

# FINAL Preliminary Assessment Report Camp San Luis Obispo San Luis Obispo County, California

Perfluorooctane-Sulfonic Acid (PFOS) and Perfluorooctanoic  
Acid (PFOA) Impacted Sites  
ARNG Installations, Nationwide

January 2020

Prepared for:



Army National Guard Headquarters  
111 S. George Mason Drive  
Arlington, VA 22204



US Army Corps of Engineers, Baltimore District  
2 Hopkins Plaza  
Baltimore, MD 21201

Prepared by:

AECOM  
12420 Milestone Center Drive, Suite 150  
Germantown, MD 20876  
aecom.com

Contract Number: W912DR-12-D-0014  
Delivery Order: W912DR17F0192

## Table of Contents

Executive Summary .....	5
1. Introduction .....	9
1.1 Authority and Purpose .....	9
1.2 Preliminary Assessment Methods .....	9
1.3 Report Organization .....	10
1.4 Facility Location and Description .....	10
1.5 Facility Environmental Setting .....	11
1.5.1 Geology .....	11
1.5.2 Hydrogeology .....	12
1.5.3 Hydrology .....	12
1.5.4 Climate .....	14
1.5.5 Current and Future Land Use .....	14
2. Fire Training Areas .....	18
2.1 Former CAL FIRE Fire Training Area .....	18
2.1.1 Description and Operational History .....	18
2.1.2 Current Use, Topography and Surface Features .....	18
2.1.3 Surface Water and Groundwater .....	19
2.2 Former META Yard Fire Training Area .....	19
2.2.1 Description and Operational History .....	19
2.2.2 Current Use, Topography and Surface Features .....	21
2.2.3 Surface Water and Groundwater .....	21
2.3 CAL FIRE San Luis Obispo Unit Tactical Drill Grounds Training Site .....	21
2.4 Prescribed Building Burns by CAL FIRE for Structural Fire Training .....	22
3. Non-Fire Training Areas .....	24
3.1 CAL FIRE Cuesta Camp Tenant .....	24
3.2 O’Sullivan Airfield Shed .....	24
3.3 Former U.S. Army Air Strip (Historic Camp SLO Airfield) .....	25
3.4 Closed and Former Landfills .....	25
3.4.1 Sutter Avenue Landfill .....	25
3.4.2 Kansas Avenue Landfill .....	26
3.4.3 Story Park Landfill .....	26
3.5 California Specialized Training Institute Training Area .....	27
3.6 California Men’s Colony Wastewater Treatment Plant .....	27
3.7 Former Paint Booth in Building 1341 .....	27
3.8 Fuel Point .....	27
4. Emergency Response Areas .....	29
4.1 1972 de Havilland Beaver Plane Crash .....	29
5. Adjacent Sources .....	31
6. Preliminary Conceptual Site Model .....	33
6.1 AOI 1 Former CAL FIRE Training Area .....	33
6.2 AOI 2 Former META Yard Fire Training Area .....	34
6.3 AOI 3 CAL FIRE Cuesta Camp Tenant .....	34
6.4 AOI 4 O’Sullivan Airfield Shed .....	35
6.5 AOI 5 de Havilland Beaver Crash Site .....	35

6.6	AOI 6 Fuel Point .....	35
6.7	Secondary Migration of PFAS to Chorro Creek .....	36
7.	Conclusions .....	39
7.1	Findings .....	39
7.2	Uncertainties .....	40
7.3	Potential Future Actions .....	41
8.	References .....	44

## Figures

Figure ES-1	Summary of Findings
Figure ES-2	Preliminary Conceptual Site Model
Figure 1-1	Site Location
Figure 1-2	Groundwater Features
Figure 1-3	Surface Water Features
Figure 2-1	Fire Training Areas
Figure 3-1	Non-Fire Training Areas
Figure 4-1	Emergency Response Area
Figure 5-1	Adjacent Source
Figure 6-1	Areas of Interest
Figure 6-2	Camp SLO Preliminary Conceptual Site Model
Figure 7-1	Summary of Findings

## Tables

Table ES-1	AOIs at Camp SLO
Table 7-1	AOIs at Camp SLO
Table 7-2	No Suspected Releases, Camp SLO
Table 7-3	Summary of Uncertainties
Table 7-4	PA Findings Summary

## Appendices

Appendix A	Data Resources
Appendix B	Preliminary Assessment Documentation
	B.1 Interview Records
	B.2 Visual Site Inspection Checklists
	B.3 Conceptual Site Model Information
Appendix C	Photographic Log

## Acronyms and Abbreviations

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AOI	area of interest
ARNG	Army National Guard
bgs	below ground surface
CA ARNG	California Army National Guard
Cal Poly	California Polytechnic State University
Camp SLO	Camp San Luis Obispo
CDF (CAL FIRE)	Department of Forestry and Fire Protection (CAL FIRE)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMC	California Men's Colony
CSLRCD	Coastal San Luis Resource Conservation District
CSM	conceptual site model
CSTI	California Specialized Training Institute
EC	Environmental Compliance
ECM	ECM Consultants
EDR	Environmental Data Resources, Inc.
EPAS	Environmental Programs
FTA	Fire Training Area
gpm	gallons per minute
GSA	General Services Administration
KALF	Kansas Avenue Landfill
MBNEP	Morro Bay National Estuary Program
META	Motorized Equipment Training Academy
msl	mean sea level
ng/L	nanogram per liter
NGWA	National Ground Water Association
NOAA	National Oceanic and Atmospheric Administration
NOE	Notice of Exemption
PA	Preliminary Assessment
PCLF	Pennington Creek Landfill
PFAS	per- and poly-fluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
Phillips	Phillips 66 Company
ppt	parts per trillion
SALF	Sutter Avenue Landfill
SI	Site Inspection
SPLF	Story Park Landfill
UCMR3	3 <sup>rd</sup> Unregulated Contaminant Monitoring Rule

US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VSI	visual site inspection
WWTP	waste water treatment plant

## Executive Summary

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division, Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide*. The ARNG is assessing the potential exposure to humans and the effect on the environment related to processes at facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily in the form of aqueous film forming foam (AFFF) released during firefighting activities or training, although other PFAS sources are possible.

AECOM completed a PA for PFAS at the California Army National Guard (CA ARNG) Camp San Luis Obispo (Camp SLO) in San Luis Obispo County, California, to assess potential PFAS release areas and exposure pathways to receptors. The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR) report packages to obtain information relevant to potential PFAS releases
- Conducted a 1-day PA site visit on 22 May 2018
- Interviewed current CA ARNG personnel during the site visit including CA ARNG environmental managers and operations staff; and, the California Department of Forestry and Fire Protection services (CDF - known as CAL FIRE) representatives
- Completed visual site inspections at known or suspected PFAS release locations and documented with photographs
- Identified areas of interest (AOI) and developed a preliminary conceptual site model (CSM) to summarize potential Source-Pathway-Receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI

Six AOIs related to potential PFAS releases were identified at Camp SLO during the PA. The AOIs are shown on **Figure ES-1** and described in **Table ES-1** below:

**Table ES-1 AOIs at Camp SLO**

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Former CAL FIRE Fire Training Area	CAL FIRE	1995/1996 to 2010/2011
AOI 2	Former META Yard Fire Training Area	CAL FIRE	1978-2005
AOI 3	CAL FIRE Cuesta Camp Tenant	CAL FIRE	2013
AOI 4	O'Sullivan Airfield Shed	U.S. Army, CA ARNG and Civil Air Patrol	AFFF Storage dates not known
AOI 5	de Havilland Beaver Crash Site	U.S. Army	1972
AOI 6	Fuel Point	CA ARNG	Unknown

Based on documented PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in surface soil and intermittent surface water and sediments to site and construction workers and trespassers via ingestion and inhalation, subsurface soil to site and construction workers via inhalation, and groundwater to residents via ingestion. The preliminary CSM for Camp SLO is shown on **Figure ES-2**.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	1/16/2020	GIS BY	MS	1/16/2020	
SCALE	1:10,200	CHK BY	GR	1/16/2020	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	1/16/2020	

**Legend**

- Area of Interest
- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream

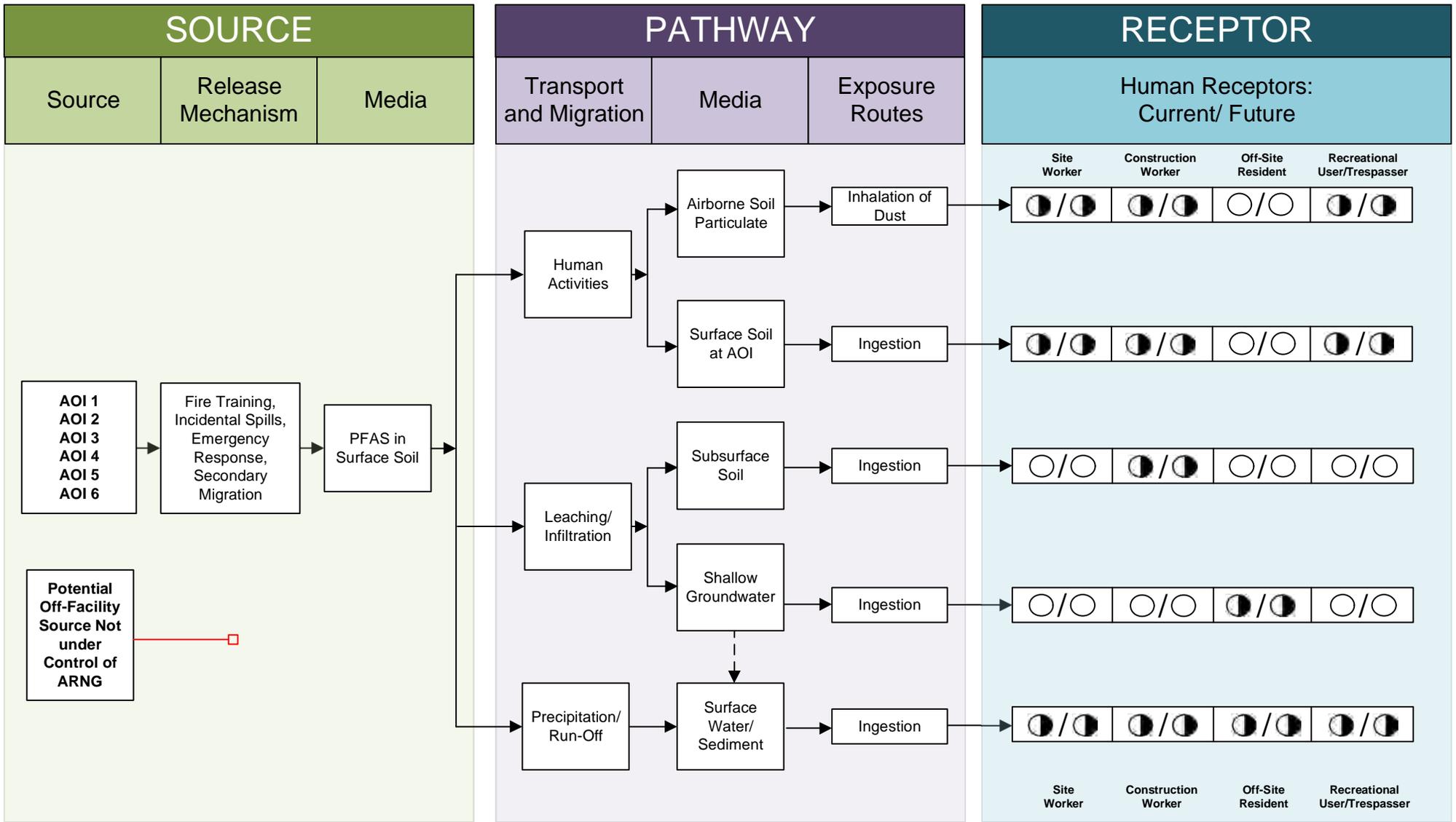


**Summary of Findings**

**AECOM**

12420 Milestone Center Drive  
 Germantown, MD 20876

**Figure ES-1**



**LEGEND**

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

**Notes:**

1. The resident and recreational user receptors refer to an off-site resident and recreational user.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure ES-2  
Preliminary Conceptual Site Model  
Camp San Luis Obispo

# 1. Introduction

## 1.1 Authority and Purpose

The United States (US) Army Corps of Engineers (USACE) Baltimore District on behalf of the Army National Guard (ARNG)-Installations & Environment Division, Cleanup Branch contracted AECOM Technical Services, Inc. (AECOM) to perform *Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) Impacted Sites at ARNG Facilities Nationwide* under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017. The ARNG is assessing potential effects on human health related to processes at their facilities that used per- and poly-fluoroalkyl substances (PFAS) (a suite of related chemicals), primarily releases of aqueous film forming foam (AFFF) although other sources of PFAS are possible. In addition, the ARNG is assessing businesses or operations adjacent to the ARNG facility (not under the control of ARNG) that could potentially be responsible for a PFAS release.

PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. The regulatory framework at both federal and state levels continues to evolve. The US Environmental Protection Agency (USEPA) issued Drinking Water Health Advisories for PFOA and PFOS in May 2016, but there are currently no promulgated national standards regulating PFAS in drinking water and the contaminant is an emerging contaminant. In the absence of federal maximum contaminant levels, some states have adopted their own drinking water standards for PFAS. On 13 July 2018, under the authority of the Deputy Director of the Division of Drinking Water, California issued drinking water notification levels of 14 parts per trillion (ppt) for PFOA and 13 ppt for PFOS. Notification levels are nonregulatory health-based advisory levels established for contaminants in drinking water for which maximum contaminant levels have not been established.

This report presents findings of a PA for PFAS at California Army National Guard (CA ARNG) at Camp San Luis Obispo (Camp SLO) in San Luis Obispo County, California, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations CFR Part 300), and USACE requirements and guidance.

This PA documents the known fire training areas (FTAs) as well as additional locations where PFAS may have been released to the environment at Camp SLO. The term PFAS will be used throughout this report to encompass all PFAS chemicals being evaluated, including PFOS and PFOA, which are key components AFFF.

## 1.2 Preliminary Assessment Methods

The performance of this PA included the following tasks:

- Reviewed available administrative record documents and Environmental Data Resources, Inc. (EDR) report packages to obtain information relevant to potential PFAS releases
- Conducted a 1-day PA site visit on 22 May 2018
- Interviewed current CA ARNG personnel during the site visit including CA ARNG environmental managers and operations staff; and, the California Department of Forestry and Fire Protection services (CDF - known as CAL FIRE) representatives
- Completed visual site inspection (VSI) at known or suspected PFAS release locations and documented with photographs

- Identified areas of interest (AOI) and developed a preliminary conceptual site model (CSM) to summarize potential Source-Pathway-Receptor linkages of potential PFAS in soil, groundwater, surface water, and sediment for each AOI

### 1.3 Report Organization

This report has been prepared in accordance with the USEPA *Guidance for Performing Preliminary Assessments under CERCLA* (USEPA, 1991). The report sections and descriptions of each are:

- **Section 1 – Introduction:** identifies the project purpose and authority and describes the facility location, environmental setting, and methods used to complete the PA.
- **Section 2 – Fire Training Areas:** describes the FTAs at the facility identified during the site visit.
- **Section 3 – Non-Fire Training Areas:** describes other locations of potential PFAS releases at the facility identified during the site visit.
- **Section 4 – Emergency Response Areas:** describes areas of potential PFAS release at the facility, specifically in response to emergency situations.
- **Section 5 – Adjacent Sources:** describes sources of potential PFAS release adjacent to the facility that are not under the control of ARNG.
- **Section 6 – Preliminary Conceptual Site Model:** describes the pathways of PFAS transport and receptors at each AOI.
- **Section 7 – Conclusions:** summarizes the data findings and presents the conclusions of the PA.
- **Section 8 – References:** provides the references used to develop this document.
- **Appendix A – Data Resources**
- **Appendix B – Preliminary Assessment Documentation**
- **Appendix C – Photographic Log**

### 1.4 Facility Location and Description

Camp SLO is located in southern San Luis Obispo County in central California, approximately 6.5 miles east of the Pacific Ocean and 5 miles northwest of the city of San Luis Obispo, California (**Figure 1-1**). The installation occupies approximately 5,320 acres along the northern and southern sides of and adjacent to Highway 1, extending from Cerro Remualdo and Chumash Peak in the southern portion, to the foothills of the Santa Lucia Range in the northern portion of the facility.

Camp SLO was originally established by California in 1929 on 5,800 acres as a National Guard Training Camp, known as Camp Merriam. In 1940, Congress authorized funds for the Army to lease about 44,000 acres of ranch lands and eventually purchased the leased parcels and additional lands in 1943. Construction of the Main Garrison began on 15 November 1940. Camp SLO officially began its mission as a training site in March 1941 (Camp Roberts Historical Museum).

From 1939 to 1945, Camp SLO served as a CA ARNG training site for horse cavalry, and the Navy also likely used the area for live-fire training activities during World War II. In 1947, control of the Camp reverted to CA ARNG, and the US Army operated the Southwest Signal Center at Camp SLO in 1951 during the Korean conflict. Part of Camp SLO remained under federal control

until 1 July 1965, when the entire property was returned to State control. Approximately 4,685 acres were relinquished to the General Services Administration (GSA) in 1965. The GSA then transferred the property to other agencies and individuals beginning in the late 1960s through the 1980s. Most of the property was transferred to California Polytechnic State University (Cal Poly) and Cuesta College for educational use. A total of 5,880 acres were retained by the CA ARNG for the purpose of developing a training facility for CA ARNG.

Camp SLO supports federal and state military training activities and serves as a year-round training site for the CA ARNG. Access to the site is restricted and inaccessible to the general public in some areas. The installation's mission is to maintain and allocate training areas, airspace, facilities, and ranges, in order to support CA ARNG. Additionally, the installation provides quality of life, logistical support to training units, and administrative services. Future land use is not anticipated to change.

## 1.5 Facility Environmental Setting

Camp SLO is located on the western slopes of the Santa Lucia Range, approximately 4.5 and 6.5 miles east of Morro Bay and the Pacific Ocean, respectively. The terrain in and around the facility is primarily the foothills of the Santa Lucia Range, which exhibits high relief with grasslands, rolling hills, and canyons. The facility is bounded to the north by Los Padres National Forest in the Santa Lucia Mountains and to the south by Cerro Romauldo and Chumash Peak, two hills that are a part of the Nine Sisters Peaks. The elevation of the facility ranges from approximately 190 to 2,440 feet above mean sea level (msl), with elevation increasing from west to east.

### 1.5.1 Geology

Camp SLO lies within the Pacific Border physiographic province, California Coast Ranges. The California Coast Ranges are predominantly composed of late Mesozoic and Cenozoic sedimentary rocks (Franciscan Complex) formed from subduction of the Pacific Plate under the North American Plate. The landscape also displays lateral deformation from the San Andreas Fault System, which dominates the California Coast Ranges, resulting in parallel sequences of linear ridges and valleys (Fuller, M. et al., 2015). The various geologic formations and features at Camp SLO and within the surrounding area are presented in **Figure 1-2**.

The majority of Camp SLO lies on the Franciscan Complex, which is a *mélange* of Cretaceous to Jurassic-age fragmented rock masses in a sheared matrix of argillite and crushed metasediments. Individual rock masses within the *mélange* range in size from less than a meter to kilometers. Blocks large enough to map include sandstone and shale in the western portion of the facility and metavolcanic rocks in the south and central portions of the facility. The sandstone and shale are made up of fine- to medium-grained greywacke sandstone interbedded with shale and siltstone. The metavolcanic rocks are primarily greenstone metamorphosed from basalt. The Jurassic-age serpentinitized ultramafic rocks lie on the north side of the Franciscan Complex, bounded on both sides by faults and composed of pervasively-sheared serpentinite (Wieggers, M.O., 2010).

Oligocene and Miocene-aged rocks unconformably lie above the Franciscan Complex and are composed of the Rincon Shale, the Obispo Formation, and the Monterey Formation. The Rincon Shale is located on the east side of the Chorro Reservoir and comprises primarily siltstone and silty claystone and locally contains zones of dolomite and arkosic sandstone. The Obispo Formation lies above the Rincon Shale to the northeast and is composed primarily of fine- to coarse-grained vitric tuff. The Monterey Formation begins just north of the Chorro Reservoir and is composed of laminated to thin-bedded shale, siliceous claystone, and soft diatomaceous siltstone (Wieggers, M.O., 2010).

Holocene and Pleistocene landslide deposits overlie the Monterey Formation and occupy the northeastern portion of the facility. The landslide complex is deeply dissected in a serpentinite and diabase dike-and-sill complex on the southwest side of the Santa Lucia Range (Wieggers, M.O., 2010). The Oceanic Fault is a reverse fault that strikes west-northwest, stretches from Santa Maria to its convergence with the San Simeon Fault just northwest of San Simeon, and runs through the northern side of the landslide deposits. Additional, smaller faults appear in the area as right-lateral, strike-slip faults with near vertical fault planes.

The Morro Rock – Islay Hill Volcanic Intrusive Complex forms a series of volcanic plugs and lava domes known as the Nine Sisters Peaks. Two of the peaks (Cerro Romauldo and Chumash Peak) are located in the southern side of Camp SLO along the facility boundary. The Morro Rock – Islay Hill Volcanic Intrusive Complex (Oligocene) is composed of porphyritic dacite, with flow banding common (Wieggers, M.O., 2010). The Intrusive Complex penetrates the Franciscan Complex, with the Franciscan Complex mélange on the slopes of Cerro Romauldo, and the Franciscan Complex sandstone and shale on the north slope of Chumash Peak.

The westernmost portion of the site is composed of young Holocene to late Pleistocene alluvial flood-plain deposits of unconsolidated sand, silt, and clay. These alluvial deposits are observed as thick as 50 feet and found along Chorro Creek as well as several other unnamed streams traversing the facility. The remaining unconsolidated overburden is also observed as thick as 50 feet and is primarily composed of silt and clay terrace deposits.

### 1.5.2 Hydrogeology

Regional groundwater flow is to the west towards the Chorro Valley Groundwater Basin and Morro Bay. Groundwater in the region is found in Pleistocene to Holocene age surficial deposits. The primary source of groundwater extracted from wells in the region is from generally thin alluvium deposits that blanket the San Luis Obispo Creek watershed. Recharge to the groundwater basin is from applied irrigation water, influence from streams, and infiltration of precipitation on the valley (State of California, 2004).

Both the city of San Luis Obispo and San Luis Obispo County extract groundwater from the San Luis Obispo Valley Groundwater Basin, located to the south and east of the facility. The northwest boundary of the San Luis Obispo Valley Groundwater Basin contacts the impermeable Franciscan Group rocks approximately 1 mile south of the facility. Domestic and public supply wells are located within 2 miles of the facility (**Figure 1-2**).

Groundwater in the unconsolidated deposits at Camp SLO tends to follow topography and flows generally to the southwest in areas north of Highway 1. South of Highway 1, groundwater flows generally towards Chorro Creek in a northwest or southwest direction.

Camp SLO is not located on a principal aquifer system, and the underlying bedrock formations are not generally recognized as water bearing. Groundwater is primarily found in the Holocene to late Pleistocene alluvial flood-plain deposits. Yields from the alluvial deposits are generally from 20 to 300 gallons per minute (gpm), and yields from the terrace deposits are generally around 20 gpm (State of California, 2004).

### 1.5.3 Hydrology

The majority of Camp SLO is within the Morro Bay Watershed, which is located in the central area of coastal San Luis Obispo County and covers an area of approximately 46,598 acres (Morro Bay National Estuary Program [MBNEP], 2013). Surface water features and watersheds are presented in **Figure 1-3**.

The watershed has two major sub-watersheds that drain to Chorro and Los Osos Creeks, both of which drain to the Morro Bay Estuary and then to the Pacific Ocean. The Chorro Creek sub-watershed, within which the majority of Camp SLO is situated, accounts for about 60 percent of the total land area draining to the Morro Bay Estuary (MBNEP, 2013). Relatively small land surface areas along the southeastern and eastern margins of Camp SLO are situated within the Upper and Lower San Luis Obispo Creek Watersheds, respectively. Water in the Morro Bay watershed is managed by the City of Morro Bay, Los Osos Community Services District, Golden State Water Company, and S&T Mutual Water Company (MBNEP, 2013).

Regional surface water features include Chorro Creek, which passes through the facility, and Chorro Reservoir, which is located in the northeastern portion of the facility. The Chorro Creek is a 2002 303(d)-listed impaired waterbody that flows into a Marine Protected Area (Morro Bay State Estuary, and MBNEP) and is designated as a critical coastal area along the central coast of California (California Coastal Commission, 2016). Sixty percent of the Chorro Creek watershed is classified as rangeland, and 20 percent is brushland.

Chorro Creek is regionally used for domestic and municipal water supply and agricultural supply purposes. Chorro Reservoir is used for hydroelectric power generation and recreation. It is owned by Camp SLO and operated by the California Men's Colony (CMC). The reservoir was constructed in 1941 to store runoff water for Camp SLO and was historically used for the facility's water supply along with three base wells. The three water wells at Camp SLO that were historically used for potable water purposes include Well No's 1, 2, and 3 (see **Figure 1-2**). Well No. 1 is 12-inches in diameter and approximately 51 feet below ground surface (bgs). No construction information is available for Wells No. 2 and 3 (Geosystem, 1996). According to the Camp SLO Environmental Scientist, the wells are without pumping equipment and are currently managed by San Luis Obispo County, who use the wells to gauge and monitor groundwater basin conditions (i.e. depth to groundwater).

The potable water supply for Camp SLO is from waters piped to the facility from Whale Rock Reservoir, which is situated approximately 11 miles to the northwest of the facility. The water from Whale Rock is piped to a water treatment facility located at Chorro Reservoir, where after treatment, water is distributed to the Camp SLO cantonment areas. The treatment facility is managed by the CMC. The CMC and Cuesta College receive State Water through the Chorro Valley Turnout. The Turnout conveys State Water from the Coastal Branch of the State Water pipeline to the CMC (MBNEP, 2013). Potable water for the coastal town of Los Osos (4 miles downgradient of Camp SLO) is provided from several groundwater wells.

The main surface water drainage feature for Camp SLO is Chorro Creek, which begins to the north of the facility, passes through the center of the facility in a northeast-southwest direction, and exits the facility on the southwest boundary. Chorro Creek is a fifth order stream and has approximately 14.2 miles of blue line stream (Coastal San Luis Resource Conservation District [CSLRCD], 2001). Tributaries of Chorro Creek at and within the vicinity of Camp SLO are intermittent and flow only when precipitation is sufficient. Chorro Creek flows into the Chorro Reservoir, after which it passes beneath Highway 1 and flows through all of the cantonment areas of Camp SLO. Downstream of Camp SLO, Chorro Creek converges with the Morro Bay Estuary located approximately seven miles west of the facility. Chorro Creek is fed by numerous small tributary streams that flow through the facility. These include Dairy Creek, which originates just north of the property boundary, cuts across the northwest corner of the facility, parallels the western property boundary until it converges with Chorro Creek in the southern portion of the facility.

According to the National Wetlands Inventory by the US Fish and Wildlife Service, emergent or forested/shrub wetlands are located at Camp SLO around Chorro Reservoir. **Figure 1-3** depicts the locations of the wetland areas. The wetlands in the reservoir area are generally non-contiguous, each less than about 2 acres in extent. Forested/shrub and emergent wetlands areas

exist in nearly all areas adjacent to Chorro Creek and its tributaries, within the various creeks' stream banks.

There are two oil/water separators at Camp SLO. One separator is located at the Camp SLO Directorate of Public Works yard and the other at FMS-19, the field maintenance shop. The only other infrastructure includes a series of above ground culverts in the cantonment.

