active Army facility with potential industrial-type and military training use. Cleanup/Exit Strategy - This MMRP site will remain Army property for the foreseeable

future and thereby subject to security-controlled access and do not allow for UU/UE. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved.

06815.1065_SIAD-015-R-01_BLM-ADMINISTERED PUBLIC LA

Env Site ID: SIAD-015-R-01

Cleanup Site: BLM-ADMINISTERED PUBLIC LA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 12/31/2012

RC Date: 12/31/2012

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	9/30/2004	8/1/2006
SI:	9/30/2005	9/30/2008
RI/FS:	3/31/2008	5/31/2012
RD:	1/31/2010	12/31/2012
IRA:	--	--
RA(C):	1/31/2010	12/31/2012
RA(O):	--	--
LTM:	1/15/2013	9/30/2054

Site Narrative: On Jan. 12, 2006, a Bureau of Land Management (BLM) realty specialist established that BLM-administered public land withdrawn from public access consisted of 1,773 off-site acres adjacent to the eastern border of the UBG. According to a BLM news release, SIAD explosive experts destroyed more than 800 small, anti-personnel bombs in the area. They were described as baseball size bomblets that apparently scattered while Army depot Explosive Ordnance Disposal destroyed the larger cluster bombs at the UBG. The closure affected areas west of Skedaddle Road and south of Spencer Basin Road. The roads remained open, and signs were posted to warn the public that the areas could be dangerous. Two wilderness study areas (WSA), the Skedaddle Mountain WSA and the Dry Valley Rim WSA, are located near the property. WSAs provide opportunities for solitude and primitive types of recreation big game hunting, wildlife, wild horse and burro viewing. A work plan for sites SIAD-014-R-01 and SIAD-015-R-01 was completed in 2010. MEC surface sweeps were conducted in 2010. The seven sites ROD was completed December 2012 and LTM will continue thereafter. The remedy is institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC. The second five-year review was signed in 2022. This site was designated protective. LUCs (both engineered and administrative) have been implemented to restrict site use/access and to reduce and prevent the exposure of potential receptors to explosive hazards. Because hazardous substances, pollutants, or contaminants will remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Inspections are conducted to assess the protectiveness of the remedy as part of the five-year review process. Cleanup/Exit Strategy - the duration of LTM is unknown and because of this, the installation assumes 30 years of monitoring will be required based on DoD guidance. Implementation of institutional controls (administrative and legal), engineered controls, and access restrictions to address MEC will continue. The Army will conduct all the LUC/inspection activities until such time land use changes, which may require additional remedial actions. If the land use changes, a revised exit strategy may be necessary. LTM will continue indefinitely.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
06815.1004	SIAD-004_CONSTRUCTION DEBRIS LANDFILL	11/30/1995
06815.1005	SIAD-005_CHEMICAL BURIAL SITE	11/30/1995
06815.1009	SIAD-009_AMMO DEMIL AND RENOVATION	11/30/1995
06815.1011	SIAD-011_DIESEL SPILL AREA	6/30/2003
06815.1012	SIAD-012_BLDG 1003 AREA	11/30/1995
06815.1015	SIAD-015_LARGE SEWAGE TREATMENT PONDS	6/30/1998
06815.1016	SIAD-016_LOWER BURNING GROUND	12/31/1995
06815.1017	SIAD-017_NIKE MISSILE FUEL DISPOSAL SITE	3/31/1994
06815.1018	SIAD-018_NIKE MISSILE FUEL DISPOSAL SITE	3/31/1994
06815.1019	SIAD-019_TOXICS STORAGE AREA AT BLDG 578	3/31/1994
06815.1021	SIAD-021_EXISTING POPPING FURNACE	10/31/1988
06815.1024	SIAD-024_AMMUNITION HAZARD TEST SITE	8/31/1990
06815.1025	SIAD-025_""K"" BLOCK AREA	8/31/1990
06815.1026	SIAD-026_AMMO MAINTENANCE (BLDG #640)	8/31/1990
06815.1027	SIAD-027_ABANDONED LANDFILL #2	8/31/1990
06815.1028	SIAD-028_TRANSFORMERS-250 ON INSTALLATIO	8/31/1990
06815.1029	SIAD-029_HOSPITAL (BLDG #150)	6/30/1998
06815.1031	SIAD-031_STORAGE SILOS	8/31/1990
06815.1032	SIAD-032_BUILDING # T-79	8/31/1990
06815.1033	SIAD-033_POSSIBLE BURIAL SITE	8/31/1990
06815.1034	SIAD-034_SEPTIC TANKS/LEACH FIELDS	8/31/1990
06815.1035	SIAD-035_STORAGE IGLOOS (8)	8/31/1990
06815.1036	SIAD-036_BLG 75 & 79 AREA	8/31/1990
06815.1037	SIAD-037_DIESEL SUMP AREA	11/30/1996
06815.1038	SIAD-038_NORTHWEST WAREHOUSE AREA	10/31/1998
06815.1039	SIAD-039_SMALL SEWAGE TREATMENT PONDS	4/30/1999
06815.1042	SIAD-042_SW-AREA	11/30/1998
06815.1048	SIAD-056_STRATEGIC ORE PILES	9/30/1997
06815.1049	SIAD-057_INSTALLATION WIDE GW PLUME	11/30/1999
06815.1050	SIAD-058_SIAD SPILL AREAS (FINAL ROD SIT	9/30/2011
06815.1055	SIAD-PBC_PBC Contract Sierra AD	9/30/2008
06815.1067	CC-SIAD601_Building 640 UST	9/30/2015
06815.1069	CCPBA@SIAD_CR PBC Contract Sierra AD	12/31/2012
06815.1056	SIAD-008-R-01_BLOCK C	12/31/2005
06815.1061	SIAD-011-R-01_RIFLE RANGE D	12/31/2005
06815.1063	SIAD-013-R-01_ALPHA TEAM TRAINING AREA	4/30/2011
06815.1066	SIAD-016-R-01_GRAVEL PIT(STACY)	9/30/2008
06815.1068	PBA@MR SIAD_MR PBC contract Sierra AD	9/15/2018
06815.1070	SIAD-017-R-01_DRMO YARD	3/15/2018
06815.1073	CC-SIAD602_Open Burning Open Demolition	3/31/1998

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	11/27/2023
Technical Review Committee Establishment Date:	N/A
Restoration Advisory Board (RAB) Establishment Date:	11/30/1996
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Reasons for Not Establishing RAB:	N/A
RAB Date of Solicitation from Community:	N/A
RAB Results of Solicitation:	N/A
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A
Administrative Record Location:	Sierra Army Depot Building 63, 74 Currant Street, Herlong, CA 96113
Information Repository Location:	Sierra Army Depot Building 63, 74 Currant Street, Herlong, CA 96113

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	FYR	10/8/2019	1/21/2022	Planning a follow-on remediation services contract.	Evaluating current remedial approaches.	Pending results as field work is expected.
Planned	FYR	10/8/2024	10/8/2026	N/A	N/A	N/A