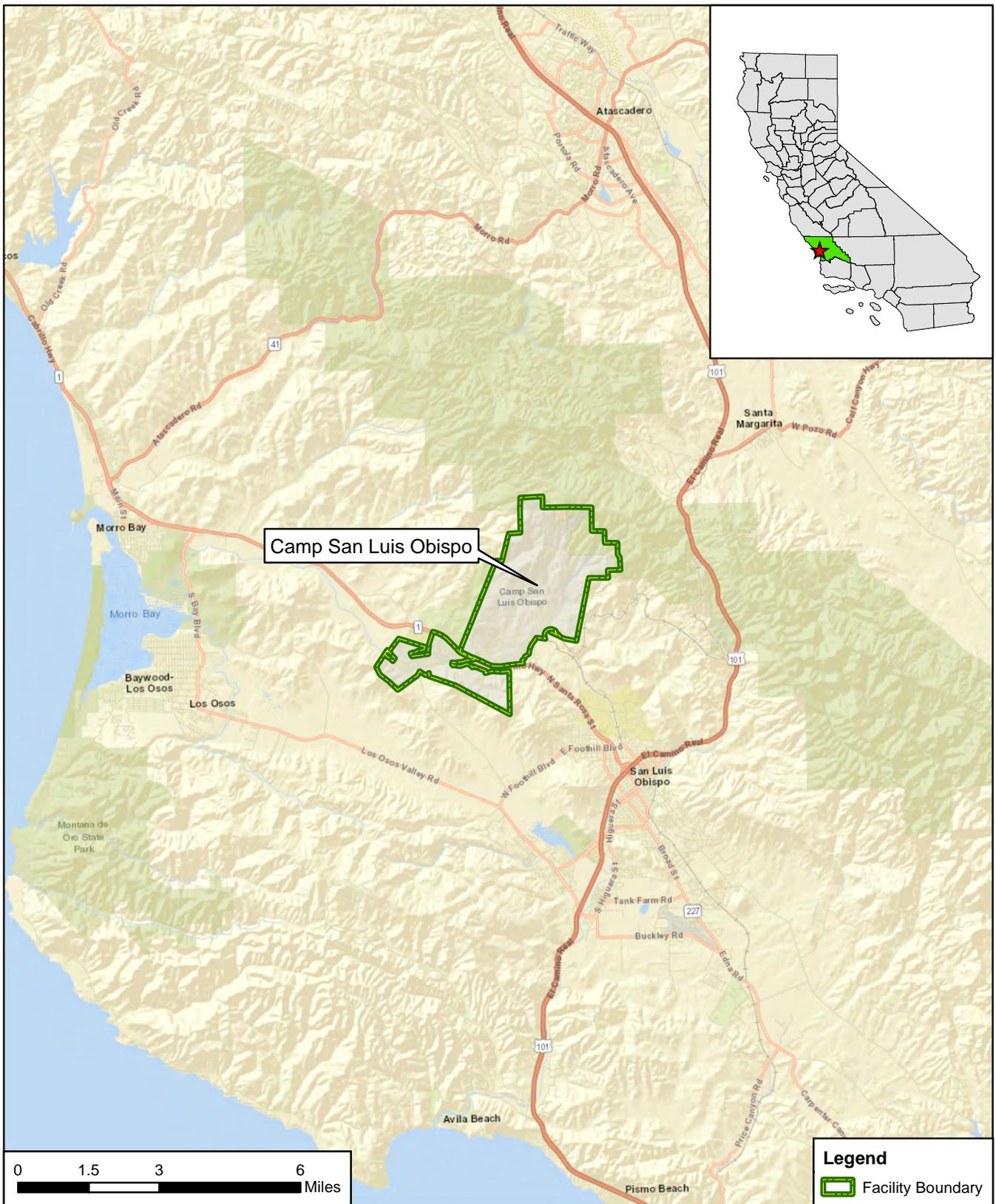
#### 1.5.4 Climate

The climate at Camp SLO is considered Mediterranean, with a subtropical dry summer, abundant sunshine, and modest precipitation in winter. Camp SLO has seasonally warm summers and mild winters. The average temperature is 59 degrees Fahrenheit (°F), with summer highs of 75.3 °F and winter lows of 43.8 °F (National Oceanic and Atmospheric Administration [NOAA], 2018). Average annual precipitation is 23.12 inches.

#### 1.5.5 Current and Future Land Use

Camp SLO serves as a year-round training site for the CA ARNG. The cantonment area of the facility is developed with numerous buildings and related infrastructure including paved and unpaved roadways and parking areas. The cantonment area occupies a small percentage of the total area controlled by the CA ARNG, the other, much larger lands of which are occupied by and used as training ranges. The ranges are generally in vegetated sloping areas, mostly to the north of Highway 1. Access to lands under Camp SLO purview is restricted and inaccessible to the general public in most areas.

The installation's mission is to maintain and allocate training areas, airspace, facilities, and ranges in order to support CA ARNG. Additionally, the installation provides quality of life, logistical support to training units, and administrative services. Tenants include CAL FIRE, CAL Trans, CA Conservation Corps, and CA Specialized Training, Inc. Future land use is not anticipated to change.



**Legend**

Facility Boundary

CLIENT	ARNG			
NOTES	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA			
REVISED	10/1/2018	GIS BY	MS	10/1/2018
SCALE	1:190,080	CHK BY	ZN	10/1/2018
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, Inetram, P Corp., NRCAN, Esri Japan, METI,	PM	RG	10/1/2018	

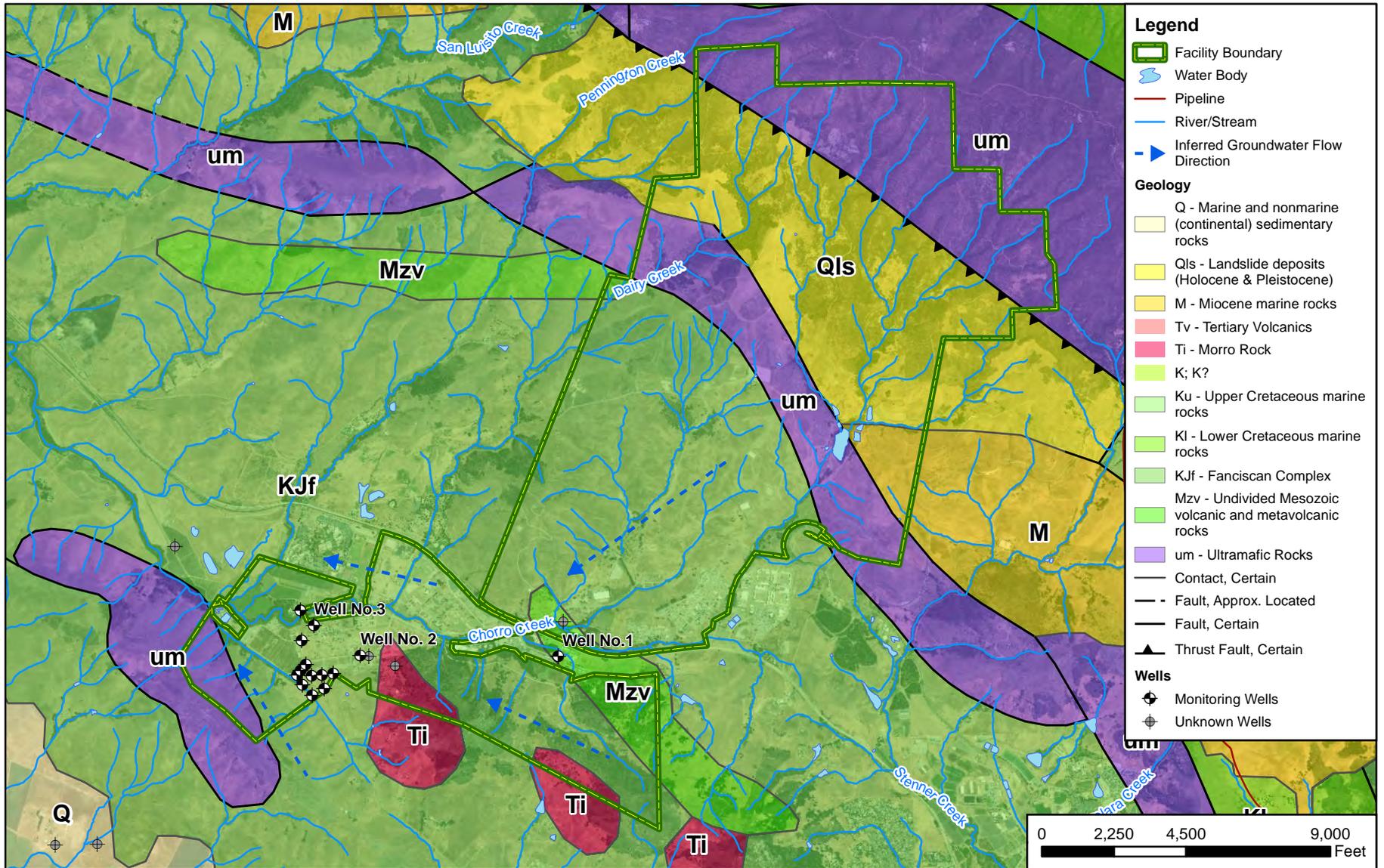


**Camp San Luis Obispo  
Site Location**



12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 1-1**



**Legend**

- Facility Boundary
- Water Body
- Pipeline
- River/Stream
- Inferred Groundwater Flow Direction

**Geology**

- Q - Marine and nonmarine (continental) sedimentary rocks
- Qls - Landslide deposits (Holocene & Pleistocene)
- M - Miocene marine rocks
- Tv - Tertiary Volcanics
- Ti - Morro Rock
- K; K?
- Ku - Upper Cretaceous marine rocks
- Kl - Lower Cretaceous marine rocks
- KJf - Franciscan Complex
- Mzv - Undivided Mesozoic volcanic and metavolcanic rocks
- um - Ultramafic Rocks

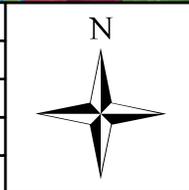
**Contacts and Faults**

- Contact, Certain
- Fault, Approx. Located
- Fault, Certain
- Thrust Fault, Certain

**Wells**

- Monitoring Wells
- Unknown Wells

CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA			
REVISED	10/4/2018	GIS BY	MS	10/4/2018
SCALE	1:54,000	CHK BY	GR	10/4/2018
Base Map Source:	Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community			
		PM	RG	10/4/2018



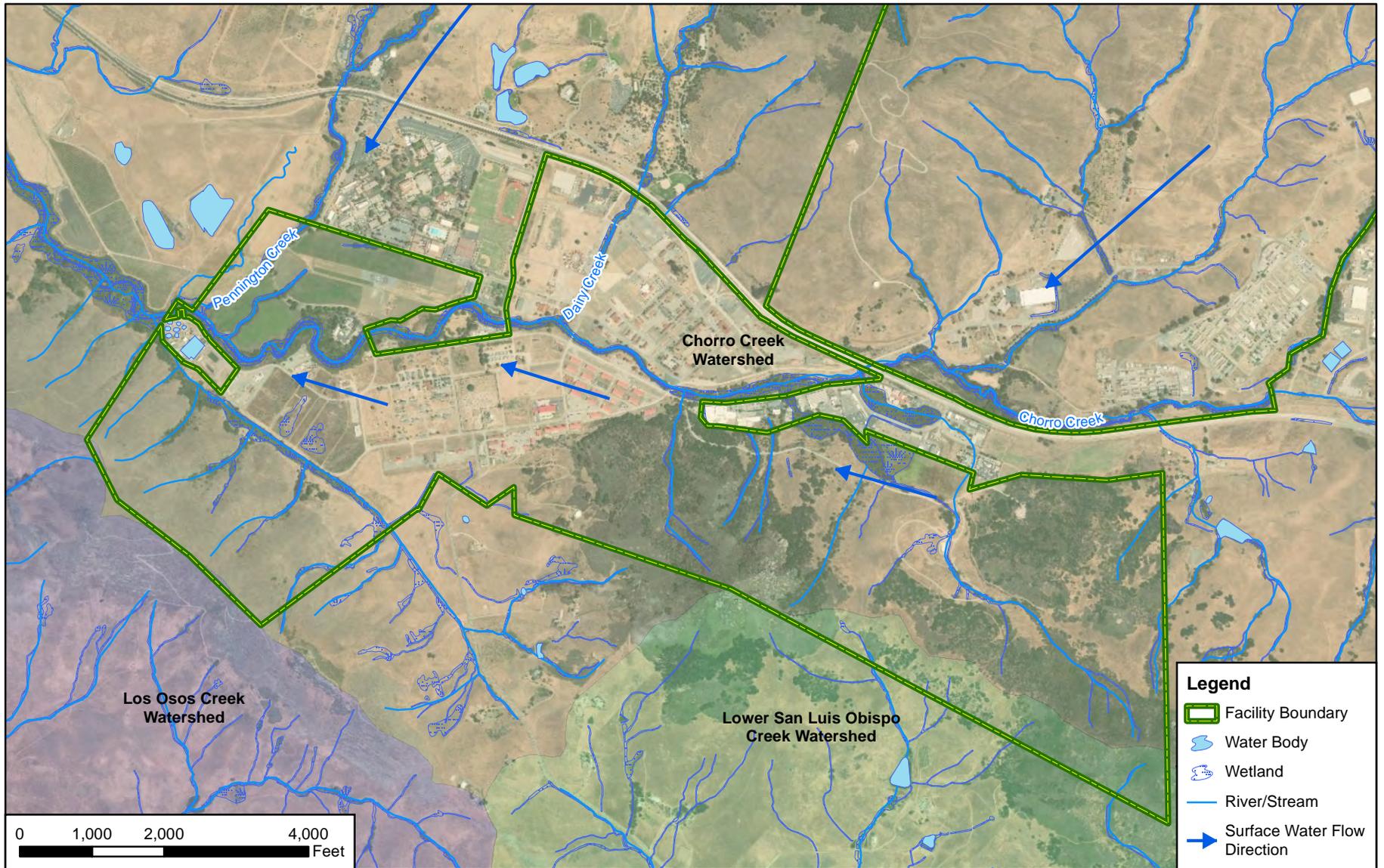
TITLE

**Groundwater Features**

**AECOM** 12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 1-2**

Q:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\I. Data Management\GIS\MXD\Chisholm\_6thMarch2017\Fig\_1-2\_Camp\_San\_Luis\_Obispo\_Groundwater.mxd



CLIENT	ARNG			
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA			
REVISED	10/4/2018	GIS BY	MS	10/4/2018
SCALE	1:24,000	CHK BY	GR	10/4/2018
Base Map Source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	RG	10/4/2018



TITLE	<b>Surface Water Features</b>	
<b>AECOM</b>	12420 Milestone Center Drive Germantown, MD 20876	<b>Figure 1-3</b>

©:\Projects\ENV\GEARS\GEO\MAES 2012 Unrestricted\Fort Meade\I. Data Management\GIS\MXD\Chisholm\_6th\March2017\Fig\_1-3\_Camp\_San\_Luis\_Obispo\_Surface\_Water.mxd

## 2. Fire Training Areas

Four FTAs were identified during the PA; two had potential PFAS releases, and two did not have reported releases. A description of the FTAs is presented below, and the locations of the FTAs are shown on **Figure 2-1**. Interview records and photographs are included in **Appendix B** and **Appendix C**, respectively.

### 2.1 Former CAL FIRE Fire Training Area

#### 2.1.1 Description and Operational History

The former CAL FIRE FTA is located in the southwest portion of the facility, north of the intersection of Tehama and Mono Avenues, and south of Chorro Creek (**Figure 2-1**). The approximate geographic coordinates and elevation of the central portion of the FTA is 35°19'23.67"N;120°44'48.62"W; and 223 feet msl, respectively. The parcel is approximately 1.8 acres in size.

Various sets of aerial photographic images from 1949 through to 2017 were reviewed for this PA. The earliest available photograph shows a large rectangular building occupying the southern portion of the FTA, in an area adjacent to Tahoma Avenue. Areas to the east and south are occupied by numerous structures, the smaller structures of which are likely hutments. Chorro Creek is visible to the north and east of the area. By 1956, the hutments were removed, and most of the larger buildings remained. Through the 1970's, numerous larger structures were removed, and by 1981, nearly all of the structures at and within the vicinity of the FTA were removed with exception of a small rectangular shaped structure situated in the northern portion of the FTA, near the top of the Chorro Creek bank. Agricultural fields are visible in a 1989 photograph to the east and south of the FTA. By 1994, numerous small features, some of which appear to be concrete pads and possibly smaller structures, are visible in the northern half of the FTA, and several structures appear to the east of the FTA. Subsequent photographs reviewed through to 2017 indicate that land use remained generally consistent with that noted in the 1994 photograph.

According to the Camp SLO Site Agreement Manager, CAL FIRE historically conducted short training exercises at the former CAL FIRE FTA. Additionally, the CAL FIRE Team Chief and a Fire Captain interviewed during the PA site visit indicated that fire training was conducted at the parcel once per year from about 1995/1996 to 2010/2011. As part of the training activities, props were used to train the fire fighters on how to apply foam. It was reported that one 5-gallon bucket of 3% AFFF was used during each training session. During the training sessions, AFFF was expelled through a nozzle at the various props and the small rectangular concrete structure described above. No information is available as to whether actual fires were set. No information is available on the final disposition of AFFF after the training was completed, and no remediation activities have occurred at this location.

#### 2.1.2 Current Use, Topography and Surface Features

The former CAL FIRE FTA is currently used once per year by Phillips 66 Company (Phillips) under a one-day-use license granted by the California Military Department, giving Phillips the permission to use the property for the purpose of fire suppression/prevention training. According to the Camp SLO Site Agreement Manager and documents provided, the area was annexed to the California Specialized Training Institute (CSTI) for their exclusive use on 28 May 1997. Copies of the licenses and agreements are presented in **Appendix A**. CSTI was observed to be operating a specialty hazardous materials training area to the east and adjacent to the former CAL FIRE FTA. A chain link fence was observed to separate the two parcels. CSTIs' use of this adjacent area is described in more detail in **Section 3.5**.

Various industrial-type props and an above-ground Liquefied Petroleum Gas tank with fuel feeder lines leading to the props were observed during the PA VSI of the former CAL FIRE FTA area (see **Appendix C** for photographs). According to the CSTI Site Manager interviewed, Phillips conducted a training event at the former CAL FIRE FTA parcel on 21 May, the day before our PA site visit. Fire retardant residues were observed on the ground surface within and around a burn pit situated near the center of the FTA. Additionally, a total of 21 empty Ansul fire extinguishers were observed to be stored in the concrete structure situated in the northern portion of the FTA. A label on the extinguishers indicated that the extinguishers are to be filled only with “Purple-K”, a dry-chemical fire suppression agent. Purple-K does not contain PFAS. According to the CSTI manager, AFFF was not used during the training event, and based on his recollection, was not used during past training sessions. No other information pertaining to the training is available.

The ground surface of the former CAL FIRE FTA was observed to be relatively flat and with gravel cover. Areas to the north and northeast were observed to be heavily vegetated with trees and low-lying brush. Surface elevations decline radially to the northeast, north, and northwest in the direction of Chorro Creek. The slopes of the Creek adjacent to and in the vicinity of the area are generally steep and heavily vegetated. The small rectangular structure visible in photographs since as early as 1949 was observed to have a partially buried basement.

### 2.1.3 Surface Water and Groundwater

Surface water in the vicinity of the former CAL FIRE FTA flows towards Chorro Creek, radially to the northeast, north, and northwest, in a direction consistent with surface topography. The concrete cinder-block structure used for fire training purposes is approximately 200 feet to the south/southwest of Chorro Creek’s flow-line. Flowing water was observed in the Creek at the time of the PA site visit. A waste water treatment plant (WWTP) operated by the CMC is immediately downstream of the area, followed by generally open areas with some agricultural fields situated adjacent to the Creek, the Morro Bay Estuary, and finally, the Pacific Ocean. The creek banks adjacent to Chorro Creek are classified by the U.S. Fish and Wildlife Service as wetlands.

Groundwater beneath the area flows regionally to the west and locally to the northwest, towards Chorro Creek. Camp SLO water wells closest to the FTA are Well No.’s 2 and 3, both of which are hydraulically upgradient at a distance of approximately 3,000 and 1,300 feet east and south east of the area, respectively.

## 2.2 Former META Yard Fire Training Area

### 2.2.1 Description and Operational History

The Motorized Equipment Training Academy (META) yard was used by Caltrans for equipment training purposes and as a vehicle washing and maintenance yard (Geosystems, 1996). The parcel was leased to Caltrans by the CAARNG. The Caltrans tenancy lasted until April 1995, after which the area was leased to Operating Engineers’ Training Trust, the current occupants of the area. The META yard is located near Camp SLO’s southern property boundary, to the east of the former Sutter Avenue Landfill (SALF), and to the southwest of the intersection of Sutter Avenue and O’Connor Way. The approximate geographic coordinates and elevation of the central portion of the parking lot of the yard is 35°19’09.98”N;120°44’22.52”W; and 236 feet msl, respectively (**Figure 2-1**). Fire training was reported to occur in the eastern portion of the approximately 1.5-acre lot. The area was not visited during the PA site visit, as the reported use of the area for fire training purposes was conveyed subsequent to the PA site visit.

Based on a review of historic aerial photographs and information and documents provided by the Camp SLO Environmental Manager, the parking lot area, and more specifically, the eastern portion of the parking lot, was used for fire training in May 2005. The area may have also been

used for fire training in the 1980s and possibly as early as 1978. A 1978 photograph and subsequent photographs reviewed through to 2017 indicate an approximately 60-foot-diameter circular feature in the eastern part of the lot, at the entrance to the lot from O'Connor Way and south of what appears to be a small shed. The surface of the soil appears to be consistently discolored in the area in each of the photos reviewed since 1978. Aside from the visual aspects of the feature interpreted from photographs, no information is available regarding which entity may have used the area and what the area may have been used for during this earlier period of time.

Not much information about the actual fire training events is available, however, paperwork describing reported training burns at waste and brush piles and preparations for an event that occurred in 2005 was available and is included in **Appendix A**. A brief summary of the documents is described below.

#### 2.2.1.1 Training Burns at Waste and Brush Pile

A letter from the Air Pollution Control District, County of San Luis Obispo dated 28 June 1989 to CAL FIRE references fire training burns at a waste disposal site (landfill) and brush pile behind the Cuesta College campus, near the (former) Caltrans yard. The letter indicates that inspections of the pile noted various municipal type wastes that included plastic coated wires and large rolls of carpet. All materials documented in the letter with exception of wood materials were requested by the inspectors to be removed from the piles prior to burning. Some of these materials may have been removed prior to the burns; however, post-burn inspections noted the presence of some of the same materials in the ash.

No information pertaining to the specifics of the fire training are available, and no information is available on whether AFFF was used.

#### 2.2.1.2 2005 Fire Training Session

In coordination with Camp SLO Environmental Compliance (EC) and CAL FIRE/San Luis Obispo County Fire Department, CAL FIRE conducted a one-time fire training session on 11 May 2005 in the east parking lot of the META yard. According to a 14 March 2005 memo from Camp SLO EC to CAL FIRE that detailed and formally requested the exercise, the purpose of the exercise was to train firefighters on how to apply foam to a large tank truck trailer, simulating a highway type emergency involving an over-the-road tanker carrying flammable liquid. The memo stated that Ansulite AFFF would be used at a 6% application rate using 30 gallons of foam per 500 gallons of water (the capacity of each fire engine). Based on a proposed eight drills, a total of 4,000 gallons of water and 240 gallons of foam would be used. A Material Safety Data Sheet for the foam and a Nature of Discharge Report were also submitted with the memo. A request was made by Camp SLO EC to capture runoff generated by the activities and discharge it to the WWTP operated by CMC, not to surface water. CMC was to be notified first.

No information is available as to whether actual fires were set, and no information is available on the final disposition of AFFF after the training was completed. There is no stormwater drainage infrastructure in the area where the training event occurred. If the training event took place, the plan was to use AFFF on pavement, contain it, and process the recovered material at the WWTP (however, it should be noted that the WWTP did not become operational until approximately late 2007). Thus, if the applied foam were not contained, runoff from the area is via a small ditch flowing south then southwest to a tributary that then flows northwest to Chorro Creek (**Figure 2-1**).

## 2.2.2 Current Use, Topography and Surface Features

Based on review of aerial photographs, the generally rectangular parking lot in which the training occurred is relatively flat and covered in gravel. Surface elevation slopes to the west, with elevations at the eastern and western portions of the lot at approximately 238 and 234 feet above msl, respectively. Two larger structures occupy the northeastern corner of the parking lot. Parking lot areas not covered in gravel within and around the parcel are grass covered. The southwestern corner of the parking lot borders the northeastern corner of the SALF. Recent information from CAARNG indicates that the two structures and a carport were burned as part of a California Arson Investigators' Association training event on 25 September 2018. It is unknown if AFFF were used during the training.

## 2.2.3 Surface Water and Groundwater

Surface water either evaporates, percolates into the ground, and/or flows generally to the east, towards Poison Oak Creek. The tributary creek is situated at the base of low-lying hills to the southeast of the FTA at a distance of approximately 2,000 feet directly east of the area. The tributary joins Chorro Creek immediately east of the CMC WWTP (see **Figure 1-3**).

Groundwater beneath the area flows regionally to the west and locally to the east towards Poison Oak Creek, a tributary to Chorro Creek. Camp SLO water wells closest to the FTA are Well No.'s 2 and 3. Well No. 2 is located hydraulically upgradient of the area at a distance of approximately 600 feet. Well No. 3 is situated down to cross-gradient of the area to the northeast at a distance of approximately 1,400 feet. Ten groundwater monitoring wells have been installed to monitor conditions at and within the vicinity of the SALF. Several wells continue to be gauged and monitored on a semi-annual basis in accordance with the Central Coast Regional Water Quality Control Board. The majority of these wells are downgradient of the FTA. The SALF has a grass cover which has been approved by the CENTRAL Coast Regional Water Quality Control Board to be replaced by an artificial turf cover due to an ongoing and persistent ground squirrel infestation. The project is to be started and completed the year 2020.

## 2.3 CAL FIRE San Luis Obispo Unit Tactical Drill Grounds Training Site

CAL FIRE currently operates the San Luis Obispo Unit Tactical Drill Grounds Training Site in the southwestern portion of Camp SLO. The approximately 4-acre facility is bordered to the west by the WWTP operated by the CMC, to the north by Tehama Avenue, and to the east and south by open areas. The approximate geographic coordinates and elevation of the central portion of the parking lot are 35°19'20.02"N; 120°44'57.68"W; and 214 feet msl, respectively (**Figure 2-1**).

According to a Notice of Exemption (NOE) document (**Appendix A**) dated 7 October 2016, CAL Fire/San Luis Obispo County Fire leases the drill grounds site from the CA ARNG. Background information provided in the NOE document describes the site as a drill ground facility that consists of two permanent structures and a number of steel shipping containers situated in a variety of configurations to provide fire department training including a rope rescue tower, burn building, multi-story burn building, active shooter, and storage. The facility was observed during the PA VSI of the area to generally have the infrastructure documented in the NOE. Numerous larger vehicles, likely used as props, were also observed. Ground cover was observed to be a mix of concrete and gravel.

According to the CAL FIRE training personnel interviewed, only water is used during fire-related training sessions conducted at the drill grounds. No other information was available regarding the training.

## 2.4 Prescribed Building Burns by CAL FIRE for Structural Fire Training

In coordination with Camp SLO EC, CAL FIRE has historically and more recently conducted structural fire training at Camp SLO using old buildings no longer used by the facility. The various prescribed burn events were permitted through the County of San Luis Obispo Air Pollution Control District prior to the activities.

Two burned out structures were observed during the PA site visit. The location of the burned structures and photographs of the burned building remnants are presented in **Figure 2-1** and **Appendix C**, respectively. In late September 2018, subsequent to the PA site visit, the Camp SLO Environmental Manager reported that CAL FIRE burned 7 additional structures for fire training purposes including three structures at area 2.2, the former META training yard.

According to the CAL FIRE Team Chief and CAL FIRE Captain, water was used during these types of structural fire training sessions, and AFFF was not used during the training events. No evidence of AFFF use was observed during the PA VSI of the area. No other information was available regarding the structural fire training burns. The ash observed in the footprints of the March 2018 CAIA training event and during the May 2018 PA site visit were removed from Camp SLO in October 2018.

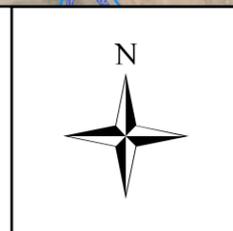
There are records, i.e., email traffic from former Wildlife Biologist Jodie Olson to and from Senior Environmental Scientist John A. Morrow, dated Spring of 2007, concerning a potential Cal Fire training activity at this parcel, involving the usage of fire-fighting foam.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	10/4/2018	GIS BY	MS	10/4/2018	
SCALE	1:6,000	CHK BY	GR	10/4/2018	
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©	PM	RG	10/4/2018		

**Legend**

- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream



**Fire Training Area**

**AECOM** 12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 2-1**

### 3. Non-Fire Training Areas

Two non-FTA where PFAS were known to be released and several other non-FTAs were evaluated during the PA. Description and their locations are presented below and shown on **Figure 3-1**. Interview records appear in **Appendix B**. Photographs appear in **Appendix C**.

Non-FTAs where PFAS were potentially released to the environment are CAL FIRE Cuesta Camp Tenant and the O'Sullivan Airfield, which includes an airfield shed where AFFF is stored.

Other features investigated during the PA that were determined to be unlikely PFAS releases include the following:

- Former U.S. Army Air Strip (Historic Camp SLO Airfield)
- Closed Landfills:
  - Sutter Avenue Landfill
  - Kansas Avenue Landfill
  - Story Park Landfill
  - Pennington Creek Landfill
- California Specialized Training Institute Training Area
- CMC Wastewater Treatment Facility
- Former Paint Booth in Building 1341

#### 3.1 CAL FIRE Cuesta Camp Tenant

Based on information obtained during the PA, AFFF was released sometime in 2014 at a fueling station associated with the tenant CAL FIRE Cuesta Camp. The site is situated west of Diary Creek on the south side of Highway 1. The approximate coordinates and elevation are 35°19'44.76"N; 120°43'57.34"W; and 274 feet msl, respectively (**Figure 3-1**). The facility and location of the potential AFFF release area were not observed during the PA site visit.

According to the CAL FIRE Chief and a CAL FIRE Captain, AFFF was released to a concrete covered area when hoses and possibly an empty tank, which contained AFFF, were flushed out with water at the Station's bulk fueling islands that are operated by CAL FIRE. No information was available on the precise location of the release. The amount and percentage of AFFF released are not known.

The area in which the release occurred is situated approximately 700 feet to the north and hydraulically upgradient of Chorro Creek. Surface water flows to the south towards the Creek. Chorro Creek, in the vicinity of where the release occurred, flows east to west, beneath Highway 1, through the cantonment of Camp SLO, and past the CMC WWTP. Groundwater flows locally to the south/southwest and regionally to the west.

No photographs were taken at this location.

#### 3.2 O'Sullivan Airfield Shed

O'Sullivan Airfield is located in the southwestern portion of the facility, between Cuesta College Road and Hollister Road (**Figure 3-1**). The geographic coordinates are 35°19'34.43"N; 120°44'34.75"W.

The airfield was constructed in 1940 and is currently operated by the CAARNG as a heliport. The heliport was constructed in the 1980s and is used infrequently, up to 20 times per year. No regular fueling operations occur there. The last known fueling activity at the heliport was in 2008. AFFF is stored inside a building (shed) adjacent to the helipad. The shed was observed during the PA VSI of the area to contain two Tri-Max crash carts which typically contain AFFF, three 5-gallon buckets of Chemguard 3% AFFF, and one 5-gallon bucket of FireAide 3% AFFF. **Appendix A** includes documents pertaining to the AFFF stored. The shed is not a numbered building and is situated between the airfield and the Civil Air Patrol tenancy, south of Cuesta College and north of Achievement House. The portable units are managed by transient aviation units, and interviewees had no direct knowledge on how they used or maintained them.

Surface water and groundwater at and within the vicinity of the shed likely flows to the west/southwest, towards Chorro Creek.

### 3.3 Former U.S. Army Air Strip (Historic Camp SLO Airfield)

The former Camp SLO Airfield was located adjacent to O'Sullivan Airfield, west of the current facility boundary, along the western side of Pennington Creek, and south of Route 1 (**Figure 3-1**). The geographic coordinates are 35°19'47.51"N;120°44'51.39"W.

The airfield was constructed in 1940 and used until 1965. No information obtained indicates that AFFF was used or stored here, and the dates of operation pre-date the use of AFFF.

### 3.4 Closed and Former Landfills

There are three known landfill areas at Camp SLO. Each of the landfills operated at various times within Camp SLOs boundaries and each are currently closed. The location of each of the landfills is depicted on **Figure 3-1**. **Appendix C** includes photographs of one of the landfills observed (SALF) during the PA site visit. None of the other landfills described below were observed during the visit.

Landfills are not usually a primary source of PFAS, however, materials disposed of in landfills containing PFAS may leach the compounds to the environment over time. Such materials may include residual sludge wastes from WWTP operations, used AFFF storage containers, or products associated with waterproofing such as uniforms or boots.

At Camp SLO, no information obtained during the PA efforts indicates PFAS-containing materials were disposed of in the several landfills that operated at the facility; however, the dates during which some of the landfills were in use coincide with the years during which AFFF was in use at the facility.

Since 1995, all waste generated at Camp SLO is transported to the Cold Canyon landfill for disposal. The facility is located approximately 15 miles southeast of Camp SLO.

In addition, a former landfill, the Pennington Creek Landfill (PCLF), is located directly north of the northwest corner of the facility. The ownership of this property was transferred to CA State University, San Luis Obispo (CAL Poly) from the CA Department of the Military, sometime around 1968.

#### 3.4.1 Sutter Avenue Landfill

The SALF is a 5.2-acre closed Class III landfill located in the southeast corner of Camp SLO (**Figure 3-1**). The landfill is bounded by Poison Oak Creek to the southwest, Sutter Avenue to the north, a former California Department of Transportation facility to the north and east, and privately-

owned range land to the south. The approximate coordinates and elevation of the SALF are 35° 19'05.52"N; 120° 44'34.75"W; and 230 feet msl, respectively.

The SALF was operated by the CAARNG. Disposal of waste into the SALF began between 1969 and 1973 and continued until the mid-1980s (USACE, 1996). Disposal of municipal type waste in the landfill reportedly stopped in 1985 (Geosystems, 1996). A final cover system was installed in 1996 and 1997 that included an engineered foundation layer, drainage layers, and high-density polyethylene membrane liners (ECM Consultants [ECM], 2016). The landfill was filled using trench-and-cover methods. The trenches were approximately 200 to 300 feet in length and about 8 feet in width. The trenches were excavated to depths of 8 feet. Wastes reported to have been disposed of in the SALF included commercial rubbish, scrap wood, scrap metal, weapon oil, brush and grass clippings, and some food waste (USACE, 1996).

It was reported that demolition debris was ignited for a fire fighter training program by CAL FIRE staff. The debris that was ignited was reported to have been subsequently placed into the SALF sometime after 1985. The frequency of the fire training is not known, and it is also unknown if the fire training activities included the use of AFFF. As such, it is unknown if the demolition debris placed into the landfill contained AFFF (Geosystem Consultants, 1996).

Several investigations were conducted at the SALF by others, mostly in 1995, and numerous wells were installed to assess groundwater quality conditions at and within the vicinity of the SALF. Ten groundwater monitoring wells associated with the pre- and post-lined landfill were monitored first quarterly, then semi-annually, and since as early as 1990. The SALF has confirmed releases of volatile organic compound constituents (ECM, 2016).

Surface water and groundwater beneath the SALF flow in a direction to the south-southwest. Groundwater has historically reported to be less than 10 feet bgs during periods of high groundwater, and the northwest base of the landfill may have periodically been submerged (USACE, 1996).

### 3.4.2 Kansas Avenue Landfill

The Kansas Avenue Landfill (KALF) is located to the south of Highway 1 (**Figure 3-1**). The landfill is bounded on the north by Highway 1, on the east by Oklahoma Avenue and commercial buildings, and on the south and west by open space. The approximate coordinates and elevation of the SALF are 35°19'06.51"N; 120°42'59.02"W; and 338 feet msl, respectively.

The landfill was filled using trench-and-cover methods and was used for the disposal of primarily municipal waste. The landfill may also have had paint, lubricant containers, and dry cell batteries dumped there during a time after the Army used the landfill (USACE, 1996). The KALF was used from 1941 to until approximately 1956, dates which predate the use of AFFF.

### 3.4.3 Story Park Landfill

The Story Park Landfill (SPLF) is located in a clearing north of Highway 1, south of a tributary to Chorro Creek and Santa Cruz Road, east of Kern Avenue, and west of the CMC (**Figure 3-1**). The approximate coordinates and elevation of the SPLF are 35°19'18.82"N; 120°42'54.22"W; and 337 feet msl, respectively.

The only recorded uses of the landfill were in 1949 and 1969 (Geosystems, 1996). In 1949, it was possible that sewage treatment activities associated with the operation of an Imhoff tank occurred in the southeast portion of the area. The final disposition of aqueous wastes potentially generated is not known. In 1969, a single trench was excavated parallel and close to Chorro Creek, in the southern boundary of the clearing; however, little information is known concerning the use of the

trench. Soil and groundwater investigations performed in the area in 1994 did not indicate impacts to subsurface media.

No information obtained indicates PFAS-related materials were disposed of in the landfill.

### 3.5 California Specialized Training Institute Training Area

The CSTI is a division of the State of California, Office of Emergency Services. The facility covers an area of approximately 2.5 acres in the southwest portion of Camp SLO and is situated north of Tehama Avenue and to the east and adjacent to the former CAL FIRE FTA discussed in **Section 2.1**. The approximate coordinates and elevation of the CSTI training area are 35°19'22.21"N; 120°44'47.40"W; and 225 feet msl, respectively.

CSTI provides hazardous materials response and riot control training to law enforcement and emergency response agencies (Geosystems, 1996). According to CSTI's onsite manager, the Camp SLO Site Agreement Manager, and documents provided, the area was annexed to CSTI for their exclusive use on 28 May 1997. Copies of the licenses and agreements are presented in **Appendix A**. CSTI was observed to be operating a specialty hazardous materials training area to the east and adjacent to the former CAL FIRE FTA. A chain link fence was observed to separate the two parcels. CISTs use of this adjacent area is described in more detail in **Section 3.6**.

### 3.6 California Men's Colony Wastewater Treatment Plant

A WWTP is situated at the western end of Tehama Avenue, near Chorro Creek (**Figure 3-1**). The geographic coordinates of the approximate center of the facility are 35°19'26.98"N; 120°45'7.77"W.

The WWTP, operated by CMC, was part of Camp SLO until about 1967, when ownership of this parcel was transferred from the CA Department of the Military to the California Department of Corrections via the California Office of Real Estate Services. The facility is used to treat wastewater from CMC, Cuesta College, El Chorro Regional Park, Camp SLO, and various county facilities (GeoSystem Consultants, 1996).

No known storm drains were identified in areas of the facility where PFAS were released.

### 3.7 Former Paint Booth in Building 1341

There is one known paint booth that was constructed in Building 1341. The geographic coordinates are 35°19'11.5"N; 120°44'14.3"W(**Figure 3-1**). The paint booth was reported by the Camp SLO Environmental Manager to have never been used, as it did not pass San Luis Obispo County health requirements. The booth was subsequently removed in approximately 2007, following an Environmental Programs (EPAS) inspection, and is therefore not considered a potential PFAS release location.

### 3.8 Fuel Point

The Fuel Point is situated north of Chorro Creek and east of Dairy Creek. The geographic coordinates are approximately 35°19'46.0"N; 120°43'46.0"W. According to information provided by a Camp SLO environmental scientist, a foam applicator and a 5-gallon container of AFFF were observed. The former fuel point technician indicated that AFFF was to be on site in the event of a fueling facility fire. The history of use and times period of storage of the AFFF is unknown.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	1/16/2020	GIS BY	MS	1/16/2020	
SCALE	1:9,600	CHK BY	GR	1/16/2020	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)	PM	RG	1/16/2020		

**Legend**

- Potential PFAS Release
- No Suspected Release
- Facility Boundary
- Water Body
- Wetland
- River/Stream



**Non-Fire Training Areas**



12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 3-1**

## 4. Emergency Response Areas

Camp SLO personnel identified one emergency response area during the PA. The emergency response area is shown on **Figure 4-1**. Interview records appear in **Appendix B**. A photograph of the area is included in **Appendix C**.

### 4.1 1972 de Havilland Beaver Plane Crash

On 9 April 1972, a single engine de Havilland Beaver belonging to the US Army crashed at the southeastern end of the Camp SLO (O'Sullivan) Airfield runway and came to rest on the banks of Chorro Creek. The approximate geographic coordinates of where the plane crashed are 35°19'27.71"N;20°44'24.36"W.

The stretch of Chorro Creek in the area of the plane crash is heavily vegetated and has relatively steep stream banks. At the time of the PA site visit, water was flowing in the Creek. The Camp SLO airfield is currently used by the CA ARNG for helicopters. Waters in Chorro Creek flow east to west.

Interviewees did not recall whether AFFF were used to extinguish any fires.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	10/4/2018	GIS BY	MS	10/4/2018	
SCALE	1:6,000	CHK BY	GR	10/4/2018	
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©	PM	RG	10/4/2018		

**Legend**

- Potential PFAS Release
- Water Body
- Facility Boundary
- Wetland
- River/Stream



**Emergency Response Area**

**AECOM**

12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 4-1**

## 5. Adjacent Sources

The USEPA collects occurrence data for potential contaminants that may be present in drinking water but does not have enforceable drinking water standards under its Unregulated Contaminant Monitoring program. For this PA, the 3<sup>rd</sup> Unregulated Contaminant Monitoring Rule (UCMR 3) data for water purveyors within a 10-mile radius of Camp SLO was searched for PFAS-specific data. **Appendix A** includes the UCMR3 2013 tabulated data set.

According to the UCMR3 database search, the Atascadero Mutual Water Company had a detection of PFOA at one of their treatment buildings on 30 October 2013, the date of sample collection. The detection of PFOA was above the laboratory's 0.02 nanogram per liter (ng/L) method reporting limit at a concentration of 0.028 ng/L. The exact location of where the water was sampled is not known. The southern-most developed portion of the city of Atascadero is located approximately 9.5 miles to the northwest and hydraulically upgradient of Camp SLO, the area in between which is comprised of mostly undeveloped mountain ranges.

PCLF is located about 1 mile to the northwest of the main entrance to Camp SLO, north of and adjacent to Pennington Creek Road. The landfill is situated to the east of and adjacent to a tributary to Pennington Creek. The ownership of this property was transferred to CA State University, San Luis Obispo (CAL Poly) from the CA Department of the Military, sometime around 1968. The PCLF has been referred to as the Cal Poly landfill. The landfill is adjacent to a part of Camp SLO which became El Chorro Regional Park. Little information is available regarding the type and amount of waste disposed in the PCLF other than that the landfill was filled using trench-and-cover methods. No information obtained indicates PFAS-related materials were disposed of in the landfill.

No other off-site PFAS sources adjacent to the Camp SLO facility were identified during the PA through interviews or the EDR Report. **Figure 5-1** depicts the location of the City of Atascadero and the PCLF.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	10/2/2018	GIS BY	MS	10/2/2018	
SCALE	1:6,000	CHK BY	GR	10/2/2018	
Base Map: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©	PM	RG	10/2/2018		

- Legend**
- No Suspected Release
  - Facility Boundary
  - Water Body
  - Wetland
  - River/Stream



<b>Adjacent Source</b>	
<b>AECOM</b>	12420 Milestone Center Drive Germantown, MD 20876
<b>Figure 5-1</b>	

## 6. Preliminary Conceptual Site Model

Based on the PA findings, six areas where PFAS were potentially released to the environment were identified during the PA. The AOIs and preliminary CSMs for the AOIs are shown on **Figure 6-1** and **Figure 6-2**, respectively, and summarized below.

Two FTAs where PFAS were potentially released to the environment and consequently can be considered source areas include the following:

- AOI 1 - Former CAL FIRE FTA
- AOI 2 – Former META Yard Fire Training Area

Three non-FTAs where PFAS were potentially released to the environment include:

- AOI 3 – CAL FIRE Cuesta Camp Tenant
- AOI 4 – O’Sullivan Air Field Shed
- AOI 5 – de Havilland Beaver Crash site
- AOI 6 – Fuel Point

The following sections describe the CSM components and the specific preliminary CSMs developed for each AOI. The CSM identifies the three components necessary for a potentially complete exposure pathway: (1) source, (2) pathway, (3) receptor. If any of these elements are missing, the pathway is considered incomplete.

In general, the potential PFAS exposure pathways are ingestion and inhalation. Dermal contact is not considered to be a potential exposure pathway, as studies have shown very limited absorption of PFAS through the skin (National Ground Water Association [NGWA], 2018). Receptors for Camp SLO include site workers, construction workers, farmers, residents, and trespassers. The preliminary CSMs for each AOI indicate which specific receptors could potentially be exposed to PFAS.

### 6.1 AOI 1 Former CAL FIRE Training Area

AOI 1 is the former CAL FIRE FTA, now used by Phillips for a once-annual fire training session (**Figure 6-1**). Potential PFAS releases to soil by CAL FIRE occurred at AOI 1 during fire training activities from 1995/1996 to 2005/2006. On a once-annual basis during these years, one 5-gallon container of 3% AFFF was reported to have been used to train fire fighters on how to apply foam. The foam was directed at various props and a concrete cinder-block structure. AFFF was expelled from equipment nozzles during the training and released to the ground surface, which was observed in aerial photographs and during the PA site visit to be gravel covered.

PFAS are water soluble and can migrate readily from soil to groundwater or surface water via leaching and run-off. Because potential PFAS releases to surface and subsurface soil occurred, it is possible that PFAS migrated from the surface soil at AOI 1 to waters in Chorro Creek, which is located approximately 200 feet downslope and to the northwest of the area. In addition, precipitation infiltrating into the gravelly covered areas at AOI 1 may cause the migration of PFAS from surface and subsurface soil to groundwater.

Ground-disturbing activities to surface soil at AOI 1 and surface water and sediment in Chorro Creek could result in site and construction worker and trespasser exposure to potential PFAS contamination. Ground-disturbing activities to subsurface soil could result in construction worker exposure. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

Camp SLO drinking water is supplied by waters piped to Camp SLO from the Whale Rock reservoir, which is situated approximately 11 miles west and hydraulically upgradient of the facility. Three water wells historically used for potable water are no longer used. As such, the exposure pathway of ingestion of groundwater at Camp SLO is incomplete. However, surface water in Chorro Creek may be potentially impacted by PFAS. Therefore, the exposure pathway for ingestion of surface water and sediment is potentially complete for site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility. Downgradient potable wells supply water to the coastal town of Los Osos, which is about 4 miles downgradient of Camp SLO. Conservatively, this could be a complete pathway for PFAS in groundwater.

## 6.2 AOI 2 Former META Yard Fire Training Area

AOI 2 is a parking lot area that was reportedly used for fire training (**Figure 6-1**). Potential PFAS releases to the east parking lot area of the META yard occurred as early as 1978 through 2005.

Because potential PFAS releases to surface soil at AOI 2 have occurred, PFAS may migrate from surface soil at AOI 2 to surface water via run-off and to groundwater via leaching. Ground-disturbing activities to surface and subsurface soil could result in site and construction worker exposure. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

Additionally, surface topography declines to the south of the eastern parking lot area towards a drainage ditch holding wetlands and to the southwest towards Poison Oak Creek. During large rainfall events, surface water and sediment may flow overland into the ditch, which is adjacent to the SALF, and be carried by Poison Oak Creek into Chorro Creek. Ground-disturbing activities in drainage ditches, at Poison Oak Creek, and at Chorro Creek could result in site and construction worker and trespasser exposure to potential PFAS contamination in surface water and sediment.

Well No. 3 is situated downgradient of the FTA. The water well is no longer used as a potable water supply. As such, the exposure pathway of ingestion of groundwater at Camp SLO is incomplete. Surface water in Chorro Creek may be impacted by PFAS. Therefore, the exposure pathway for ingestion of surface water and sediment is complete for site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility. Downgradient potable wells supply water to the coastal town of Los Osos, which is about 4 miles downgradient of Camp SLO. Conservatively, this could be a complete pathway for PFAS in groundwater.

## 6.3 AOI 3 CAL FIRE Cuesta Camp Tenant

AOI 3 is located in the northeastern portion of Camp Roberts, at a fueling facility associated with Cuesta Camp, which is operated by CAL FIRE. The fueling facility is in the vicinity of Building 621 (**Figure 6-2**). Potential PFAS releases to concrete surfaces occurred in 2013 during the flushing out of hoses and a tank that contained AFFF. The precise location, amount, and type of AFFF released to the pavement and the condition of the pavement are not known. The area was not observed during the PA site visit.

PFAS was reportedly released to a concrete surface and potentially migrated to the subsurface through cracks in the concrete or to areas off to the sides of concrete covered areas. Precipitation infiltrating AOI 3 may cause the migration of PFAS from surface and subsurface soil to groundwater. AOI 3 is upgradient of Chorro Creek, and the pathways and receptors are the same as described in **Section 6.2**.

## 6.4 AOI 4 O'Sullivan Airfield Shed

AOI 4 is a shed at the O'Sullivan Airfield and was observed during the PA site visit to contain two Tri-Max crash carts that typically contain AFFF, three 5-gallon buckets of Chemguard 3% AFFF, and one 5-gallon bucket of FireAide 3% AFFF (**Figure 6-1**). The AFFF is stored on a concrete surface. Surface water and groundwater at and within the vicinity of the shed likely flows to the west/southwest, towards Chorro Creek.

Although none were reported, incidental spills of stored AFFF could migrate to the subsurface through cracks in the concrete or to areas off to the sides of concrete covered areas. Precipitation may cause the migration of PFAS from concrete surfaces and subsurface soil to groundwater. Surface waters may have also migrated to Chorro Creek, which is located approximately 500 feet to the south of the shed.

Ground-disturbing activities in unpaved areas downslope of the shed and surface water and sediment in Chorro Creek could result in site and construction worker and trespasser exposure to potential PFAS contamination. Ground-disturbing activities to subsurface soil could result in construction worker exposure. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

The exposure pathway of ingestion of groundwater at Camp SLO is incomplete; however, surface water in Chorro Creek may be potentially impacted by PFAS. Therefore, the exposure pathway for ingestion of surface water and sediment is complete for site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility. Downgradient potable wells supply water to the coastal town of Los Osos, which is about 4 miles downgradient of Camp SLO. Conservatively, this could be a complete pathway for PFAS in groundwater.

## 6.5 AOI 5 de Havilland Beaver Crash Site

In 1972, a de Havilland Beaver airplane belonging to the US Army crashed and came to rest in Chorro Creek. Interviewees did not recall whether AFFF were used to extinguish any fires.

Surface water in Chorro Creek may be potentially impacted by PFAS. Therefore, the exposure pathway for ingestion of surface water and sediment is complete for site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility.

## 6.6 AOI 6 Fuel Point

AOI 6 is located north of Chorro Creek and East of Dairy Creek, at a Fuel Point where a 5-gallon container of AFFF and an applicator were present during fueling operations. The fuel point is situated on a concrete surface.

If AFFF were released, it could migrate through cracks in the concrete surface or off the concrete to uncovered areas. Precipitation may cause the migration of PFAS from the concrete surface and subsurface soil to groundwater. Surface waters may have also migrated towards Chorro Creek, which is located approximately 2,000 ft southwest of AOI 6.

Ground-disturbing activities to surface soil downslope of the Fuel Point and surface water and sediment at Chorro Creek could result in site and construction worker and trespasser exposure to potential PFAS contamination. Ground-disturbing activities to subsurface soil could result in construction worker exposure. Therefore, the exposure pathway for inhalation of soil particles and ingestion of soil is potentially complete for these receptors.

Camp SLO drinking water is supplied upgradient of the facility. As such, the exposure pathway of ingestion of groundwater is incomplete. However, surface water at Chorro Creek may be potentially impacted by PFAS. Consequently, the exposure pathway for ingestion of surface water and sediment is potentially complete for site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility. Downgradient potable wells supply water to the coastal town of Los Osos, which is about 4 miles downgradient of Camp SLO. Conservatively, this could be a complete pathway for PFAS in groundwater.

## 6.7 Secondary Migration of PFAS to Chorro Creek

Chorro Creek flows from east to west through the cantonment area of Camp SLO and is the primary surface water drainage feature (**Figure 6-2**). The Creek drains out of highlands northeast of the facility before entering Chorro reservoir, situated in the northeastern portion of the facility. The Creek then flows beneath Highway 1 and through the main portion of the Camp SLO cantonment area before flowing past the facility's southwest property boundary. Chorro Creek and some of its tributaries are blue-line streams that usually flow year-round (CSLRCD, 2001). Downstream of Camp SLO, Chorro Creek flows to the Morro Bay Estuary at the Moro Bay State Marine Reserve, after which it flows into the Pacific Ocean. During wetter conditions, water may flow from Chorro Creek into the water table. If water is still flowing in Chorro Creek during drier periods, it is likely due to groundwater discharge.

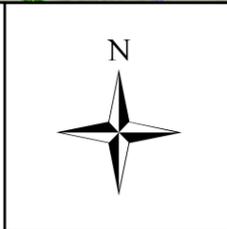
Chorro Creek has several small tributary streams that flow through the facility. These streams include Dairy Creek, which originates just north of the property boundary, and Pennington Creek, which flows northeast to southwest and joins Chorro Creek just west of the CMC WWTP. A third, smaller tributary, Poison Oak Creek, is situated in the southwestern corner of Camp SLO. This tributary creek flows from the southeast to the northwest, in an area south of the SALF and CMC WWTP. Forested/shrub and emergent wetlands areas exist in relatively contiguous areas adjacent to Chorro Creek and its tributaries, within the various creeks' stream banks.

All six AOIs described above are known to have AFFF release or have the potential for a PFAS release to the environment and are within close proximity to Chorro Creek and its tributaries. The PFAS releases to soil and a concrete surface may have potentially migrated to Chorro Creek by means of surface water flow and infiltration. Therefore, site and construction workers, trespassers, and off-facility residents and farm or construction workers downstream of the facility could be exposed to potential PFAS in surface water and sediment.



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	1/16/2020	GIS BY	MS	1/16/2020	
SCALE	1:10,200	CHK BY	GR	1/16/2020	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)	PM	RG	1/16/2020		

Legend	
Area of Interest	Water Body
Potential PFAS Release	Wetland
No Suspected Release	River/Stream
Facility Boundary	Surface Water Flow Direction
Inferred Groundwater Flow Direction	Monitoring Well

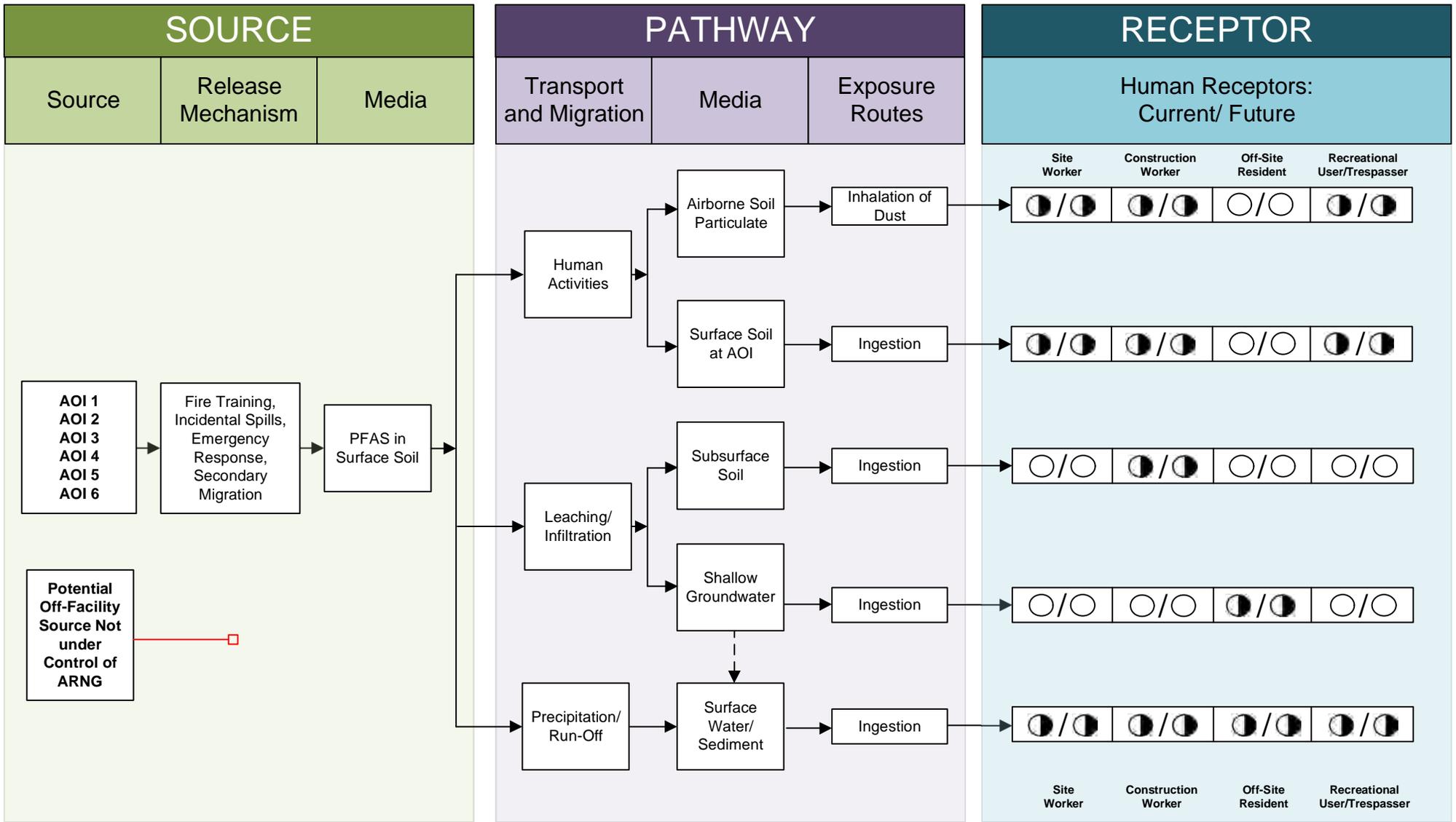


**Areas of Interest**

**AECOM** 12420 Milestone Center Drive  
Germantown, MD 20876

**Figure 6-1**

Q:\Projects\ENV\GEARS\GEO\ARNG PFAS\900-CAD-GIS\920-GIS or Graphics\MXD\CACamp\_San\_Luis\_Obispo\Fig\_6-1\_Camp\_San\_Luis\_Obispo\_AOIs.mxd



**LEGEND**

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Complete Pathway

**Notes:**

1. The resident and recreational user receptors refer to an off-site resident and recreational user.
2. Dermal contact exposure pathway is incomplete for PFAS.

Figure 6-2  
Preliminary Conceptual Site Model  
Camp San Luis Obispo

## 7. Conclusions

This report presents a summary of available information gathered during the PA on the use and storage of AFFF and other PFAS-related activities at Camp SLO. The PA findings are based on the information presented in **Appendix A** and **Appendix B**.

### 7.1 Findings

The six AOIs listed in **Table 7-1** were identified as potential PFAS releases at Camp SLO during the PA (**Figure 7-1**).

**Table 7-1 AOIs at Camp SLO**

Area of Interest	Name	Used by	Potential Release Dates
AOI 1	Former CAL FIRE Fire Training Area	CAL FIRE	1995/1996 to 2010/2011
AOI 2	Former META Yard Fire Training Area	CAL FIRE	1978-2005
AOI 3	CAL FIRE Cuesta Camp Tenant	CAL FIRE	2013
AOI 4	O'Sullivan Airfield Shed	US Army, CAARNG and Civil Air Patrol	AFFF Storage dates not known
AOI 5	de Havilland Beaver Crash Site	US Army	1972
AOI 6	Fuel Point	CAARNG	Unknown

Based on documented potential PFAS releases at these AOIs, there is potential for exposure to PFAS contamination in surface soil to all receptors via ingestion and inhalation, subsurface soil to site and construction workers via inhalation; and, surface water, sediment, and groundwater to construction workers, farm workers and downstream residents via ingestion.

The areas listed in **Table 7-2** and discussed in **Section 2** through **Section 5** were determined to have no suspected PFAS releases to the environment:

**Table 7-2 No Suspected Releases, Camp SLO**

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
CAL FIRE San Luis Obispo Unit Tactical Drill Grounds Training Site	CAL FIRE	Interviewees indicated that only water has been used during training events.
Various Prescribed Building Burns for Structural Fire Training	CAL FIRE	Interviewees indicated that only water was used during training events to put out the structure fires.
Former U.S. Army Air Strip (Historic Camp SLO Airfield)	U.S. Army	The dates of airstrip operation predate the use of PFAS. The airstrip was constructed in 1940 and used until 1965.

No Suspected Release Area	Used by	Rationale for No Suspected Release Determination
Closed Landfills (Sutter and Kansas Avenue Landfills; and, Story Park and Pennington Creek Landfills)	US Army and CAARNG	None of the four landfills had reported materials disposed containing PFAS. Three of the four landfills operated historically, during a time inconsistent with AFFF use.
California Specialized Training Institute Training Area	California Specialized Training Institute and California Office of Emergency Services	Interviewees indicated that AFFF has never been used during their training exercises.
Former Paint Booth in Building 1341	CAARNG	The paint booth was installed but never used as it failed a Federal EPAS inspection and was subsequently removed from Camp SLO.

## 7.2 Uncertainties

A number of information sources were investigated during this PA to determine the potential for PFAS-containing materials to have been present, used, or released at the facility. Historically, documentation of PFAS use was not required because PFAS were considered benign. Therefore, records were not typically kept by the facility or available during the PA on the use of PFAS in training, firefighting, or other non-traditional activities, or on its disposition.

The conclusions of this PA are predominantly based on the information provided during interviews with personnel who had direct knowledge of PFAS use at the facility. Sometimes the provided information was vague or conflicted with other sources. Gathered information has a degree of uncertainty due to the absence of written documentation, the limited number of personnel with direct knowledge due to staffing changes, the time passed since PFAS were first used (1969 to present), and a reliance on personal recollection. Inaccuracies may arise in potential PFAS release locations, dates of release, volume of releases, and the concentration of AFFF used. There is also a possibility the PA has missed a source of PFAS, as the science of how PFAS may enter the environment continually evolves.

In order to minimize the level of uncertainty, readily available data regarding the use and storage of PFAS were reviewed, retired and current personnel were interviewed, multiple persons were interviewed for the same potential source area, and potential source areas were visually inspected.

**Table 7-3** summarizes the uncertainties associated with the PA:

**Table 7-3 Summary of Uncertainties**

Area of Interest	Source of Uncertainty
AOI 1 Former CAL FIRE Fire Training Area	No information was available as to whether actual fires were set, and no information was available regarding the final disposition of AFFF after the training was completed.
AOI 2 Former META Yard Fire Training Area	An FTA feature was interpreted during reviews of aerial photographs dated between 1978 and 2017. No information is available regarding which entity or entities may have used the area in the late 1970s to mid-1980s and no information is

Area of Interest	Source of Uncertainty
	<p>available on what the area may have been used for during this earlier period of time.</p> <p>No information pertaining to the specifics of the waste and brush pile fire training burns are available and no information is available on whether AFFF was used.</p> <p>No information is available as to whether actual fires were set during a 2005 training event and no information is available on the final disposition of AFFF after the training was completed</p>
<p>AOI 3 CAL FIRE Cuesta Camp Tenant</p>	<p>No information was available on the precise location of the release and the amount and percentage of AFFF released is also not known.</p>
<p>AOI 4 O’Sullivan Airfield Shed</p>	<p>The shed was observed to have AFFF stored within it. No information is available regarding any incidental spills of the stored AFFF containers.</p>
<p>AOI 5 de Havilland Beaver Crash Site</p>	<p>Interviewees did not recall whether AFFF was used to extinguish any fires that may have resulted from the crash.</p>
<p>AOI 6 Fuel Point</p>	<p>Concentration of AFFF and its duration on site are unknown.</p>

### 7.3 Potential Future Actions

Based on the documented absence of the use or release of PFAS-containing materials at the locations listed in **Table 7-2**, evidence does not indicate that current or former ARNG activities contributed PFAS contamination to soil, groundwater, surface water, or sediment at the facility or adjacent areas. These locations will not move forward in the CERCLA process.

Interviews and records indicate that current or former ARNG activities may have resulted in potential PFAS releases at the six AOIs identified during the PA (**Table 7-1**). Based on the preliminary CSMs developed for the AOIs, there is potential for receptors to be exposed to PFAS contamination in soil, groundwater, surface water, and sediment at these AOIs. **Table 7-4** summarizes the rationale used to determine if the AOI should be considered for further investigation under the CERCLA process and undergo an SI.

ARNG evaluates the need for an SI at Camp SLO based on the presence of PFAS releases, possible receptors, and the migration potential of PFAS contamination to receptors.

**Table 7-4 PA Findings Summary**

Area of Interest	AOI Location	Rationale	Potential Future Action
AOI 1 Former CAL FIRE Fire Training Area	35°19'23.67"N; 120°44'48.62"W	Fire training activities from 1995/1996 to 2005/2006	Proceed to an SI, focus on surface water, sediment, soil, and groundwater
AOI 2 Former META Yard Fire Training Area	35°19'09.98"N; 120°44'22.52"W	Potential PFAS releases to the east parking lot area of the META yard occurred as early as 1978 through 2005	Proceed to an SI, focus on surface water, sediment, soil, and groundwater
AOI 3 CAL FIRE Cuesta Camp Tenant	35°19'44.76"N; 120°43'57.34"W	Potential PFAS releases in 2013 from flushing AFFF from hoses and a tank	Proceed to an SI, focus on surface water, sediment, soil, and groundwater
AOI 4 O'Sullivan Airfield Shed	35°19'34.43"N; 120°44'34.75"W	Tri-Max crash carts and buckets of AFFF concentrations stored here	Proceed to an SI, focus on surface water, sediment, soil, and groundwater
AOI 5 de Havilland Beaver Crash Site	35°19'27.71"N; 120°44'24.36"W	Airplane crash in 1972 where AFFF may have been used	Proceed to an SI, focus on surface water, sediment, soil, and groundwater
AOI 6 Fuel Point	35°19'46.0"N; 120°43'46.0"W	5-gallon container of AFFF was stored	Proceed to an SI, focus of surface water, sediment, soil, and groundwater



CLIENT	ARNG				
PROJECT	Preliminary Assessment for PFAS at Camp San Luis Obispo, CA				
REVISED	1/16/2020	GIS BY	MS	1/16/2020	
SCALE	1:10,200	CHK BY	GR	1/16/2020	
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c)		PM	RG	1/16/2020	

**Legend**

- Area of Interest
- Potential PFAS
- No Suspected
- Facility Boundary
- Water Body
- Wetland
- River/Stream



**Summary of Findings**



12420 Milestone Center Drive  
 Germantown, MD 20876

**Figure 7-1**

## 8. References

California Coastal Commission. 2016. California's Critical Coastal Areas, State of the CCAs Report June 2, 2006. Website accessed 10/1/18:

[https://www.coastal.ca.gov/nps/Web/cca\\_pdf/centcoastpdf/CCA49ChorroCreek.pdf](https://www.coastal.ca.gov/nps/Web/cca_pdf/centcoastpdf/CCA49ChorroCreek.pdf)

Coastal San Luis Resource Conservation District. 2001. Morro Bay Watershed Steelhead Restoration Planning Project. Stream Inventory Report, Chorro Creek, 2001.

ECM Consultants. 2016. *2016 Annual Groundwater Monitoring and Sampling, and Wet Weather Preparedness Report*.

Fuller, M., Brown, S., Wills, C., *et al.* 2015. *Geological Gems of California State Parks, Special Report 230*. California Geological Survey, Department of Conservation under Interagency Agreement C01718011 with California State Parks.

Geosystems Consultants, Inc. 1996. *Report – Preliminary Assessment, Camp San Luis Obispo, California*

Military Museum, n.d. *Historic California Posts, Camps, Stations and Airfields. Camp San Luis Obispo*. Website: <http://www.militarymuseum.org/CSLO%20History.html>

Morro Bay National Estuary Program (MBNEP). 2013. *Morro Bay Comprehensive Conservation Management Plan*

National Ground Water Association. 2018. *Groundwater and PFAS: State of Knowledge and Practice*. January 2018.

National Oceanic Atmospheric Administration (NOAA). 2018. *Data Tools: 1981-2010 Normals: San Luis Obispo Poly, CA US*. NOAA National Centers for Environmental Information, <<https://www.ncdc.noaa.gov/cdo-web/datatools/normals>> (August 16, 2018).

State of California. 2004. *San Luis Obispo Valley Groundwater Basin*. California's Groundwater Bulletin 118 [Updated February 2004].

United States Environmental Protection Agency (USEPA). 1991. *Guidance for Performing Preliminary Assessments under CERCLA*. EPA/540/G-91/013. September 1991.

US Army Corps of Engineers (USACE). 1996. *Recommendations for Post-Closure monitoring and Maintenance Sutter Avenue Landfill, Camp San Luis Obispo, California*.

Wieggers, M.O. 2010. *Geologic Map of the San Luis Obispo 7.5' Quadrangle San Luis Obispo County, California: A Digital Database*. California Department of Conservation, California Geological Survey, page-size map with text, 1 p., scale 1:24,000. <https://pubs.usgs.gov/pp/0819/report.pdf>

## **Appendix A**

### **Data Resources**

Data Resources provided separately on CD. **Appendix A - Data Resources** for Camp San Luis Obispo includes:

### **Camp SLO Aerial and Historical Photographs**

- Aerial photographs from 1949, 1956, 1959, 1965, 1972, 1977, 2001
- Oblique aerial photographs from 1963, 1976, 1989, 2003, 2009, 2013

### **Previous Investigations Completed at Camp SLO**

- 1996 Draft Recommendations for Post-Closure Monitoring and Maintenance Sutter Avenue Landfill
- 1996 Preliminary Assessment Camp San Luis Obispo, California
- 2007 Draft Final Site Inspection Report Former Camp San Luis Obispo
- 2011 Remedial Investigation Feasibility Study Camp San Luis Obispo, California
- 2016 Annual Groundwater Monitoring and Sampling, and Wet Weather Preparedness Report

### **Camp SLO Stored AFFF Documentation**

- 2006 Material Safety Data Sheet Chemguard 3% AFFF C-303
- 2008 Material Safety Data Sheet FireAde 2000 - Fire Fighting Agent

### **Camp SLO EDR Report**

- 2018 Camp SLO EDR Report 5326782

### **Camp SLO Lease Documents**

- Request for annexation of property by California Specialized Training Institute (CSTI); May 28, 1997
- Lease No. DA-04-353-ENG-5547 – Camp San Luis Obispo, California
- License to Use State Military Facility – Phillips 66 Co.; dated November 11, 2012
- Notice of Exemption – SLU Drill Grounds Training Site Lease and Operation; dated October 7, 2016
- RCNI Conoco Phillips 2017/2018
- California Military Department – License to use State Military Property – Phillips 66 Company; dated December 20, 2017

### **Camp SLO Site Map**

- Camp San Luis Obispo, California – rev. April 26, 1944 – Office of the Post Engineer (Map); Scale 1"=2,000'approx.

### **Camp SLO Historical Articles**

- The Tribune (April 10, 1972 news article) – “Air crash kills two on campus”
- The Tribune (Feb. 5, 1944 news article) – “Navy plane crash, Anzio, World War II week by week”

### **Camp SLO UCMR3 Data Set**

- Tabulated UCMR3 Data Set

### Former META Yard Fire Training Documentation

- CA ARNG Project Information Package – dated May 11, 2005
- CDF/San Luis Obispo County Fire Department Letter to Camp SLO EC – dated March 14, 2005
- Ansul 3% and 6% Extinguishing Agent Data Sheet and Material Safety Data Sheet
- Nature of Discharge Report - AFFF
- Camp SLO EC Internal Notes
- Air Pollution Control District to CDF Letter; Subject: Training Burns at Waste and Brush Pile, Camp San Luis Obispo – dated June 28, 1989



06-23-01

No.13367 153,19

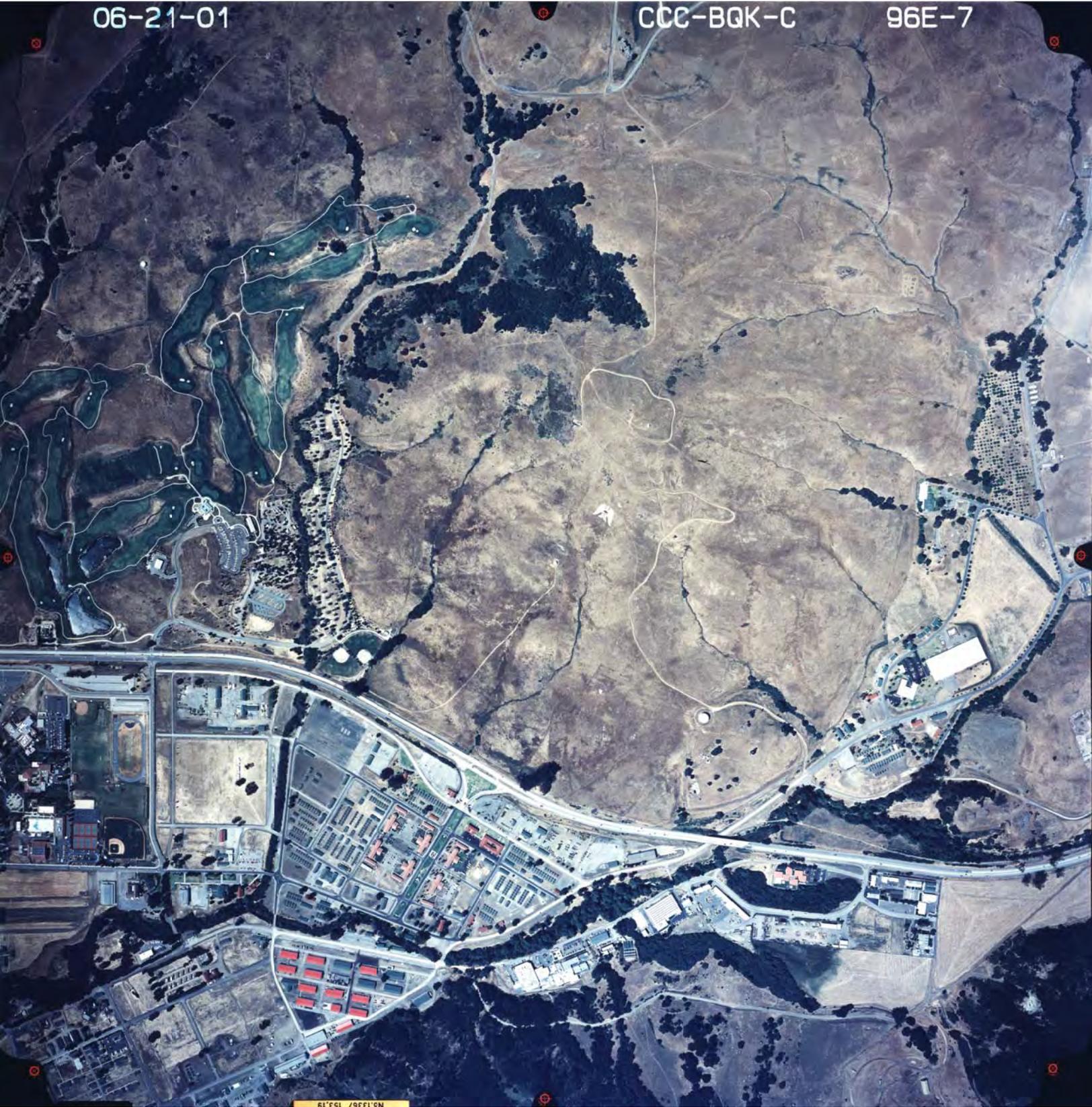
CCC-BQK-C

96D-6

06-21-01

CCC-BQK-C

96E-7



01/20/01

No.13367 153,19

06-21-01

CCC-BQK-C

96F-8



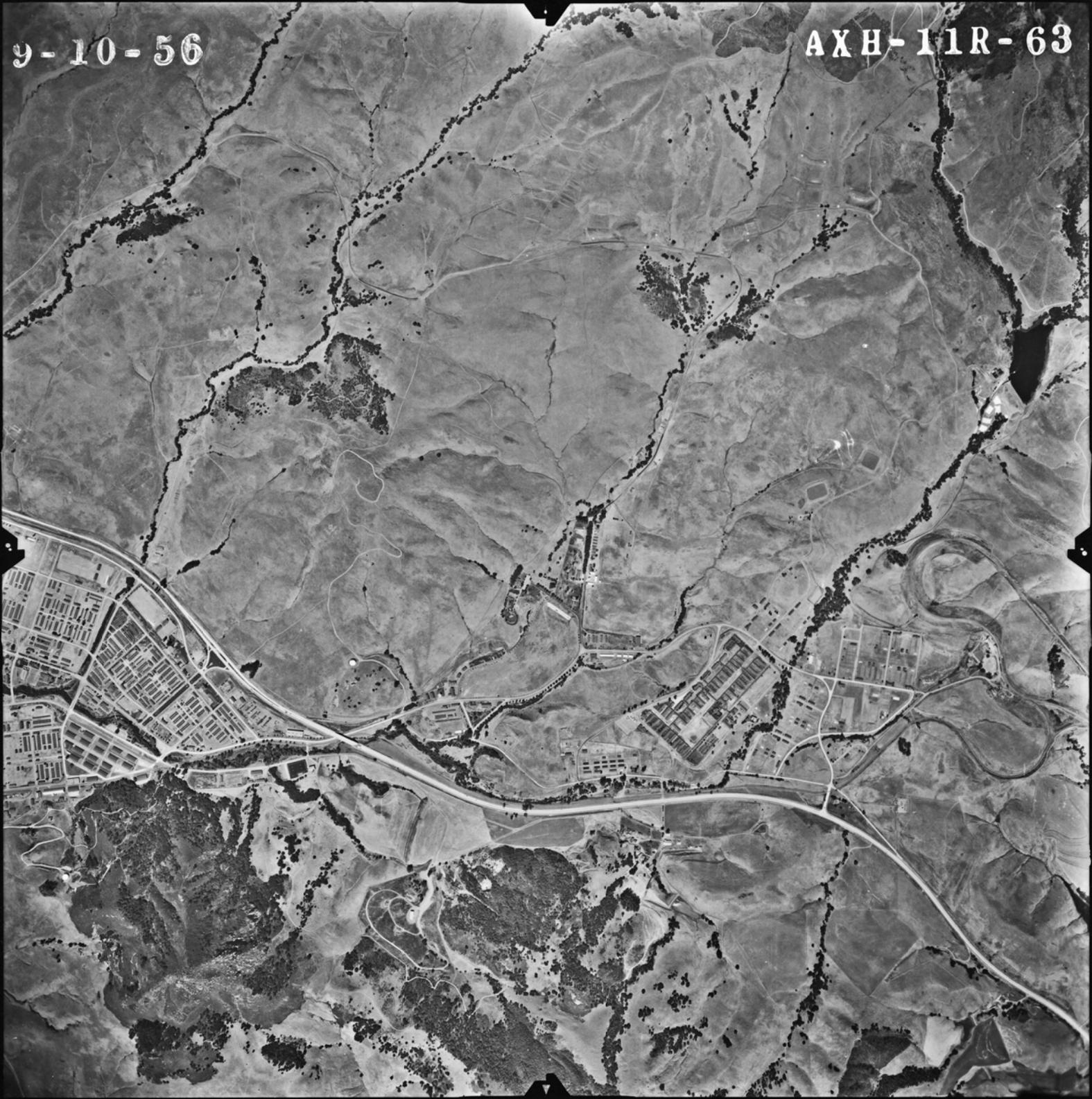
4 - 3 - 49

AXH - 4F - 24



9-10-56

AXH-11R-63



11-6-59

HK-GI-45



11-6-59

HA-GI-60



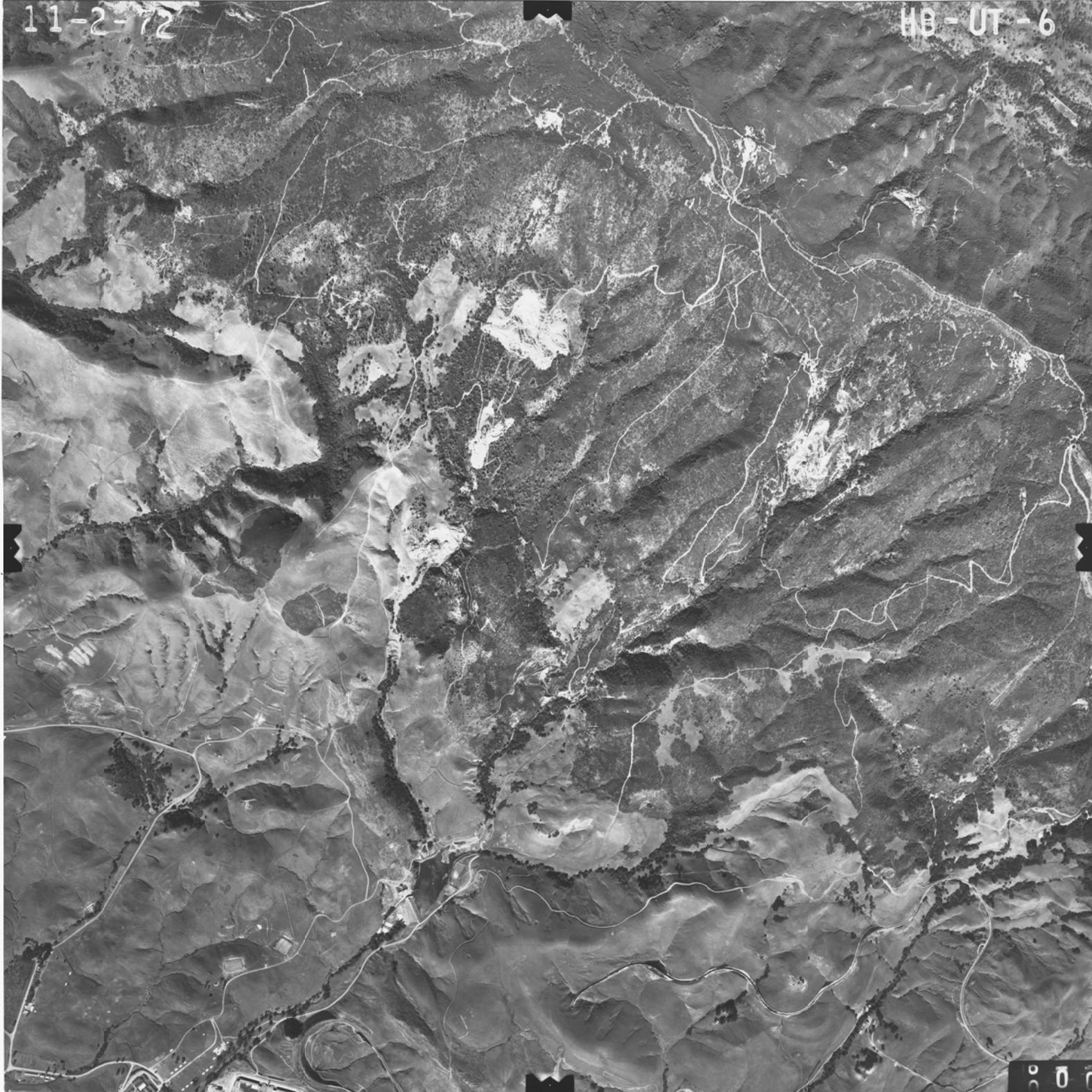
1 - 3 - 65.

HB- CX-49



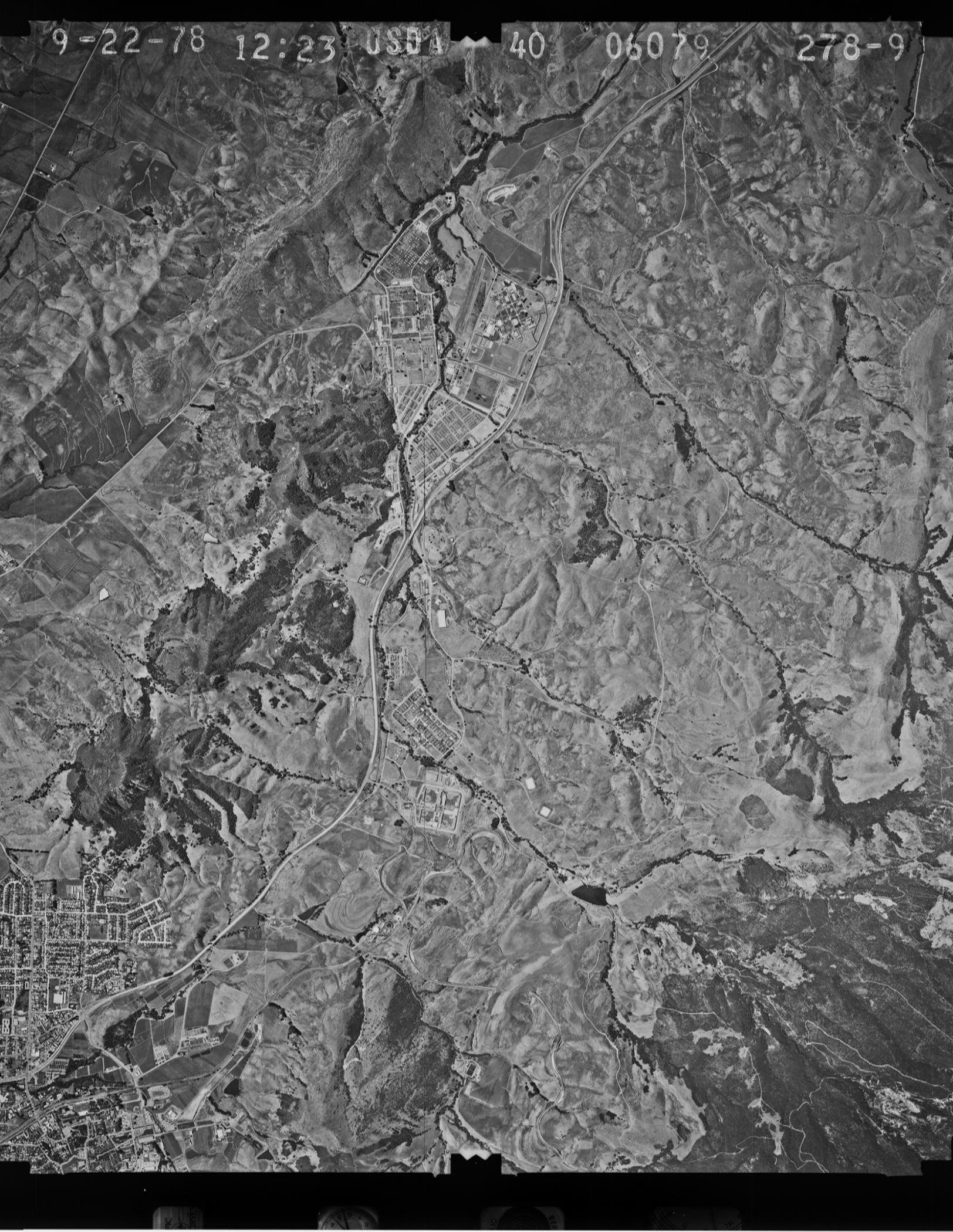
11-2-72

HB-UT-6



0 0 0

9-22-78 12:23 USDA 40 06079 278-9



9-13-78

USDA

40

06079

378-59



---

**Recommendations for Post-Closure  
Monitoring and Maintenance  
Sutter Avenue Landfill  
Camp San Luis Obsipo, California**

---

DRAFT



**U. S. Army Corps  
of Engineers**  
Environmental Design Section  
Sacramento District

**February 1996**

---

## **INTRODUCTION**

### **Purpose**

This report presents recommendations for long-term monitoring of the Sutter Avenue Landfill, located at Camp San Luis Obispo (Camp SLO), San Luis Obispo County, California. The recommendations focus primarily on ground water monitoring. Surface water, unsaturated zone and landfill gas monitoring are not warranted at this site. Cost estimates for ground water monitoring and for post-closure maintenance of the landfill cover are included as well (Attachments A and B).

### **Site Setting and History**

Camp SLO is located about 5 miles northeast of San Luis Obispo, along both sides of Highway 1 (Figure 1). It was established in 1928 as Camp Merriam, the original home of the California Army National Guard (CA ARNG). Camp SLO was leased to the federal government from 1940 to 1947 for use as a training facility during World War II. In 1947, control reverted to CA ARNG. In 1951, during the Korean conflict, the U.S. Army operated the Southwest Signal Center at Camp SLO, and part of Camp SLO remained under federal control until July 1, 1965, when the entire property was returned to state control. Camp SLO currently occupies 4100 acres, and covered more than 15,000 acres during World War II.

The Sutter Avenue Landfill is located in the southeast corner of Camp SLO (Figure 2). A review of aerial photographs (Geosystem, 1995) indicates that waste disposal began between 1969 and 1973 and continued until the mid-1980's. Wastes reported to have been disposed included commercial rubbish, scrap wood, scrap metal, weapon oil, brush and grass clippings, and some food waste (Ecology and Environment, 1991). Wastes were disposed in trenches and covered. Wastes in some parts of the landfill are thought to be submerged below the water table during periods of high ground water.

### **Previous Investigations**

Several investigations have been conducted at the Sutter Avenue Landfill. The most recent and comprehensive investigations were conducted by Geosystem (1995, 1995a, 1995b). Ten

monitoring wells have been installed at the landfill to date, and ground water monitoring has been conducted periodically from September 1990 until December 1993, and quarterly from October 1994 to the present.

### **Regulatory Status**

Sutter Avenue Landfill has been regulated under several Waste Discharge Requirements (WDR) issued by the Central Coast Regional Water Quality Control Board (RWQCB). The current WDR is Order Number 94-79, which includes Monitoring and Reporting Program (MRP) 94-79. California Code of Regulations, Title 23, Chapter 15, Article 5 (23 CCR) applies to monitoring of Class III landfills. A closure and postclosure maintenance plan for Sutter Avenue Landfill was submitted in November 1995 (Geosystem, 1995b). The closure plan calls for capping with a flexible membrane liner (FML).

The evaluation in this report focuses on requirements of the regulations (23 CCR Chapter 15) rather than those of the Monitoring and Reporting Program. This focus will allow for a proposal to be made for modification of the WDR for Sutter Avenue Landfill.

## **GROUND WATER MONITORING PROGRAM EVALUATION**

### **Monitoring Status**

#### **Detection Monitoring**

In 23 CCR, §2550.1.a.(1), a detection monitoring program is required for ground water at a landfill. A detection monitoring program was instituted at Sutter Avenue landfill in October 1994. Based on analytical results for the October 1994 monitoring event, and retesting in December 1994 and January 1995, it was concluded that a release had occurred. Several organic constituents, including 1,4-dichlorobenzene, carbon tetrachloride and chloroform were identified in down gradient wells.

Following detection of a release from the landfill, establishment of an evaluation monitoring program, and subsequently a corrective action monitoring program, is required. However, 23

CCR §2550.1.c requires continuation of a detection monitoring program to provide detection of subsequent releases. Detection monitoring should continue, in down gradient wells, for monitoring parameters that have not been detected (or have not exceeded background). Appropriate statistics should be conducted for monitoring parameters other than those in the evaluation or corrective action monitoring programs.

#### Evaluation Monitoring

Due to the confirmed release of organic contaminants from the Sutter Avenue Landfill, an evaluation monitoring program is required under 23 CCR §2550.1.a.(2). The evaluation monitoring program requires collection of data necessary to determine the extent of the release (23 CCR §2550.9.b), and an amended report of waste discharge providing a detailed description of corrective action measures to be taken (23 CCR §2550.9.d.(3)).

Following retesting of the affected wells, Geosystem submitted a revised report of waste discharge (1995c). The closure and post closure plan for the landfill provides the required details of corrective action for the landfill. In addition, Geosystem (1996) collected ground water samples by HydroPunch® and installed two additional wells to identify the extent of the release. The results of the investigation were not available at the time of this report, and the wells will not be sampled until February 1996. Assuming that the extent of the release has been determined, when the corrective action measures (capping) are implemented, the landfill will require a corrective action monitoring program. Evaluation monitoring is intended to be an interim program, while the continued detection monitoring described above, and the corrective action monitoring, described below, are long term programs.

#### Corrective Action Monitoring

Corrective action monitoring is required when the assessment of the extent of a release is completed and the RWQCB approves the amended report of waste discharge for corrective action (23 CCR §2550.1.a.(4)). The purpose of a corrective action monitoring program is to demonstrate that the corrective measures are effective in reducing levels of constituents of concern to below their respective concentration limits. With respect to those constituents that

showed significant evidence of a release, namely 1,4 dichlorobenzene, carbon tetrachloride and chloroform, the Sutter Avenue Landfill should begin a corrective action monitoring program when the landfill cover is complete.

• **Monitoring Parameters/Constituents of Concern**

The ground water monitoring program will include two lists of chemical constituents for analysis, monitoring parameters and constituents of concern. Monitoring parameters are physical parameters, hazardous constituents, waste constituents and reaction products that will provide a reliable indication of a release from the landfill (23 CCR 2550.8(e)).

The monitoring parameters specified in the WDR, including TDS, chloride, nitrate, pH, electrical conductivity, chemical oxygen demand, sulfate, manganese, sodium, and VOC<sub>composite</sub>, are a generic set of monitoring parameters for Class III landfills. In the absence of site-specific information, these parameters may be appropriate. They are not, however, the best monitoring parameters for Sutter Avenue Landfill, to balance timely indication of a release and costs, and should be modified as follows.

The VOC<sub>composite</sub> parameter is not appropriate for corrective action monitoring, because the effectiveness of corrective action will be evaluated based on reduction of each individual organic compound below its respective concentration limit. In addition, for detection of any future releases, the individual VOC's are probably the best indicator constituents, due to their absence in background, and their relatively high mobility, as evidenced by the detection of VOC's in down gradient wells. EPA method 8260 analysis should be conducted for volatile organic constituents to provide concentrations of individual constituents and to maintain consistency with the quarterly monitoring conducted to date. Dichlorodifluoromethane was detected in well MW-1 in October and December 1994, but has not been analyzed in subsequent monitoring. Future monitoring events should report dichlorodifluoromethane by 8260 analysis.

Total dissolved solids, pH (field), electrical conductivity (field) and chloride should be retained to provide evidence of a release of inorganic constituents, although statistical testing should not

be conducted on the field measured parameters. Manganese, sulfate, chemical oxygen demand (COD), and sodium should be dropped from the list of monitoring parameters.

Constituents of concern include waste constituents, reaction products and hazardous constituents that are reasonably expected to be derived from the landfill waste, and are specified in the WDR (23 CCR §2550.3). Constituents of concern for Sutter Avenue Landfill should include the monitoring parameters above, Title 22 metals, and semi-volatile organic compounds by EPA method 8270. Monitoring of constituents of concern is required at least every five years (23 CCR §2550.8.g). When analyzed, constituents of concern that are not also monitoring parameters should be statistically evaluated for evidence of a release, pursuant to the detection monitoring program. If constituent of concern monitoring, and subsequent retesting, indicates evidence of a release, the extent of the release of the particular constituent should be evaluated, and the constituent added to the list of monitoring parameters for the corrective action monitoring program. Constituents of concern should be analyzed for all new wells, and every five years in all wells in the monitoring program, for the duration of ground water monitoring at the site.

### **Monitoring Network**

Ten wells have been installed at Sutter Avenue Landfill, MW-1 through MW-10 (Figure 3). Monitoring wells MW-2, -5 and -8 are located upgradient from the landfill; MW-1 and MW-4 are downgradient, immediately adjacent to the landfill; MW-6 and MW-7 are down gradient, a distance from the landfill perimeter; MW-9 and MW-10 were installed approximately 250 feet down gradient from wells MW-6 and MW-7 (Phillip Miller, personal communication 1/29/96); and MW-3 is cross-gradient, on the west side of the landfill.

Water level measurements should continue to be taken from all monitoring wells on site, and periodic inspections of each well should be made at that time.

Wells MW-2 and MW-5 have been dropped from sampling, with the approval of the RWQCB. MW-3 is not down gradient of landfilled waste (Figure 4) and should be dropped from sampling as well. MW-8 should continue to be monitored as the background well.

Assuming that MW-9 and MW-10 represent the down gradient limit of the release of organic constituents from the landfill, they will either become a part of the corrective action monitoring program (if VOC's are detected) or will be in detection monitoring (if no VOC's are detected). Wells MW-1, MW-4, MW-6 and MW-7 should be sampled as a part of corrective action monitoring.

### **Monitoring Frequency**

Regulations call for either quarterly sampling of ground water (23 CCR §2550.7.e.12.B.2) or semi-annual sampling with four samples collected from each monitoring point during each sampling event (23 CCR §2550.7.e.12.B.1). However, it is also stated that *the sampling method (including the sampling frequency and the interval of time between successive samples) shall be appropriate for the medium from which samples are taken* (CCR §2550.7.e.12.B). For ground water at Sutter Avenue Landfill, quarterly monitoring may not be appropriate.

Ground water has been monitored on 12 occasions since September 1990, and quarterly since October 1994. For most monitoring parameters, especially the VOC's that are most indicative of a release, concentrations vary over a narrow range at individual wells (Figures 5 through 7). In addition, the times of high and low ground water levels, early spring and late fall, respectively, have been identified through quarterly monitoring (Figure 8), and the direction of ground water flow is consistently to the north (Figures 3, 9 through 11). For these reasons, semi-annual monitoring, or annual monitoring in some wells, may be appropriate unless a change in the hydrogeologic regime occurs, such as with capping of the landfill.

Since a change in ground water recharge and concentrations of chemical constituents may occur following capping of Sutter Avenue Landfill, quarterly monitoring should continue in down gradient wells for a period of one year after closure. Future monitoring beyond one year may be

reduced depending on analytical results, and well location. Wells MW-1 and MW-4, at the point of compliance, should be reduced to semi-annual monitoring if concentrations are stable or decreasing, based on a statistical trend analysis. Wells MW-9 and MW-10, which are assumed to be at the down gradient limit of affected ground water, should be reduced to semi-annual if concentrations are stable or decreasing, or if no organic constituents are detected during the year following closure. Wells MW-6 and MW-7, within the zone affected by organic constituents from the landfill, should be reduced to annual monitoring. These wells do not provide for identification of future releases, nor do they monitor movement of the leading edge of organic constituents in ground water. They are useful for identifying reductions in concentrations over time, however. If down gradient wells show increasing concentrations of organic constituents, or indicate a release of additional compounds, monitoring should continue on a quarterly basis until the criteria above are met.

Background well MW-8, should be reduced to semi-annual monitoring. Landfill closure will have little effect on this upgradient well, and the background concentrations have been well established during 5 years of monitoring.

### **Monitoring Duration**

Corrective action monitoring may be discontinued, and the landfill may revert to a detection monitoring program, when the concentration of each constituent of concern has remained at or below its concentration limit for a period of one year (23 CCR §2550.10.g.1). When concentration limits are reached in the wells down gradient from Sutter Avenue Landfill, detection monitoring should continue for a period of two years, at a semi-annual frequency for point of compliance and background wells. If no concentration limits are exceeded during this time, and if no new evidence of a release is found, monitoring should be discontinued.

### **Concentration Limits/Water Quality Protection Standard**

For each constituent of concern, a concentration limit must be defined. The concentration limit may be either the background value of that constituent (23 CCR 2550.4.a.1) or a concentration limit greater than background established pursuant to a corrective action program (23 CCR

2550.4.a.3). For Sutter Avenue Landfill, the concentration limit for constituents that have not exceeded background values should be established at the background value for that constituent. For organic constituents detected in down gradient wells, the concentration limit should be established as the California MCL for each constituent.

A water quality protection standard must be established as well. The water quality protection standard consists of the list of constituents of concern, the concentration limits, and a point of compliance. For constituents in the detection monitoring program, i.e., not detected above background, the point of compliance should be the down gradient limit of the landfill, as monitored at wells MW-1 and MW-4. For organic constituents detected in downgradient wells the point of compliance should be established at the downgradient limit of the release, as monitored by wells MW-9 and MW-10.

#### **Sampling and Analysis Plan**

A water quality monitoring program must include written procedures for sampling and analysis, describing sample collection, sample preservation and shipment, analytical procedures, and chain of custody control (23 CCR §2550.7.e.4). Details of reporting requirements should be included in the sampling and analysis plan as well. A sampling and analysis plan helps to ensure that sample results are comparable between sampling events, even if sampling personnel change, and is critical to the success of any ground water monitoring program. A comprehensive sampling and analysis plan has not been developed for Sutter Avenue Landfill and should be written prior to implementation of any proposed changes in the monitoring program. The document should be submitted to the RWQCB for approval. A checklist, used by DTSC for review of ground water sampling and analysis plans is attached for reference (Attachment C). While all items are not required, consideration of the checklist should result in a comprehensive and high quality document.

**Reporting**

A monitoring report should be submitted following every sampling event, whether it be quarterly or semi-annual. The report should include the results of all chemical analyses conducted, water level information and a contour map of water levels showing the ground water flow direction, and statistical analysis of all detection monitoring parameters. Graphical presentation of data is very labor intensive, and the addition of a single data point to a graph after each monitoring event is seldom helpful to understanding trends in water quality. Graphical presentation should be proposed for the annual report only.

In addition to the monitoring report for each event, an annual report should be prepared. The annual report should include a comprehensive tabulation of all data for the year and an interpretation and discussion of water quality results during the year.

**UNSATURATED ZONE MONITORING**

Ground water at Sutter Avenue Landfill is less than ten feet below the ground surface in several wells during periods of high ground water. In fact, the base of waste is probably submerged periodically. In light of this, unsaturated zone monitoring is not feasible, nor would it be effective.

**SURFACE WATER MONITORING**

After closure of the landfill, waste will be isolated from surface runoff by a 60 mil HDPE cover. Surface water could potentially be affected by discharge of ground water containing landfill constituents. Assuming the extent of the release has been identified by wells MW-9 and MW-10, however, affected ground water is approximately 1500 feet or more from an eventual discharge point at Chorro Creek. Continued ground water monitoring is the most effective means for identifying any potential future impacts to surface water.

## **LANDFILL GAS MONITORING**

Landfill gas monitoring conducted in 1988 did not indicate significant generation of methane or other organic vapors from the Sutter Avenue Landfill. Gas vents will be installed in the landfill cover, and these should be monitored approximately 6-12 months after final closure. An ongoing landfill gas monitoring program should not be conducted, however.

## **SUMMARY OF RECOMMENDATIONS**

- Continue detection monitoring for constituents not detected above background concentrations, begin corrective action monitoring for 1,4 dichlorobenzene, carbon tetrachloride and chloroform following landfill closure.
- Monitor a site-specific set of monitoring parameters, including VOC's by EPA Method 8260, TDS, and chloride. Measure pH and EC in the field, but do not conduct statistical analysis. Ensure that dichlorodifluoromethane is reported.
- Monitor water levels in all wells at the site. Sample only wells MW-1, MW-4, MW-6, MW-7, MW-8, MW-9 and MW-10.
- Monitor quarterly for one year following closure of the landfill. Reduce monitoring to semi-annual if concentrations of constituents remain stable or decline.
- Set concentration limits for the detected organic constituents equal to the state MCL.
- Continue corrective action monitoring until results are at or below the concentration limits for a period of one year, and no new evidence of a release has been detected. Conduct detection monitoring for an additional two years.
- Prepare a comprehensive sampling and analysis plan for the site.
- Prepare graphical analysis of monitoring results on an annual basis only.
- Sample the landfill gas vents on a one-time basis.

The proposed criteria for determining monitoring frequency are presented in Figure 12. A comparison of the current and proposed monitoring programs are included in Tables 1 and 2.

**Table 1 - Current monitoring program according to MRP 94-79**

<b>Well Numbers</b>	<b>Monitoring frequency</b>	<b>Analytes</b>
MW-1, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, MW-10	quarterly	TDS, chloride, nitrate, pH, EC, COD, sulfate, manganese, sodium, total VOC's
MW-2, MW-5	quarterly	water levels only

**Table 2 - Proposed monitoring program**

<b>Well Numbers</b>	<b>Monitoring Frequency</b>	<b>Analytes</b>
MW-1, MW-4, MW-9, MW-10	quarterly for one year, then semi-annual*	TDS, chloride, nitrate, pH, EC, individual VOC's
MW-8	semi-annual	TDS, chloride, nitrate, pH, EC, individual VOC's
MW-6, MW-7	quarterly for one year, then annual*	TDS, chloride, nitrate, pH, EC, individual VOC's
MW-2, MW-3, MW-5	quarterly for one year, then semi-annual	water levels only

\* assuming stable or decreasing concentrations of detected constituents

**REFERENCES**

Ecology and Environment, 1991, CERCLA Screening Site Inspection, Camp San Luis Obispo, prepared for U.S. Environmental Protection Agency.

Geosystem, 1995, Preliminary Assessment, Camp San Luis Obispo, California (Draft), prepared for Division of the State Architect.

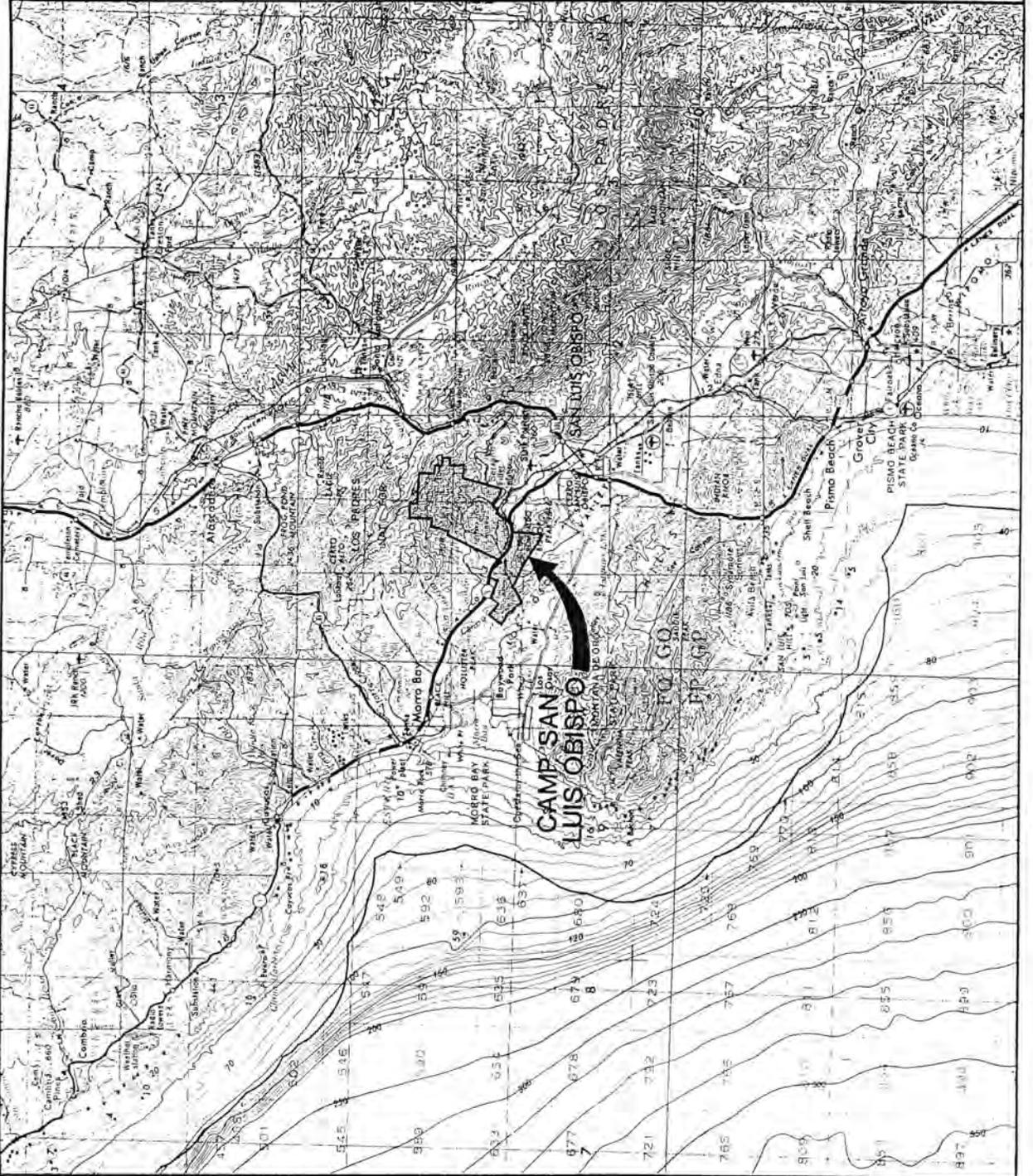
Geosystem, 1995a, First Quarter 1995 Detection/Evaluation Monitoring, Sutter Avenue Landfill, Camp San Luis Obispo, California, prepared for Division of the State Architect.

Geosystem, 1995b, Final Closure and Postclosure Maintenance Plan, Sutter Avenue Landfill, Camp San Luis Obispo, California, prepared for Division of the State Architect.

Geosystem, 1995c, Discrete Retest Monitoring and Revised Report of Waste Discharge, Sutter Avenue Landfill, Camp San Luis Obispo, California, prepared for Division of the State Architect.

Geosystem, 1996, Letter to Ms. Alison Jones, Central Coast Regional Water Quality Control Board, dated January 11, 1996.

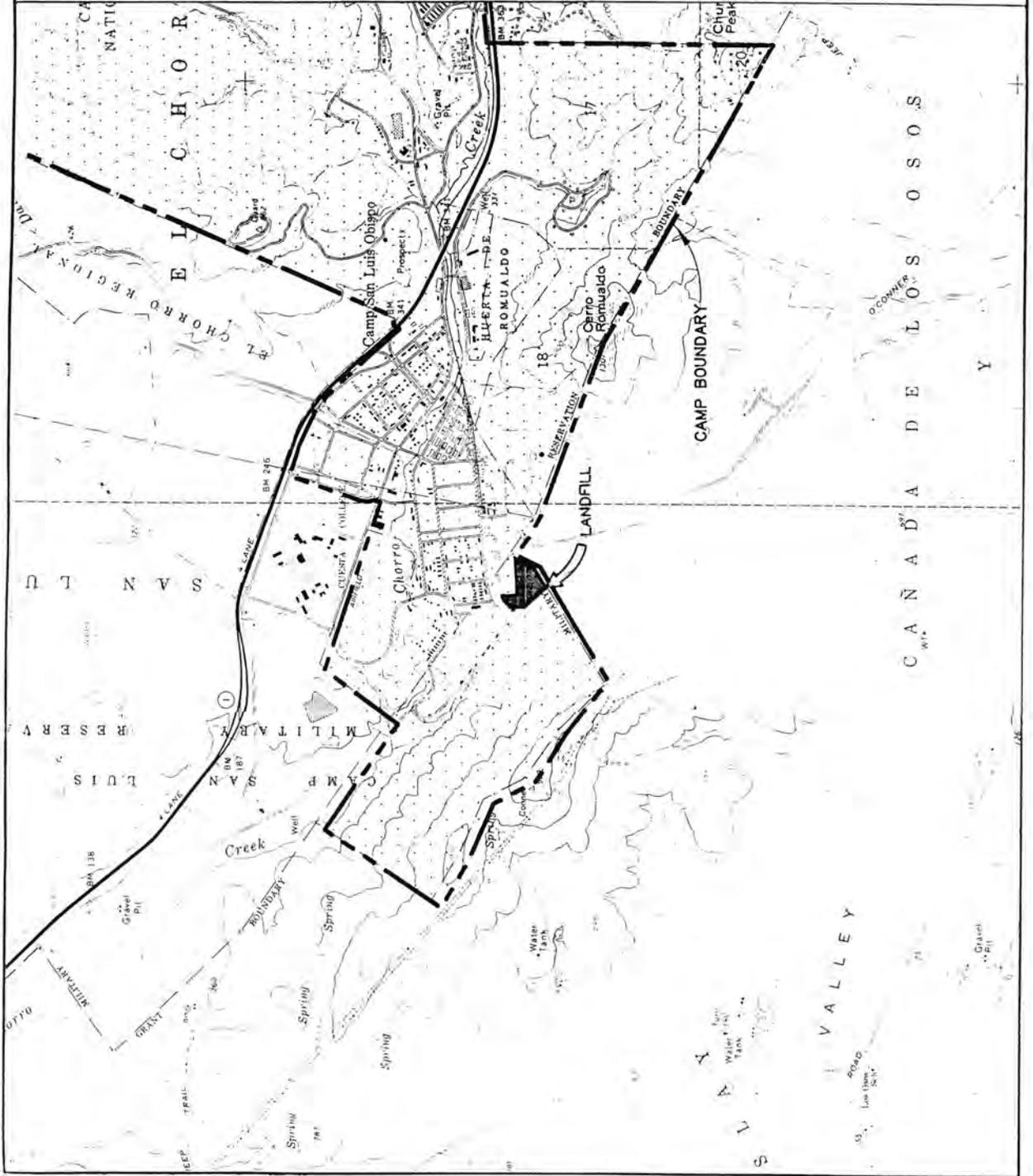
Miller, Philip, 1996, personal communication.



REFERENCE  
 U.S.G.S TOPOGRAPHIC - BATHYMETRIC SERIES  
 SAN LUIS OBISPO, CALIFORNIA, DATED 1956,  
 REVISED, 1969, SHORELINE REVISED AND  
 BATHYMETRY ADDED 1979.  
 SCALE = 1:250,000.

FIGURE 1

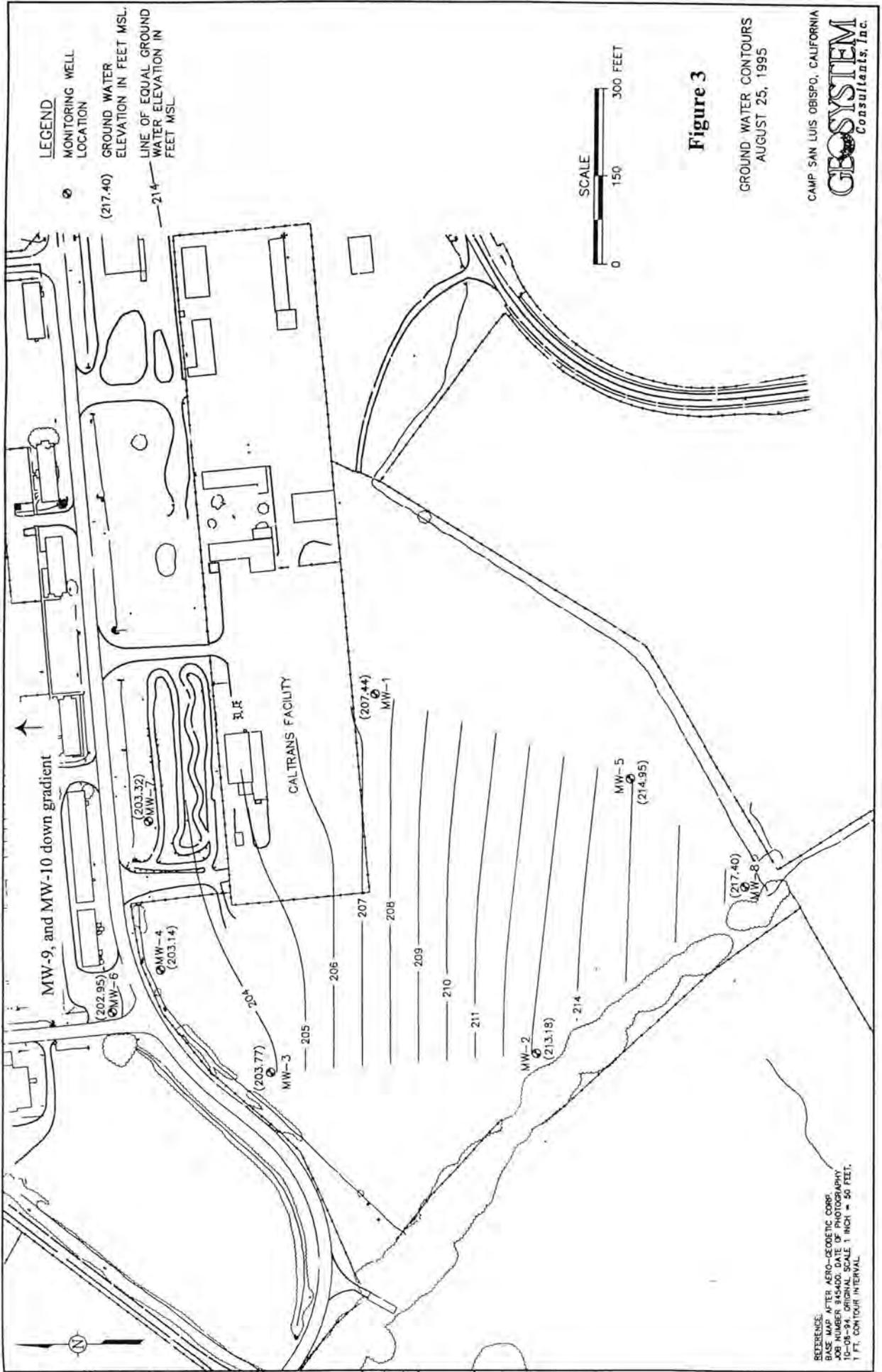
LOCATION MAP



REFERENCE  
 U.S.G.S. 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 SAN LUIS OBISSO AND MORRO BAY QUADRANGLES  
 DATED 1965, PHOTOREVISED 1978.  
 SCALE = 1:24,000.

FIGURE 2

VICINITY MAP



**LEGEND**

- MONITORING WELL LOCATION
- EXPLORATORY DRILL HOLE
- ▭ APPROXIMATE BOUNDARY OF KNOWN WASTE DEPOSITS
- - - WASTE DISPOSAL BOUNDARY (APPROXIMATE)
- DRAINAGE DITCH AND DIRECTION OF FLOW
- x - PERIMETER FENCE (APPROXIMATE)

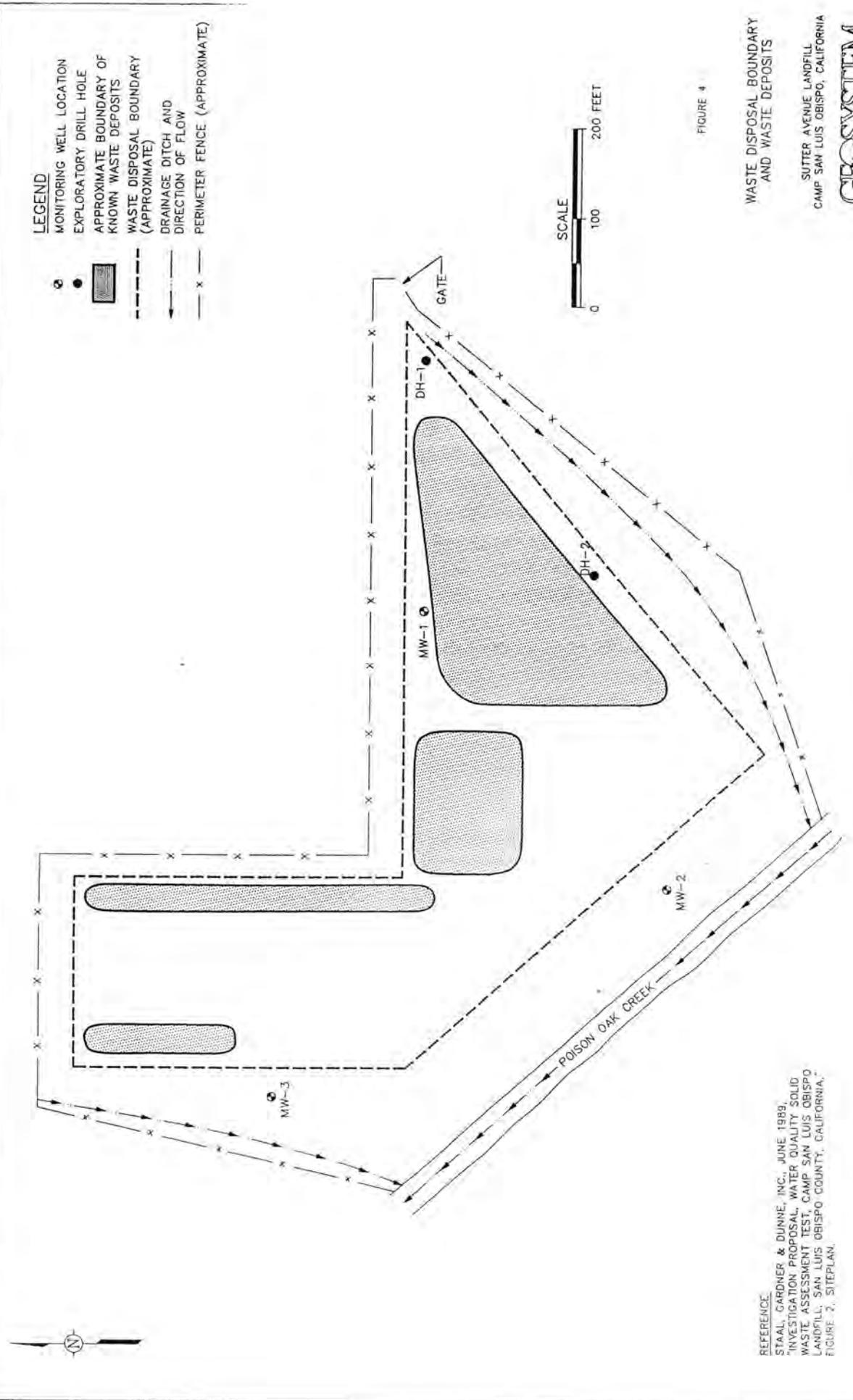


FIGURE 4

WASTE DISPOSAL BOUNDARY AND WASTE DEPOSITS

SUTTER AVENUE LANDFILL  
CAMP SAN LUIS OBISPO, CALIFORNIA

**GEO SYSTEM**  
Consultants, Inc.

REFERENCE:  
STAAL, GARDNER & DUNNE, INC., JUNE 1989,  
"INVESTIGATION PROPOSAL, WATER QUALITY SOLID  
WASTE ASSESSMENT TEST, CAMP SAN LUIS OBISPO  
LANDFILL, SAN LUIS OBISPO COUNTY, CALIFORNIA,"  
FIGURE 2, SITEPLAN.

# Concentration of CTC - Sutter Ave.

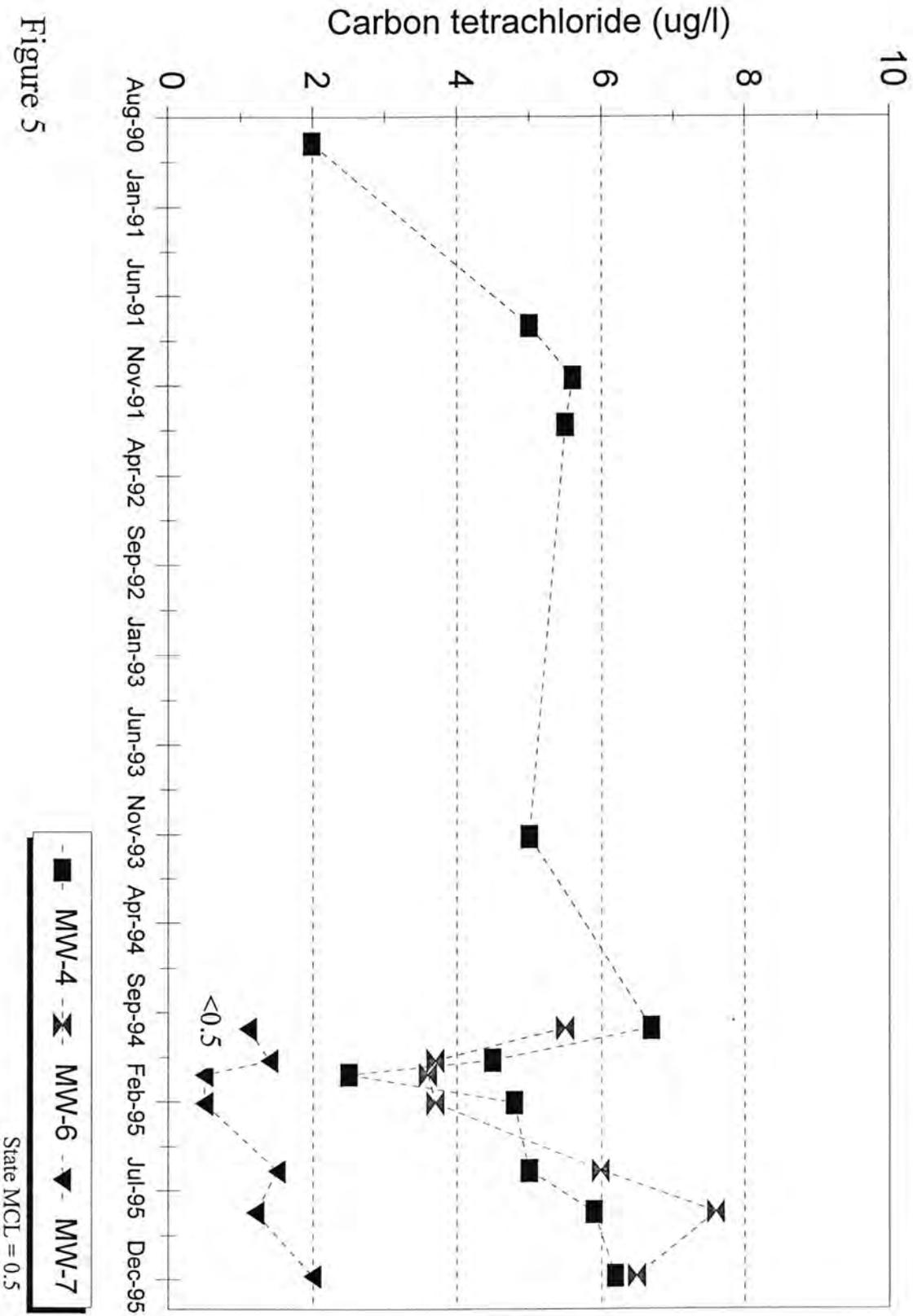


Figure 5

# Concentration of 1,4-DCB - Sutter Ave.

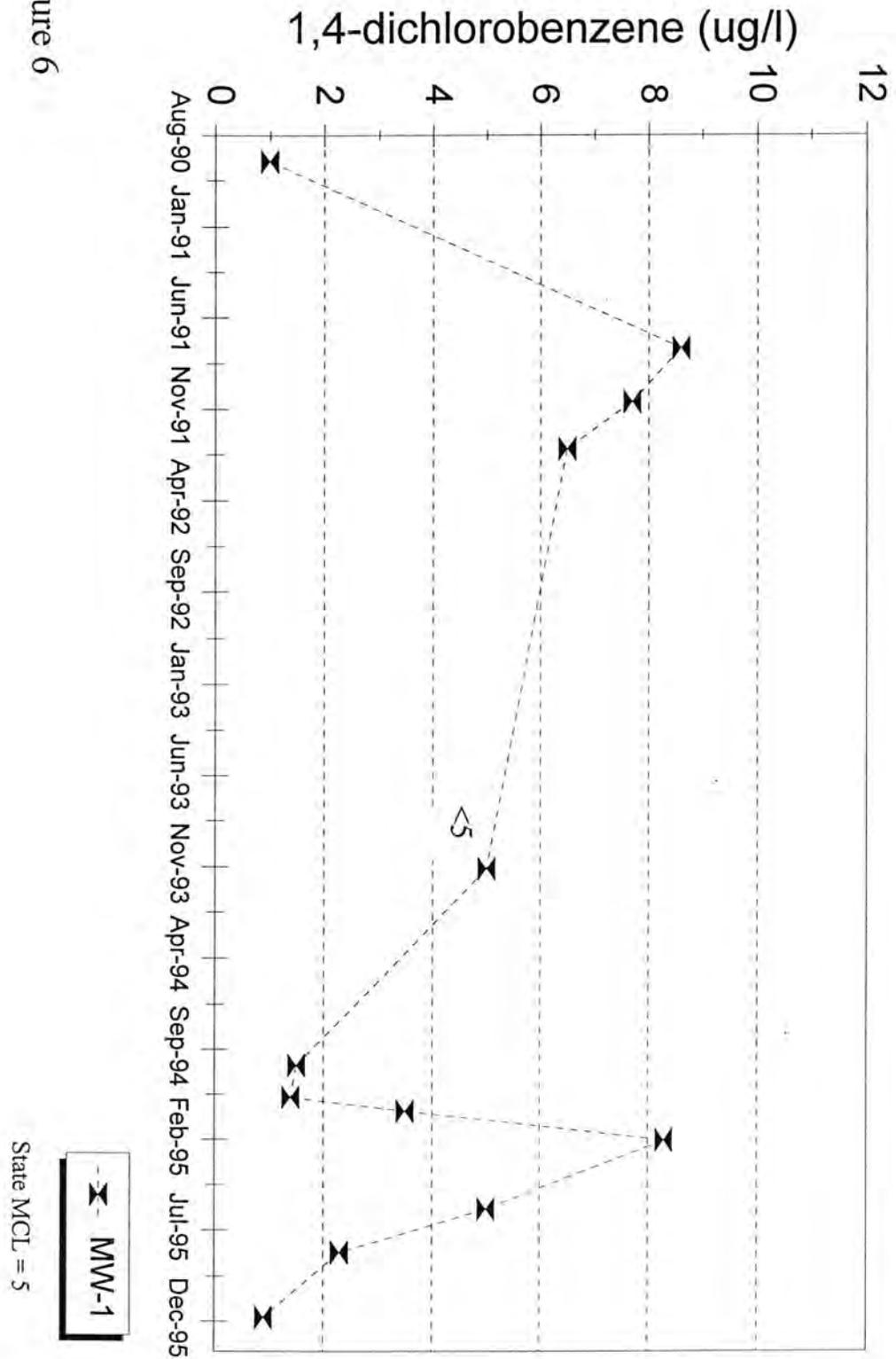


Figure 6

# Conc. of Chloroform - Sutter Ave.

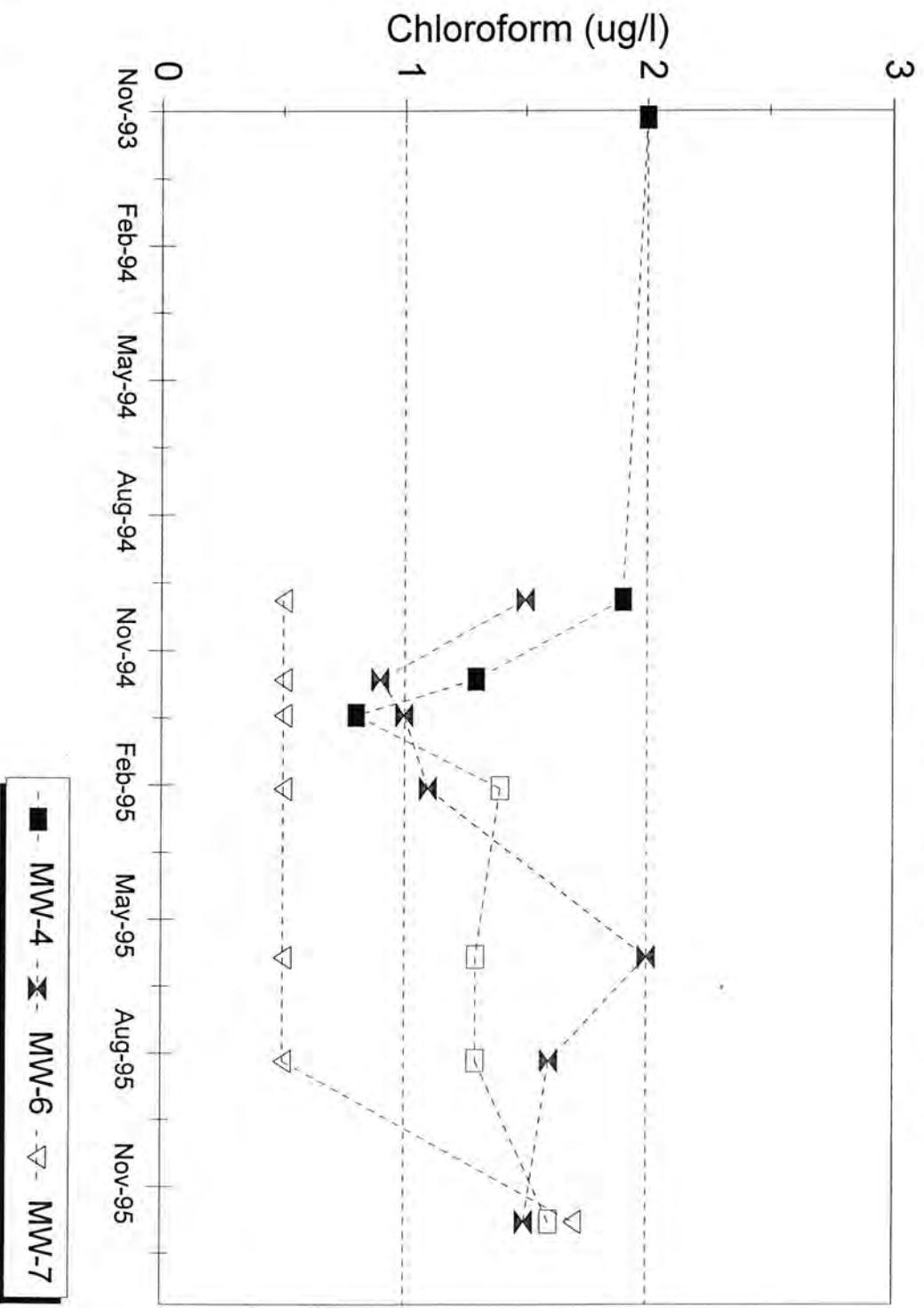


Figure 7

# Sutter Ave. Landfill Water Levels

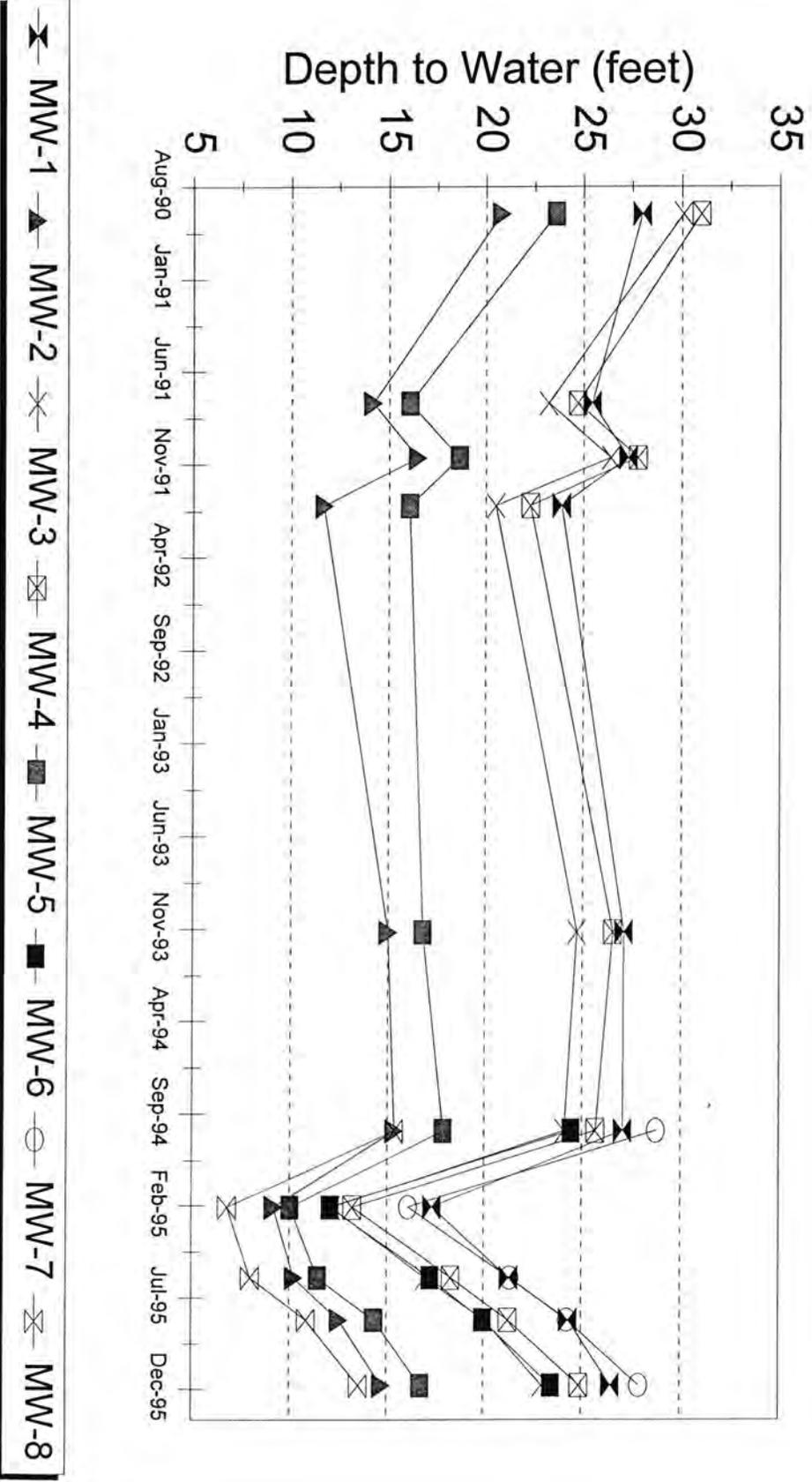


Figure 8

# Sutter Ave. Water Levels - 10/94

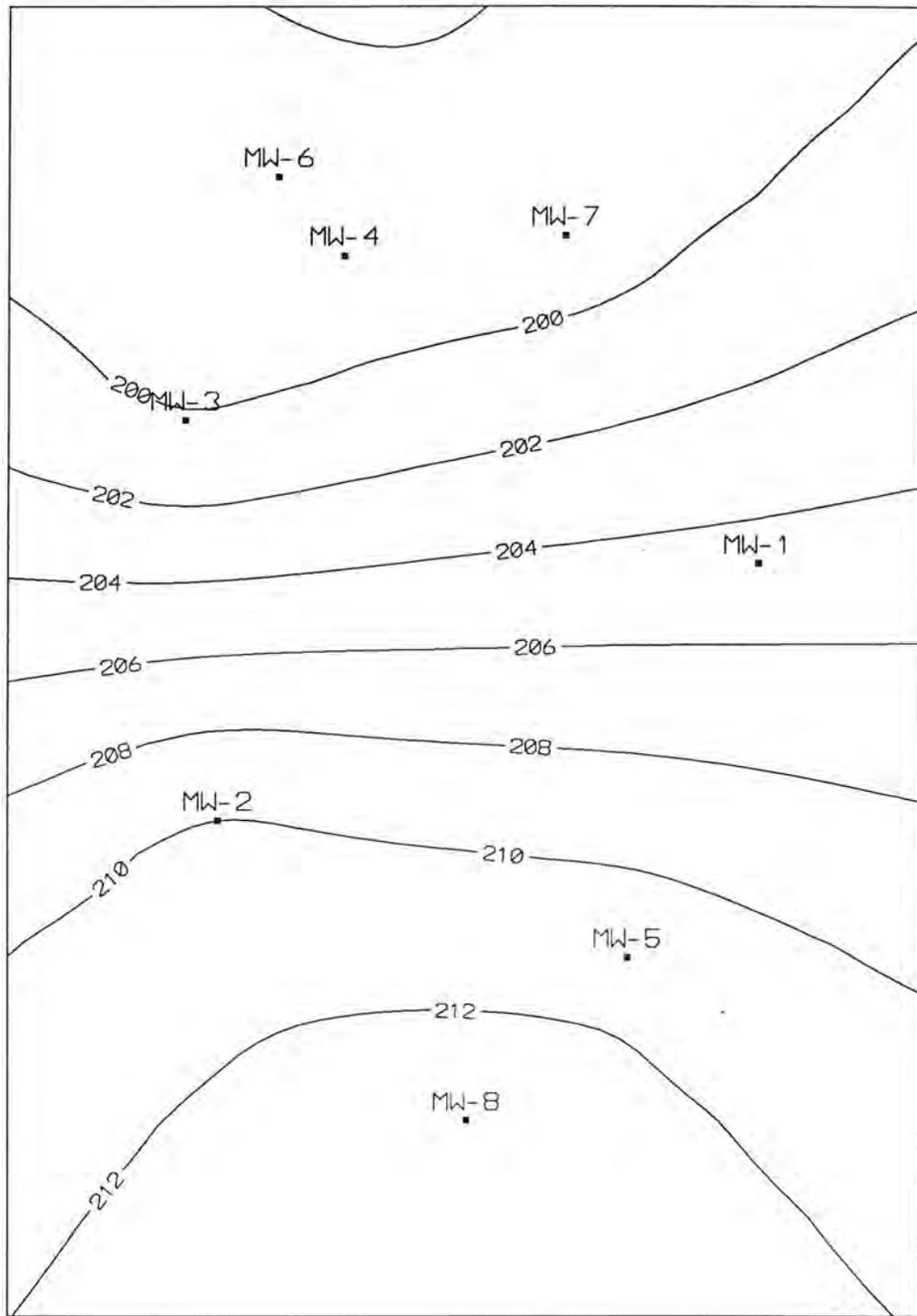


Figure 9

# Sutter Ave. Water Levels - 2/95

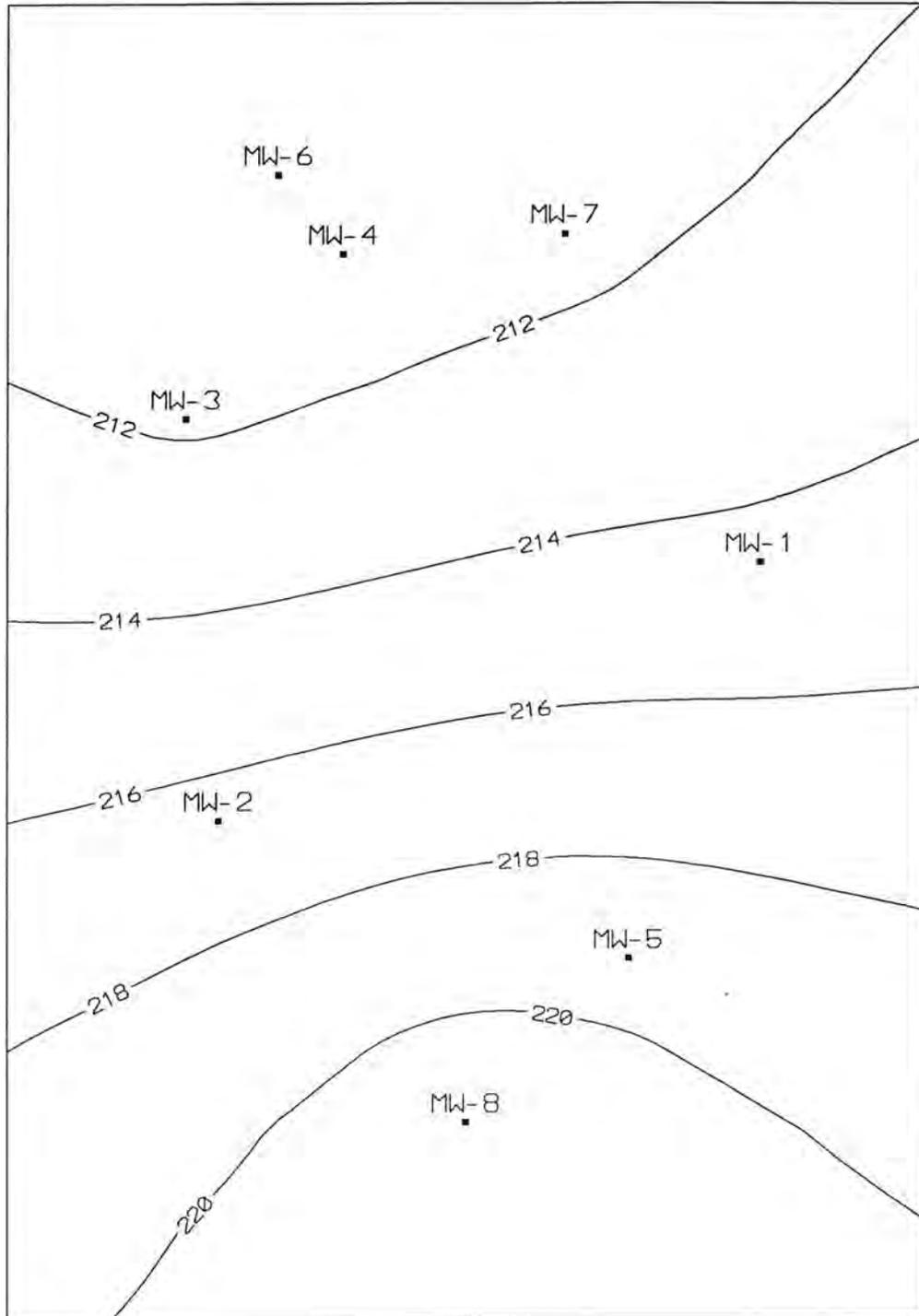


Figure 10

# Sutter Ave. Water Levels - 6/95

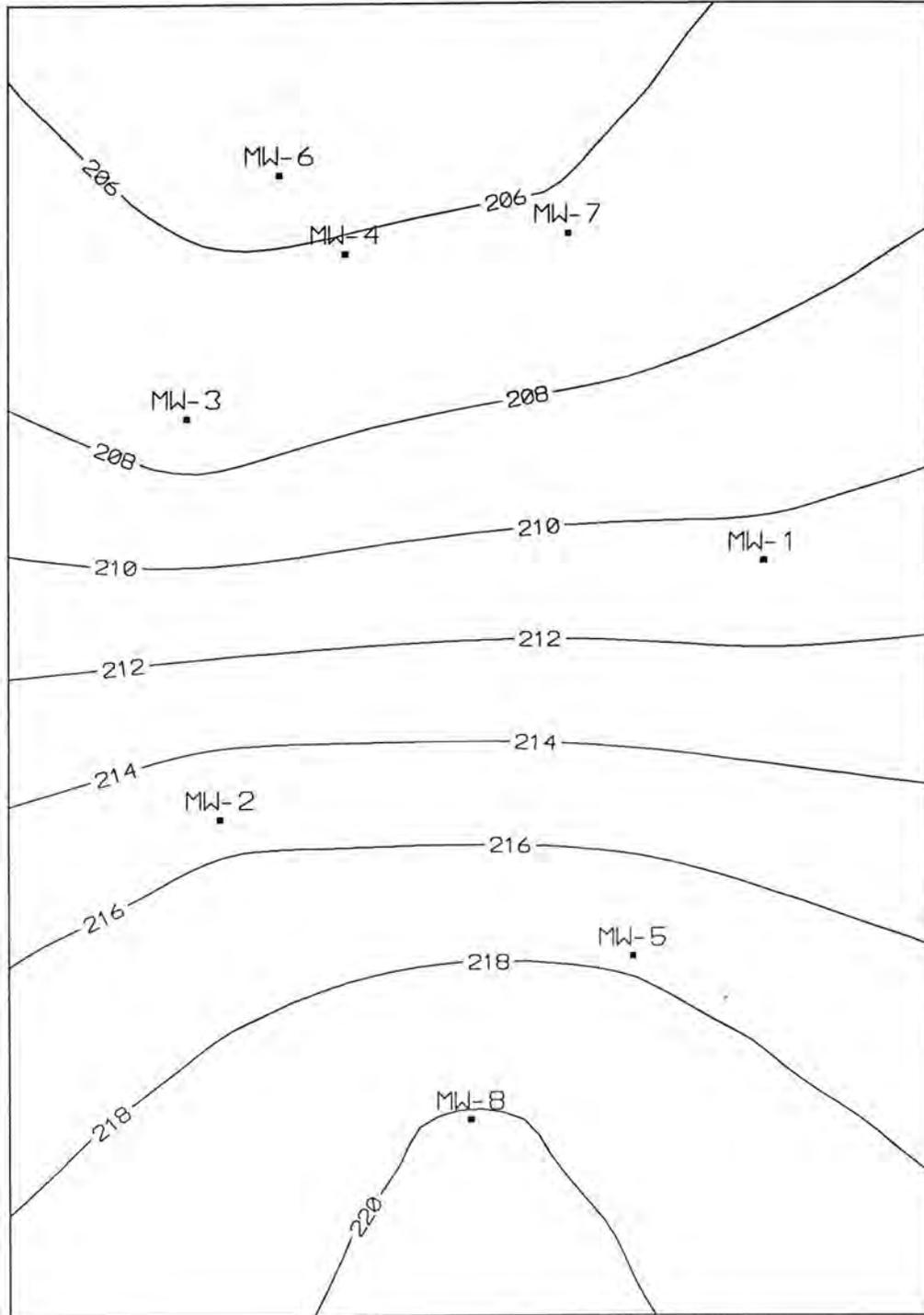


Figure 11

# CORRECTIVE ACTION MONITORING PROPOSAL

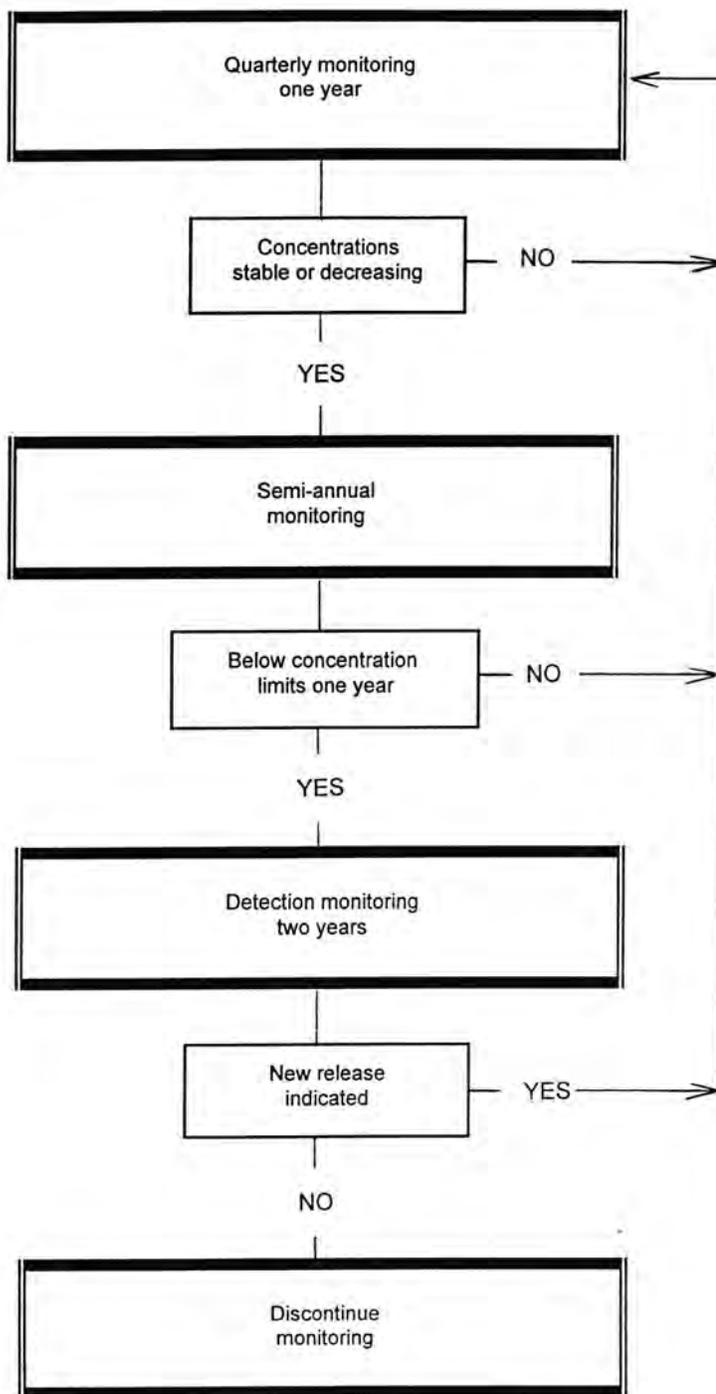


Figure 12

## Attachment C

### **Guidelines for the Preparation of Water Quality Sampling and Analysis Plans (WQSAPs)**

The Department is currently in the process of developing a checklist for use in the review (by Department staff) of WQSAPs. The items listed in that checklist are included in this attachment to aid facilities in the preparation of their WQSAP.

The WQSAP is the document that completely describes the water quality monitoring program for a regulated unit at a RCRA facility. It must identify the regulated unit, describe pertinent details about the construction of the unit and the historical use of the property, and describe waste management activities at the unit. The WQSAP must describe the hydrogeology of the area and contain specifications for the water quality monitoring systems (ground water, surface water and unsaturated zone) in use at the facility. The WQSAP must describe any contamination that has been identified and state whether the regulated unit will be in detection, evaluation or corrective action monitoring.

The WQSAP must list the constituents of concern and monitoring parameters and provide documentation to support the lists. The WQSAP must specify the sampling frequency and the number and kinds of samples to be collected during each sampling event. The WQSAP must provide information used to establish background values for all constituents of concern and all monitoring parameters and must provide a detailed description of the statistical methods to be used to evaluate analytical data.

The WQSAP must contain, or contain reference to, the Quality Assurance Project Plan (QAPP). The QAPP must describe the data quality objectives (in terms of accuracy and precision), acceptance criteria for analytical data and the format for reporting the results of the Quality Assurance /Quality Control (QA/QC) program. (Note: Proposed detection limits must be low enough to fulfill the data needs of the monitoring program.)

The WQSAP must contain detailed information describing the physical process of sampling. This portion of the WQSAP is generally written as a stand alone document that is appropriate for use by field personnel and is usually referred to as the sampling and analysis plan (SAP).

## Sampling and Analysis Plan Checklist

This sampling and analysis plan (SAP) checklist was developed to address the physical process of obtaining field information, measurements, and water quality samples. The SAP should be included in the WQSAP for each facility and should be written as an enforceable document. Deviations from the procedures described in the current SAP for a facility are subject to enforcement by the Department.

The SAP must be written to unambiguously describe exactly what steps will be taken to ensure that representative samples are collected. The SAP must contain sufficient detail for a sampler with limited experience to understand and follow and to ensure that sampling will be conducted in the same manner by different samplers.

- The SAP must state that, before each sampling event (e.g. quarterly sampling) each member of the field team must sign a document stating that he/she has read and understands the current version of the SAP. A copy of this document must be submitted to the Department with the report of analytical results.
- The SAP must describe equipment and procedures for the measurement of the depth to water. The SAP must specifically state that water levels will be measured in all wells and piezometers at least quarterly for the calculation of ground water flow rate and direction, that all water levels will be measured in the shortest possible time and that water levels in all wells will be measured before any well is purged.
- The SAP must specify that water levels for the calculation of ground water flow rate and direction will be measured during times of expected seasonal maximum and minimum water levels. The SAP should specify when the seasonal maximum and minimum water levels are expected (by month) and should provide documentation (hydrographs) to support the conclusions.
- The SAP must state that the depth to water will be measured with reference to a marked point that has been surveyed by a licensed surveyor. The water level probe must be capable of obtaining reliable measurements to +/- 0.01 foot. The SAP must specify the method for decontamination of the water level probe between use at each well.
- The SAP must state the order in which wells will be visited for water level monitoring, sampling, and maintenance and must contain the rationale for the selected order in terms of minimizing the possibility of cross-contaminating the wells and/or samples.
- The SAP must describe calibration procedures, frequency, and recordkeeping for water level probes.
- The SAP must describe the procedures, frequency, and recordkeeping for measuring the depth of the well casing.

- The SAP must describe calibration procedures, frequency, and recordkeeping for the well depth sounding instrument.
- The SAP must describe or contain copies of example field data sheets.
- The SAP must state that well-head conditions (condition of well casing, well lock, markings, standing water at surface) and any suggested maintenance will be recorded in the field notes. The SAP must describe procedures for performing necessary well maintenance in a timely manner.
- The SAP must discuss the need to monitor for wellhead gases and immiscible layers. If necessary, the SAP must describe equipment and procedures for testing wellhead gases and for testing the water surface for immiscible layers.
- The SAP must describe the procedure for calculation of well casing volumes. Where references are made to total well depth, it must be clear that the total well depth is the well depth as measured from the permanent mark on the well casing. (Total well depth is also commonly recorded as depth below ground surface.)
- The SAP must specify the maximum purge rate for each well. Whenever possible, purge rates should not exceed recharge rates. (Note: For wells completed at the water table, maximum purge rates may be a function of the water level in the well. The objective is to avoid purging a well to dryness whenever possible.)
- The SAP must state that, unless wells are purged to dryness, a minimum of three casing volumes will be removed during well purging.
- Except for wells that are purged to dryness, the SAP must state that wells will be purged until field parameters stabilize. DTSC believes that stability of field parameters is the best indication that the water being sampled is representative of the ground water in the aquifer. All measurements of field parameters are to be recorded in the field log. The final, stable value for each field parameter must be recorded and graphed through time for each well.
- For wells purged to dryness, the SAP must describe procedures for removing as much water as possible from the well, monitoring recharge, collecting samples as soon as the well has recharged sufficiently, and documenting the sampling events. For wells that are bailed, the SAP must state that a well will only be considered to have been purged until "dry" if less than 10% of the original volume of water remains in the well after purging. (Note: The objective is to minimize the amount of water that remains in the well after the well has been purged "dry", because that water is expected to mix with the recharging water so that the sample will be a combination of "stagnant" and "fresh" groundwater. It is important to optimize the percentage of "fresh" water.) The SAP must specify the frequency for measuring recharge and the criteria for initiating sampling. Sampling must proceed as soon as possible after the recharge criteria have been satisfied. Samples for volatile organics must be collected no more than two hours after purging.

- For wells not purged to dryness, sampling should be conducted as soon as possible after purging is complete. The SAP must specify, based on measured recharge rates, the approximate time period after purging that sampling will occur; or the SAP must describe the procedures for measuring and recording water levels after purging and before sampling and must specify the criteria for recharge.
- The SAP must describe the equipment and procedures for measuring field indicator parameters during purging. The SAP must specify the criteria for determining that field parameters have stabilized before sampling (e.g., pH +/- .1 pH unit, temperature +/- 1 degree Celsius, conductivity +/- 10%, turbidity +/- 10%) and must state the minimum purge volume between tests to determine if field parameters have stabilized (e.g., one half casing volume). The SAP must specifically state that turbidity will be measured with a turbidity meter. Visual estimates are not sufficient.
- The SAP must describe calibration procedures, frequency and recordkeeping for all meters used during sampling. The SAP must state that the expiration dates of standard solutions used for calibration will be recorded in the field log. Any deviations noted during the day (e.g. meter drift) must also be recorded. If meter drift requires an adjustment to any final values for field parameters, the results must be flagged in the data base.
- The SAP must describe the procedures for recording flow rates and volumes of water purged and for disposing of purged water. Field notes must include the appearance of the purged water including its color and odor.
- The SAP must describe the equipment and procedures for collecting samples. Sampling equipment must be constructed of inert materials. Dedicated equipment should be used whenever possible. If equipment must be used at more than one well the SAP must describe in detail the procedures to decontaminate the equipment and procedures for the collection of equipment blanks.
- The SAP must state that clean, powerless, surgical gloves (or another approved type of glove) shall be worn by sampling personnel and shall be changed often.
- The SAP must describe the sample containers (size and materials) for each type of analysis.
- The SAP must describe the labeling of the sample containers.
- The SAP must describe the preservation techniques necessary for each type of sample.
- The SAP must describe the procedures for determining the amount of preservative necessary to achieve the required chemical stability (e.g., amount of acid necessary to ensure pH<2 for metals analysis).

- The SAP must describe the procedures for checking and documenting the results of preservation (e.g., checking whether metals samples have been acidified to a pH of less than 2 and that temperatures are maintained at 4 degrees Celsius during shipping and storage). The SAP must state that problems will be reported to the Department. (We have had some trouble with laboratories documenting problems but not reporting them.)
- The SAP must describe the equipment and procedures for taking each type of sample. Sampling procedures must be designed to minimize disturbance of the sample that could result in changes in water chemistry.
- The SAP must present the rationale for deciding if samples for metals will be filtered or not. The decision must include a consideration of the purpose of sampling (i.e., detection monitoring, evaluation of a release or risk assessment).
- If filtering is required, the SAP must describe the equipment (including filter size) and procedures for filtering samples. The use of in-line filters is preferred. If in-line filtration is not possible, filtering should be done as quickly as possible (immediately) using positive pressure filtering equipment. The SAP must specify the discard volume (the volume of groundwater that should be used to flush the filter before sampling) for the type of filter to be used. If manufacturer's guidelines are not available, the SAP should specify that two times the capacity of the filtering device will be passed through the filter and discarded before samples are collected.
- The SAP must state that bottles that have been prepared with preservatives will not be overfilled.
- The SAP must describe the equipment and procedures for storing samples for transport.
- The SAP must describe forms and procedures for sample transport and chain of custody control. The SAP must specify the procedures to be followed to assure that strict custody of samples is maintained during sample collection, storage and transport (i.e., samples are not left unattended or samples are secured in storage areas with limited access). Sample copies of chain-of-custody and sample analysis request forms should be included.
- The SAP must describe equipment, procedures, and recordkeeping for decontamination of all sampling equipment and protective gear. Equipment shall not be used if visual signs, such as discoloration indicate that decontamination was insufficient.
- The SAP must describe the analytical method to be performed for each sample.

- The SAP must state that, following each sampling event, each member of the field team must sign a document that details any deviations from the SAP that were necessitated by field conditions (e.g, equipment failure, wells that could not be sampled, etc.) and states that, with the exceptions noted above, all field measurements and samples were collected in accordance with the procedures described in the SAP. A copy of this document must be submitted to the Department with the report of analytical results.

## **Reporting Requirements**

The WQSAP must describe in detail the content and submittal dates for periodic reports (including the submittal of quarterly determinations of groundwater flow rate and direction). The plan should specify the name and address of the person at DTSC to whom reports and notifications of significant finding must be addressed and should include the name, address and phone number of the facility representative to contact for questions regarding the report.

### **Requirements for Quarterly Monitoring Reports**

Within 60 (or 90) days following each quarterly sampling event, the facility must submit a quarterly monitoring report to the Department. The following requirements apply to each quarterly monitoring report:

- The report must be presented in a professional report format with a table of contents and numbered pages.
- Since the quarterly monitoring report must contain interpretations of hydrogeologic and geochemical data, each report must be signed by a Geologist, registered in the state of California who takes responsibility for the technical content of the report. This is required by California state law - Business and Professions Code, Geologists and Geophysicists Act. Reports must indicate the license number of the geologist.
- Each report must reference the current sampling and analysis plan (SAP) and state that, with only the exceptions listed in the report, all sampling and analysis was conducted in accordance with the current plan.
- Each report must contain a detailed description of any deviations from the current SAP, an explanation of the conditions that necessitated those deviations and a description of any corrective measures being taken to avoid future deviations from the SAP.
- When appropriate, each report must describe recent changes to the monitoring program that are allowed by the conditions of the current SAP. (For example, minor changes in sampling or analytical equipment or protocol, addition of new or replacement wells to the monitoring system, and the use of updated concentration limits.)
- Each report must contain a summary of the sampling event that identifies the type of monitoring program for each regulated unit (detection, evaluation, and/or corrective action) and describes significant findings.
- Each report must contain a narrative report summarizing and interpreting the results of the monitoring event, including, but not limited to:
  - \* Analysis of water level data and potentiometric maps, including a determination of groundwater flow rate and direction in each hydrologic zone monitored at the facility;
  - \* A report on the results of quality assurance / quality control (QA/QC) sampling and analysis. The report must state whether or not data quality objectives of

accuracy, precision and completeness have been met. If objectives were not met (e.g., target detection limits were exceeded), this section must discuss corrective measures (e.g., resampling) that are being taken by the facility and/or the laboratory.

- \* Summary of the results of statistical analyses on water chemistry data;
  - \* Interpretation of soil moisture data; and
  - \* Summary of the results of facility maintenance inspections of the monitored units and their monitoring systems.
- Each report must contain a current set of potentiometric maps for the facility.
  - Each report must include summary tables of current water level data, analytical data, and the results of the statistical analysis.
  - Each report must contain supporting documentation related to the sampling event, including, but not limited to: copies of field logs and activity sheets; depth to water data; well head data; immiscible layer data; field parameter results; purge volume data; on-scene observations; chain-of custody forms; and laboratory data sheets (analytical reports). Internal laboratory calibration and QA/QC data need not be submitted to the Department, but must be available at the facility or laboratory if needed.
  - Each report must contain an evaluation of the effectiveness of the leachate monitoring and control facilities and of the run-off/run-on control facilities.
  - For active units, each report must describe the quantity and types of waste discharged and the locations in the facility where waste has been placed since the submittal of the last such report.
  - Each report must include a section that tracks outstanding issues and/or follow-up work that needs to be performed (e.g., verification sampling of apparently significant evidence of a release, repair or replacement of wells or equipment). Any item included in this section must be addressed in every subsequent quarterly report until the outstanding issue is resolved.

Note: The documentation requirements for quarterly monitoring reports are not a substitute for the notification requirements in section 66264.98 (j)(1) and 66264.98(l). As required by those sections, anytime the facility determines that there is statistically significant evidence of a release from the regulated unit, the facility must notify the Department by certified mail within seven days of making that determination.

## Requirements for Annual Monitoring Reports

By March 1 of each year (unless the facility permit states otherwise), the facility must submit an annual report that covers the activities of the previous year. The annual report may be combined with the quarterly report for the fourth quarter provided it is submitted within 90 days of the fourth quarter sampling event and all items required for each report are included in the annual report.

The following requirements apply to each annual monitoring report:

- The report must be presented in a professional report format including a table of contents and numbered pages.
- Since the annual monitoring report must contain interpretations of hydrogeologic and geochemical data, each report must be signed by a Geologist, registered in the state of California who takes responsibility for the technical content of the report. This is required by California state law - Business and Professions Code, Geologists and Geophysicists Act. Reports must indicate the license number of the geologist.
- Each report must contain an executive summary of previous year's sampling events that identifies the type of monitoring program for each regulated unit (detection, evaluation, and/or corrective action) and describes significant findings.
- Each report must contain a narrative report summarizing and interpreting the results of the water quality monitoring program to date, including, but not limited to:
  - \* An analysis of water level data and potentiometric maps. Water level data, including hydrographs and potentiometric maps, must be evaluated to determine if the water quality monitoring system is in compliance with the requirements of Section 66264.97(b)(1) (i.e., the system satisfies the data needs for the current monitoring program: detection, evaluation or corrective action.) If the system is not adequate, the report must specify the steps that will be taken by the facility to achieve compliance with those requirements.
  - \* Interpretation of the results of statistical analysis on water chemistry data; and
  - \* Interpretation of soil moisture data.
- Unless otherwise stated in the permit or sampling and analysis plan, each report must contain comprehensive summary tables of all historical analytical data related to water quality monitoring (groundwater, surface water, and soil-pore liquid) at each regulated unit.

## Additional Suggestions

The following paragraphs address problems we have encountered in the review of many WQSAPs. Please read them and consider whether these items should be included in your document.

For detection monitoring, the WQSAP must specify the maximum amount of time that will be needed after each monitoring episode to perform statistical analysis and make a determination of whether or not there is statistically significant evidence of a release from the regulated units.

The WQSAP should describe well redevelopment and routine well maintenance. For permitted facilities, it is wise to include a section on well decommissioning and replacement so that those procedures can be implemented without a permit modification.

To evaluate the accuracy of the analytical data, the WQSAP should contain provisions for initially, and periodically characterizing the major cations and anions and testing the results by determining the charge balances. This could probably be most easily performed during the initial sampling to establish background values for CoCs and during the periodic testing of CoCs in downgradient wells.

For a detection monitoring program, the WQSAP must specifically state that DTSC will be notified by certified mail within 7 days of determining statistically significant evidence of a release for any monitoring parameter or constituent of concern at any monitoring point (Section 66264.98(j)). The WQSAP must describe the exact procedures for performing verification sampling, specify the maximum amount of time before the results of the verification sampling are reported to DTSC and state that, if the significant evidence of a release is confirmed, the facility will comply with the requirements of Section 66264.98(k) Title 22 California Code of Regulations (CCR) for responding to significant evidence of a release (e.g., immediately collect samples for Appendix IX constituents and for all constituents of concern, etc.).

The monitoring plan should clearly state that actual laboratory values between the DL and the practical quantitation limit (PQL) will be reported (and maintained in the data base) with the numerical value determined by the laboratory and a flag to indicate that these values are below the PQL. In such cases the value of the PQL must also be reported and maintained in the data base. The practice of artificially censoring data that is reported below the calculated PQL can lead to the use of less powerful statistical methods. It is important to preserve the actual uncensored values for all concentrations above the DL for possible use in future statistical analysis.

*REPORT*

**PRELIMINARY ASSESSMENT  
CAMP SAN LUIS OBISPO, CALIFORNIA**

Prepared for

**DIVISION OF THE STATE ARCHITECT  
1300 I STREET, SUITE 800  
SACRAMENTO, CALIFORNIA 95814**

Prepared by

**Geosystem Consultants, Inc.  
18218 McDermott East, Suite G  
Irvine, California 92714  
(714) 553-8757  
FAX (714) 261-8550**

Project No. 94-533E

May 1996

## TABLE OF CONTENTS

	<u>PAGE</u>
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ABBREVIATIONS	vii
1.0 INTRODUCTION	1-1
1.1 REGULATORY BACKGROUND	1-1
1.2 OVERVIEW OF THE PA PROCESS	1-3
1.3 THE PA PROCESS FOR CAMP SLO	1-4
1.3.1 Objectives	1-5
1.3.2 Technical Approach	1-6
1.4 REPORT ORGANIZATION	1-8
2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY	2-1
2.1 SITE LOCATION AND PHYSIOGRAPHIC SETTING	2-1
2.2 PHYSICAL CHARACTERISTICS	2-2
2.2.1 Cantonment Area	2-2
2.2.2 Range and Training Areas	2-4
2.2.3 Support Facilities	2-6
2.3 OPERATIONAL HISTORY	2-7
2.3.1 Site History	2-7
2.3.2 Site Operation	2-8
2.3.3 Waste Management Practices	2-10
2.4 PERMITTING STATUS	2-11
2.5 INSPECTION AND NOTICES OF VIOLATION	2-13
3.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN	3-1
3.1 SOLID WASTE DISPOSAL SITES	3-1
3.1.1 Sutter Avenue Landfill	3-2
3.1.2 Story Park Landfill	3-5
3.1.3 Kansas Avenue Landfill	3-8
3.1.4 Pennington Creek Landfill	3-10

TABLE OF CONTENTS  
(Continued)

	<u>PAGE</u>
3.1.5 Other Potential Solid Waste Handling Areas	3-12
3.2 UNDERGROUND STORAGE TANKS	3-13
3.2.1 Active Underground Storage Tanks	3-13
3.2.2 Abandoned Underground Storage Tanks	3-14
3.3 ABOVEGROUND TANKS AND HUTMENT HEATING SYSTEMS	3-16
3.3.1 Aboveground Fuel Storage Tanks	3-16
3.3.2 Hutments Heating Oil Distribution Systems	3-16
3.4 ORGANIZATIONAL MAINTENANCE SHOP #19	3-19
3.5 MOTOR POOLS AND OTHER VEHICLE MAINTENANCE FACILITIES	3-20
3.5.1 Motor Pools	3-20
3.5.2 Vehicle Wash Racks	3-21
3.5.3 Vehicle Grease Racks	3-22
3.6 UNITED STATES PROPERTY AND FISCAL OFFICE	3-22
3.7 ENGINEERING YARD	3-23
3.8 FORMER LAUNDRY FACILITY (BUILDING 1200)	3-24
3.9 FORMER AMMUNITION STORAGE AREA	3-25
3.10 POLYCHLORINATED BIPHENYLS (PCBs)	3-26
3.11 ASBESTOS	3-27
3.12 RANGE AND IMPACT AREAS	3-28
3.13 INCINERATOR	3-30
3.14 WASTEWATER TREATMENT FACILITY	3-30
3.15 LEAD-BASED PAINT	3-31
3.16 INACTIVE MINES	3-31
4.0 PATHWAY AND ENVIRONMENTAL HAZARD ASSESSMENT	4-1
4.1 GROUND WATER	4-1
4.1.1 Geologic Setting	4-1

TABLE OF CONTENTS  
(Continued)

	<u>PAGE</u>
4.1.2 Hydrogeologic Conditions	4-2
4.1.3 Ground Water Use	4-2
4.1.4 Potential Impact of Hazardous Substances on Ground Water	4-5
4.1.5 Migration Pathway Evaluation	4-5
4.2 SURFACE WATER	4-5
4.2.1 Hydrologic Setting	4-6
4.2.2 Surface Water Bodies	4-6
4.2.3 Surface Water Use	4-7
4.2.4 Potentially Sensitive Receptors	4-7
4.2.5 Potential Impact of Hazardous Substances on Surface Water	4-8
4.2.6 Migration Pathway Evaluation	4-8
4.3 SOIL	4-9
4.3.1 Population Distribution	4-10
4.3.2 Potentially Sensitive Receptors	4-11
4.3.3 Potential Impact of Hazardous Substances on Soil	4-11
4.3.4 Migration Pathway Evaluation	4-11
4.4 AIR	4-12
4.4.1 Potential Air Contaminants	4-12
4.4.2 Migration Pathway Evaluation	4-13
5.0 FINDINGS AND RECOMMENDATIONS	5-1
5.1 CONFIRMED RELEASE SITES	5-1
5.1.1 Sutter Avenue Landfill	5-1
5.1.2 Kansas Avenue Landfill	5-2
5.1.3 Leaking UST Sites	5-4
5.1.4 Hutment Heating Systems	5-5
5.1.5 Unexploded Ordnance	5-6

TABLE OF CONTENTS  
(Continued)

	<u>PAGE</u>
5.2 POTENTIAL RELEASE SITES	5-7
5.2.1 Primary Potential Release Sites	5-7
5.2.2 Secondary Potential Release Sites	5-8
6.0 LIMITATIONS	6-1
REFERENCES	R-1
TABLES	
FIGURES	
APPENDIX A: NATEC ENVIRONMENTAL DISCLOSURE REPORT	
APPENDIX B: SUPPLEMENTAL DATA, LANDFILLS	
APPENDIX C: SUPPLEMENTAL DATA, USTs AND HUTMENT HEATING SYSTEMS	
APPENDIX D: ORDNANCE AND EXPLOSIVE WASTE RISK ASSESSMENT	
APPENDIX E: SENSITIVE SPECIES DATA	
APPENDIX F: PHOTODOCUMENTATION LOG	

## LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>
1	Partial Summary of Land Acquisitions
2	Partial Summary of Land Disposals
3	Active Fuel Facilities
4	Summary of Abandoned Underground Storage Tanks
5	Aboveground Storage Tank Removal (Hutment Heating Systems)
6	Summary of Vehicle Maintenance Facilities
7	Area Well Inventory
8	Observed Sensitive Species

## LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>
1	Location Map
2	Site Plan
3	Cantonment Area
4	Boundary Map
5	Site Features
6	Sutter Avenue Landfill
7	Story Park Landfill
8	Kansas Avenue Landfill
9	Pennington Creek Landfill
10	Mine Location Map

## LIST OF ABBREVIATIONS

ACMs	asbestos-containing materials
APCD	San Luis Obispo County Air Pollution Control District
CA ARNG	California Army National Guard
Caltrans	California Department of Transportation
Camp SLO	Camp San Luis Obispo
CCC	California Conservation Corps
CDF	California Division of Forestry
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CMA	California Military Academy
CSTI	California Specialized Training Institute
DERP	Defense Environmental Restoration Program
DHS	California Department of Health Services
DSA	State of California, Department of General Services, Division of the State Architect (formerly OSA)
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
FS	feasibility study
HRS	Hazard Ranking System
META	Motorized Equipment Training Academy
MSL	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFRAP	no further remedial action planned
NOV	Notice of Violation
NPL	National Priorities List

LIST OF ABBREVIATIONS  
(Continued)

OEW	ordnance and explosive waste
OMS-19	Organization Maintenance Shop #19
OSA	State of California, Department of General Services, Office of the State Architect (now DSA)
PA	Preliminary Assessment
PCBs	polychlorinated biphenyls
RAC	risk assessment code
RCRA	Resource Conservation and Recovery Act
RD/RA	remedial design/remedial action
RI	remedial investigation
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board, Central Coast Region
SARA	Superfund Amendments and Reauthorization Act
SI	site inspection
SLOCHA	San Luis Obispo County Health Agency
SPTC	Southern Pacific Transportation Company
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USAEHA	U.S. Army Environmental Hygiene Agency
USAR	U.S. Army Reserve
USPFO	United States Property and Fiscal Office
UST	underground storage tank
UXO	unexploded ordnance
VOCs	volatile organic compounds
WDS	Waste Discharge System

## 1.0 INTRODUCTION

This report presents the findings of a preliminary assessment (PA) for Camp San Luis Obispo (Camp SLO) in San Luis Obispo County, California. Camp SLO is a California Army National Guard (CA ARNG) facility that occupies about 4,100 acres of land to the northwest of the city of San Luis Obispo. At certain times in the past, notably during World War II and the Korean conflict, Camp SLO was operated by the U.S. Army. At the end of World War II, Camp SLO occupied almost 15,000 acres of land. The PA is the first step in evaluating whether hazardous materials that may have been released at a site pose a threat to human health and/or the environment. The PA for Camp SLO was conducted by Geosystem Consultants, Inc. (Geosystem) on behalf of the State Military Department through a contract with the State of California, Department of General Services, Division of the State Architect (DSA). Specifically, the PA was conducted pursuant to DSA Agreement No. 6952, Work Order No. MAR 409. The remainder of this section presents a summary of the regulatory background; the PA process in general; and the application of the PA process to Camp SLO, including the objectives and approach adopted by Geosystem.

### 1.1 REGULATORY BACKGROUND

In 1980, the U.S. Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as the Superfund program, to address threats to human health and the environment posed by releases of hazardous substances. The CERCLA legislation required the U.S. Environmental Protection Agency (EPA) to establish criteria for determining priorities among the many sites at which releases of hazardous substances had occurred or were threatened. EPA subsequently developed the Hazard Ranking System (HRS) to evaluate site priorities. Those sites that posed a significant enough hazard were included on the National Priorities List (NPL), which prioritized them for remedial action under the Superfund program. The Superfund Amendments and Reauthorization Act of 1986 (SARA) required EPA to modify the HRS to better "assess the relative degree of risk to human health and the environment posed by sites" (EPA, September 1991). SARA also required that the modified HRS take into

account recreational use of surface waters, contamination of the human food chain and drinking water supplies, and potential contamination of ambient air.

In general terms, the CERCLA process begins with a site being "discovered" or identified as a possible hazardous waste site. Discovered sites are entered into the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), which is EPA's computerized inventory of potential hazardous sites. The potential for the release of hazardous substances from a CERCLIS site is then evaluated during a two-step investigation, the first step of which is a PA. The EPA has described the PA as a "limited-scope investigation" based on a "reconnaissance" of the site and surrounding area and utilizing "readily available information" (EPA, September 1991). Sampling and chemical analysis is generally not conducted during a PA. EPA goes on to say that the PA is "designed to distinguish between sites that pose little or no threat to human health and the environment and sites that require further investigation."

If further investigation is required, a site inspection (SI), the second step of the two-step investigative process, is initiated. The SI typically involves the collection and chemical analysis of samples of waste and environmental media, such as soil, ground water, surface water, and air. When the PA and the SI are complete, the HRS is applied to derive a site "score," which determines either that further investigation is required or that the site should receive a "no further remedial action planned" (NFRAP) recommendation. Note that a NFRAP recommendation means that no further action is required under the Superfund program; however, states and/or other regulatory agencies may take action under their own programs.

If the site's HRS score is sufficiently high, it may be eligible for proposal to the NPL. NPL or proposed NPL sites must progress through the remainder of the Superfund process. This includes remedial investigation (RI); a feasibility study (FS); a Record of Decision (ROD), which documents the selected remedy; and the remedial design/remedial action (RD/RA) phase.

## 1.2 OVERVIEW OF THE PA PROCESS

Regulations pertaining to PAs are specified in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Suggested procedures for conducting PAs are described in EPA's September 1991 publication entitled "Guidance for Performing Preliminary Assessments under CERCLA." In addition to a site reconnaissance and the compilation and evaluation of readily available information about the site and surrounding area, the PA focuses on collecting information about "targets," such as populations and resources that might be threatened by a release from the site.

After gathering the necessary information, the PA site evaluation phase addresses four hazardous substance exposure routes or pathways. These include three migration pathways (ground water, surface water, and air) and one exposure pathway (exposure to soil). Each pathway represents a means by which hazardous substances may pose a threat to human health and/or the environment.

- o The ground water pathway accounts for the migration of hazardous substances to and within aquifers and the associated threat to drinking water supplies.
- o The surface water pathway accounts for the migration of hazardous substances to surface water bodies and the associated threat to drinking water supplies, the human food chain, sensitive environments, and other potential receptors.
- o The air pathway accounts for the migration of hazardous gases, vapors, or particulate matter in air and the associated threat to the human population and other sensitive receptors.
- o The soil exposure route accounts for the possible direct exposure of people to contaminated materials via ingestion or dermal contact.

For each pathway, the PA must consider the likelihood of a release, the potential targets, and the characteristics of the wastes released.

### 1.3 THE PA PROCESS FOR CAMP SLO

Camp SLO was identified as a potential hazardous waste site by the California Department of Health Services (DHS), which now operates under the California EPA as the Department of Toxic Substances Control (DTSC), during its Abandoned Site Project investigation in 1983. Specifically, DHS determined that abandoned hazardous waste disposal sites probably existed at Camp SLO. However, DHS was unable to obtain records pertaining to waste types, quantities, or the locations where the wastes may have been disposed. Camp SLO was subsequently assigned CERCLIS No. CAD 980882773 (Ecology and Environment, May 10, 1991).

Applying the PA process to Camp SLO has proven to be, perhaps, more challenging than for a typical CERCLIS site. Among the more challenging aspects were:

- o The sheer size of Camp SLO, especially at the end of World War II, when it occupied almost 15,000 acres, and the diversity of the activities conducted at Camp SLO at different times and at different locations. In many respects, Camp SLO is more like a small, self-contained city than the average CERCLIS site.
- o Camp SLO's long and complicated history, which dates back to 1928 and which involves the piecemeal expansion of the facility through the end of World War II and then the piecemeal contraction of the facility up to the present day as excess land was disposed of.
- o The very large number of buildings (over 1,000) and support facilities that were constructed, operated, and then demolished and replaced with other buildings and facilities. Many hazardous and potentially hazardous substances were probably used, stored, or otherwise handled in these buildings and support facilities.
- o The different ownership of different areas of the facility by the state and/or the U.S. government at different times and the different uses to which different parts of the facility were put to by the owners and their various tenants.
- o The virtual absence of any written records pertaining to the storage, use, and disposal of potentially hazardous materials within the current and, especially, the historical boundaries of Camp SLO.

- o The fact that hazardous materials have been used, stored, and possibly released by several of the government agencies that now own or control land that was formerly part of Camp SLO. Any contamination resulting from these more recent land uses may be "superimposed" on, and indistinguishable from, contamination possibly attributable to prior military use of the land.

Some records pertaining to the recent storage, use, and disposal of potentially hazardous materials at Camp SLO are available. Also, existing facilities where such materials are handled were physically reconnoitered during the PA. These records and reconnaissances were the basis for evaluating potential threats from current activities at Camp SLO. However, in evaluating the potential threats associated with activities in the past, Geosystem relied heavily on historical aerial photographs, historical maps and plans of Camp SLO, and interviews with knowledgeable individuals. The historical maps and plans were particularly useful because they identified the function of the many buildings and facilities that have been demolished/replaced, adapted for different uses, or leased to other users. Knowing the former use of a building or area enabled Geosystem to "extrapolate" potential hazards from buildings or areas that currently serve the same purpose. By way of example, Camp SLO used to feature five motor pools, of which only one is present today. However, operations were reportedly very similar, if not identical, at all of the motor pools. Therefore, the potential threats associated with the existing motor pool, such as underground storage tanks, waste oil disposal, etc., probably also pertain to the former motor pools.

### 1.3.1 Objectives

The overall objective of this PA is to ensure that Camp SLO is in compliance with the PA requirements of CERCLA. The specific objectives of the assessment are as follows:

- o Identify and qualitatively characterize sites where the potential exists for the release of CERCLA hazardous substances to the environment.
- o Identify and qualitatively characterize sites where the potential exists for the release of non-CERCLA hazardous substances to the environment.

- o Identify and characterize exposure and migration pathways and potential receptors associated with possible release sites.
- o Determine the need, if any, for further investigation and/or removal/remedial responses for CERCLA and/or non-CERCLA hazardous substances and make recommendations as appropriate.

### 1.3.2 Technical Approach

On November 10, 1994, Geosystem submitted a proposal to DSA for the subject PA. The scope of the proposed PA was based primarily on EPA's September 1991 "Guidance Document for Performing Preliminary Assessments Under CERCLA" and included the following investigative activities:

- o Visual reconnaissance of facilities within the current Camp SLO boundary at which potentially hazardous materials may have been used, stored, disposed, or otherwise handled.
- o Interviews with current and former employees of Camp SLO and tenants at Camp SLO.
- o Review of available records maintained by Camp SLO, CA ARNG, and DSA.
- o Review of records maintained by federal, state, and local regulatory agencies.

On February 2, 1995, DTSC issued a letter requesting that the scope of the PA be expanded to address all areas within the former boundaries of Camp SLO. Accordingly, this PA addresses all areas known to have been part of Camp SLO in the past, in addition to the area within the current boundary.

The PA was initiated at a "kickoff" meeting held at Camp SLO on February 24, 1995. The meeting was attended by Geosystem personnel and current CA ARNG and State Military Department personnel familiar with operations at Camp SLO. The field reconnaissance work associated with the PA was conducted periodically from February 24, 1995 to late June 1995. Many interviews with knowledgeable individuals were conducted over the same time

period. In many instances, field reconnaissance work was combined with field work related to the ongoing investigations by Geosystem at solid waste disposal sites and underground storage tank (UST) sites at Camp SLO. The findings of these investigations, which are also being conducted through DSA on behalf of the State Military Department, have been extensively utilized in this PA.

In addition to the reconnaissance work, record reviews, and interviews conducted at Camp SLO, records and/or staff of the following agencies and organizations were reviewed and/or interviewed:

- o State Military Department in Sacramento.
- o California Regional Water Quality Control Board, Central Coast Region (RWQCB) in San Luis Obispo.
- o The following departments of the County of San Luis Obispo (the County):
  - Health Care Agency (SLOCHA)
  - Assessors Office
  - Engineering (Water Quality)
  - Board of Education
- o Cuesta College
- o California State Polytechnic University at San Luis Obispo (Cal Poly)
- o California Mens Colony (CMC)
- o U.S. Forest Service
- o State of California, Department of Fish and Game (DFG).

The information obtained from these sources is referenced as appropriate throughout this document.

#### 1.4 REPORT ORGANIZATION

The remainder of this report is organized into five sections. Section 2.0 consists of a description of Camp SLO and a summary of its operational history. Areas of potential environmental concern are described in Section 3.0. Section 4.0 presents an assessment of potential environmental hazards in different environmental media. Conclusions and recommendations are presented in Section 5.0. Section 6.0 outlines some of the limitations of PA-type evaluations. The text of the report is followed and supported by tables, figures, and appendices. The appendices generally include reference or backup data considered too detailed for the body of the report but which may be of use to readers evaluating specific features of Camp SLO.

## 2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY

This section describes Camp SLO in terms of its location and physiographic setting, its physical characteristics, operational history, and status with regard to permits and violations.

### 2.1 SITE LOCATION AND PHYSIOGRAPHIC SETTING

Camp SLO straddles State Highway 1, about 5 miles northwest of the city of San Luis Obispo, California and about 7 miles inland from Morro Bay and the Pacific Ocean. The location of Camp SLO is shown in Figure 1. The facility occupies approximately 4,100 acres and extends to the northeast from a line between Cerro Romualdo and Chumash Peak, across the Chorro Creek Valley, and up to Cuesta Ridge in the foothills of the Santa Lucia Range. The ground surface elevation at Camp SLO ranges from about 180 feet above mean sea level (MSL) along the western boundary at Chorro Creek to over 2,440 feet MSL in the northeastern corner. Almost all of Camp SLO lies within the Chorro Creek watershed. The most developed and intensively utilized portion of Camp SLO, referred to as the cantonment (troop housing) area, is located along Highway 1 within the relatively narrow Chorro Creek Valley. The majority of the cantonment area and most of the buildings are located on the south side of Highway 1. The portion of the cantonment area north of Highway 1 is connected by an underpass. In terms of area, the bulk of Camp SLO lies to the north of Highway 1, in the foothills of the Santa Lucia Range. This portion of Camp SLO is essentially undeveloped other than for a few unpaved roads. Most of the area is within one or more of the firing fans associated with the various firing ranges at Camp SLO.

In the past, Camp SLO extended further north and west and occupied an area of almost 15,000 acres. To the north, Camp SLO formerly extended over Cuesta Ridge and into Kathleen Valley. To the west, it extended to San Luisito Creek. Much of the area formerly part of Camp SLO was also essentially undeveloped range land. A larger scale map of Camp SLO, which shows the current and former boundaries and some of the physiographic features mentioned above, is presented in Figure 2.

## 2.2 PHYSICAL CHARACTERISTICS

In very broad terms, Camp SLO consists of the heavily developed cantonment area, a number of training areas, a number of firing ranges and the associated firing fans, and related support facilities. In the past, the firing ranges/fans were substantially larger than at present due to the use of heavier weapons. In general terms, the types of activities supported by Camp SLO in the past were more or less the same as the present day but on a larger scale. Since the end of World War II, when it occupied nearly 15,000 acres, Camp SLO has contracted as excess land was disposed of. It is convenient to refer to the land formerly part of Camp SLO in terms of its current owners and/or current uses, as follows:

- o Cal Poly
- o Cuesta College
- o California Mens Colony (CMC)
- o San Luis Obispo County Operations Center
- o San Luis Obispo County Board of Education
- o El Chorro Regional Park
- o U.S. Forest Service
- o State of California, Department of Fish and Game (DFG)
- o Southern Pacific Transportation Company (SPTC)
- o Madonna Construction Company
- o Ernest and Marguerite Vollmer.

The locations of the areas listed above in relation to the current boundary of Camp SLO are shown in Figure 2. Brief descriptions of Camp SLO and the areas formerly part of Camp SLO are presented below.

### 2.2.1 Cantonment Area

The cantonment area essentially occupies the relatively flat floor of the Chorro Creek valley. The land now occupied by Cuesta College, the County Operations Center, and the CMC used to be part of the cantonment area.

### *Existing Cantonment Area*

The current cantonment area covers about 800 acres and features several hundred buildings. The cantonment area can provide housing for more than 2,000 troops under normal conditions and for more than 3,500 under emergency conditions. Housing is provided by a combination of 2-man hutments, apartments, houses, and a newly constructed barracks complex. Other buildings include 49 administrative, office, and supply buildings; 20 warehouses; 11 dining facilities; and 11 assembly buildings. An on-site troop medical clinic can treat minor injuries and prepare patients for transport to local hospitals. Other facilities located within the cantonment area include motor pool, maintenance, and engineering facilities; a heliport; and O'Sullivan Airfield. O'Sullivan Airfield is no longer used for fixed-wing aircraft (CA ARNG, November 23, 1993). A plan of the current cantonment area is presented in Figure 3.

### *Cuesta College*

Cuesta College is a community college operated by the San Luis Obispo Community College District. The main Cuesta College campus covers an area of approximately 159.8 acres and is located immediately west of the existing cantonment area and south of Highway 1 (Figure 2). This area was formerly the northwestern corner of the cantonment area and included Motor Pools #10 and #11, as well as numerous troop hutments, mess halls, and other buildings. Between the late 1960s and the mid-1970s, most of the original military structures were demolished and the existing campus buildings were constructed. On March 12, 1973, a 75-acre parcel of Camp SLO land located northwest of the main campus was transferred to Cuesta College. This parcel, located north of Highway 1 (Figure 2) features a small field laboratory but is otherwise vacant.

### *County Operations Center*

The County Operations Center occupies a portion of the south-central area of the former cantonment area (Figure 2). County facilities in this area include a sheriff station, jail, juvenile center, engineering department, agriculture department, animal shelter, and road maintenance department. This area formerly included the Camp SLO laundry, blacksmith,

prisoner camp, and the Kansas Avenue landfill. The original Camp SLO laundry and associated boiler house (Buildings 1200 and 1201) still remain and are used by the County for shop and warehouse space. The other original structures have been demolished and replaced by new facilities.

### *California Mens Colony*

The CMC is a state prison facility located at the east end of Camp SLO, north of Highway 1. CMC straddles Chorro Creek, which divides the prison into the "east facility" and "west facility." The east facility was constructed during the late 1950s. The area was formerly part of Camp SLO and featured troop hutments, mess halls, a fuel facility, and other buildings. The original Camp SLO buildings are visible in aerial photographs taken in 1949 and 1956. An aerial photograph taken in 1959 shows that these buildings had been demolished and the existing prison was under construction. The CMC west facility occupies the former Camp SLO hospital. Most of the original Camp SLO hospital buildings are still present and are used by CMC.

### 2.2.2 Range and Training Areas

Land outside of the cantonment area consists primarily of military training areas and firing ranges. The terrain is hilly with the northernmost portions of the ranges lying on the southern face of Cuesta Ridge. These areas are only accessible by four-wheel-drive vehicles. The existing firing ranges are discussed in more detail in Section 3.12. Much of the former firing range and training areas at Camp SLO have been transferred to federal or state agencies or returned to private landowners. These areas are discussed briefly below.

#### *U.S. Forest Service*

Much of the northeasternmost portion of Camp SLO was "borrowed" from the U.S. Forest Service by the U.S. Army when Camp SLO was expanded during the 1940s. This land was subsequently "returned" to the U.S. Forest Service in 1966. Figure 2 shows the former Camp SLO land owned by the U.S. Forest Service. Most of the U.S. Forest Service land was within the impact areas associated with the firing ranges at Camp SLO (Section 3.12).

The terrain is very rugged and reaches a maximum elevation of 2,763 feet MSL at Tassajara Peak. The land is part of Los Padres National Forest and is largely undeveloped except for a number of communications transmitting stations located on the peaks. It is noted that the extreme northern portion of the U.S. Forest Service land formerly a part of Camp SLO lies within the Tassajara Creek watershed and the extreme eastern portion lies within the Stenner Creek watershed. The remainder lies within the Chorro Creek watershed.

#### *El Chorro Regional Park*

El Chorro Regional Park lies to the north of the cantonment area, across Highway 1 (Figure 2). The park is operated by the San Luis Obispo County Parks and Recreation Administration. This former Camp SLO land was used for military training and firing ranges. The northernmost portion of the park featured firing ranges and the southern portion along Highway 1 featured two hand grenade courts. The terrain at El Chorro Regional Park ranges from relatively gentle sloping hills along Highway 1 to much steeper slopes in the north and northeastern portion. Most of the park is drained by Dairy Creek, which flows to the south, through the center of the park, and discharges into Chorro Creek at Camp SLO.

#### *County Board of Education*

The County Board of Education operates administrative and educational facilities on a parcel of property immediately west of El Chorro Regional Park, along Pennington Creek (Figure 2). A number of hutments and associated buildings were constructed between Pennington Creek Road and the creek itself sometime after 1956. Some of these structures still exist and are currently used by the County. The southern portion of this property consists of relatively gently sloping land along Pennington Creek. A relatively steep hill in the northern portion of the site reaches a maximum height of 664 feet MSL.

#### *Cal Poly*

Cal Poly owns a large area of former Camp SLO land northwest of the existing facility (Figure 2). This land is reportedly used primarily for cattle grazing. Most of the Cal Poly

land lies within the firing fans of former U.S. Army firing ranges. However, the Cal Poly land also includes the Pennington Creek landfill, a small waste disposal facility associated with Camp SLO. Most of the Cal Poly property is drained by Pennington Creek and its tributaries, which report to Chorro Creek. The southern portion of the Cal Poly land features gentle hills but to the north, the slopes steepen significantly toward Cuesta Ridge.

#### *California Department of Fish and Game*

The DFG owns a parcel of former Camp SLO land at the extreme western end of the former base boundary (Figure 2). This area formerly featured several firing ranges, including hand grenade, rifle grenade, and 3.5-inch rocket ranges. DFG now operates a public shooting range on this property. This property features gently sloping low hills and is drained by Chorro Creek.

#### *Privately Owned Land*

The remaining former Camp SLO property is owned by private individuals or companies; specifically, the Vollmers, SPTC, and Madonna Construction Company. The locations of privately owned parcels are shown in Figure 2. Most of the land is reportedly used for cattle grazing or agriculture. So far as Geosystem has been able to ascertain, none of these three parcels was developed while part of Camp SLO. The Vollmer property was within at least two firing fans; however, the SPTC and Madonna Construction Company parcels were not within any known firing fans.

#### 2.2.3 Support Facilities

Support facilities associated with Camp SLO include a reservoir and water filtration plant, water supply wells, a sewage treatment plant, and solid waste disposal facilities. The reservoir and water filtration plant are still within the boundary of Camp SLO, although they are now operated by CMC. One of the three water supply wells is located at the County Government Center (Figure 3). The other two are located in the current cantonment area. These water supply wells are discussed in more detail in Section 4.1.3. The sewage treatment plant is located near the western boundary of Camp SLO, near Chorro Creek.

The sewage treatment plant is described in more detail in Section 3.14. There are at least four solid waste disposal facilities within the former boundaries of Camp SLO. None are currently active. Two are located within the current Camp SLO boundary, one is located at the County Government Center, and one is located on Cal Poly property. These solid waste disposal facilities are discussed in Section 3.1.

## 2.3 OPERATIONAL HISTORY

This section presents an overview of operations at Camp SLO in terms of site history, site operation, and waste management practices.

### 2.3.1 Site History

Camp SLO was established in 1928 on a 2,000-acre tract of ranch land located west of the city of San Luis Obispo. The land was secured by the State of California on a lease-purchase basis. Then known as Fort Merriam, after a state Governor, Camp SLO was the first permanent base for the California National Guard. Between 1928 and 1940, the size of the base nearly tripled to a total area of 5,880 acres. Geosystem has not been able to reconstruct a definitive summary of the parcels acquired, their areas, their former owners, and former land uses. Several of the references reviewed in preparation of this report include some of this information but in many cases, the information is not consistent between references. Considering the information available, however, it seems likely that the land acquired by Camp SLO was agricultural or range land.

During the military buildup prior to the United States entering World War II, the federal government exercised its preemptive rights and assumed control of Camp SLO. During the war, the U.S. Army continued Camp SLO's development as an active U.S. Army post. The base was expanded and developed extensively between 1943 and 1946, during which time the U.S. Army used Camp SLO as an infantry division training center. A summary of land acquisitions by the U.S. Army during this time is presented in Table 1. At its peak, Camp SLO occupied 14,959 acres and could accommodate more than 20,000 troops. The base included artillery, grenade, and small arms firing ranges. Improvements at the base included

troop and officer housing, repair and maintenance facilities, motor pools, and firing range structures (U.S. Army Corps of Engineers, April 3, 1995). Figure 2 shows the approximate boundary of Camp SLO in 1952, when the facility is believed to have been at its maximum size of 14,959 acres. The current boundary is also shown for comparison purposes.

In 1946, following World War II, the U.S. Army deactivated the site and returned control of Camp SLO to the State. From that point on, Camp SLO began to shrink as parcels of excess land were sold or otherwise disposed of. A partial summary of land disposals since 1946 is presented in Table 2. The U.S. Army reactivated the base in 1951 and established the Southwest Signal Center at Camp SLO. Soldiers were trained at this facility during the Korean War from 1951 through 1953. The base was again deactivated in 1953. However, a portion of Camp SLO was placed in stand-by readiness as a military mobilization site by the U.S. Army. On July 1, 1965, control of all State-owned property and improvements was returned to the State. The remainder was ceded to the State in lieu of restoration. CA ARNG has controlled Camp SLO since 1965, since which time a number of land parcels within the former boundary of Camp SLO have been sold or transferred to various state and local agencies.

Camp SLO currently has a total area of approximately 4,100 acres (U.S. Army Corps of Engineers, April 3, 1995). Several federal, state, and local agencies currently lease property and structures within the present Camp SLO boundary. Figure 2 shows the current ownership of former Camp SLO land disposed by the U.S. Army and/or the State of California. Figure 4 shows the various assessors parcels that comprise Camp SLO. Section 2.3.2 presents a summary of current site operations at Camp SLO. A discussion of current tenants on Camp SLO property and the nature of their operations is also presented in Section 2.3.2.

### 2.3.2 Site Operation

In addition to serving as the headquarters for the CA ARNG, Camp SLO provides operational, training, and logistical support to a wide variety of military, law enforcement,

and civilian agencies at the federal, state, and local levels. Camp SLO's primary mission is to provide a major training area for annual and inactive duty training for CA ARNG and units of the U.S. Army Reserve (USAR). Units of CA ARNG and USAR occupy facilities for two- to three- week periods of training duty, primarily during the summer months (CA ARNG, November 23, 1993). Military units that regularly train at Camp SLO include CA ARNG, California Air National Guard, USAR, the U.S. Coast Guard Reserve, and units of the California State Military Reserve (CA ARNG, undated).

A number of agencies lease facilities at Camp SLO for various purposes. These lessees are:

- o California Military Academy (CMA) - provides classroom and field instruction and military training. CMA utilizes several buildings within Camp SLO primarily for classroom instruction.
- o California Specialized Training Institute (CSTI) - a division of the State of California, Office of Emergency Services. CSTI provides training to law enforcement and emergency response agencies in such areas as hazardous materials response and riot control.
- o California Conservation Corps (CCC) - operates a residential young adult conservation and training program at Camp SLO. CCC occupies a number of buildings in the southwestern part of the cantonment area (Figure 3).
- o California Division of Forestry (CDF) - Inmate fire crews are based out of the CDF "Camp Cuesta" facility at Camp SLO (Figure 3). Fire fighting vehicles and equipment are stored and maintained at the facility. Labor is provided by inmates from CMC.
- o Operating Engineers Trust (OET) - provides maintenance for state and federal-owned facilities at Camp SLO. The OET occupies the engineering yard at Camp SLO (Figure 3). Some labor is provided by inmates from CMC.

Until April 1995, the California Department of Transportation (Caltrans) leased a parcel of land near the Sutter Avenue landfill. The Caltrans facility was used for training and vehicle maintenance. In addition, motor vehicles were washed and fueled at the former Caltrans facility.

### 2.3.3 Waste Management Practices

Currently, nonhazardous solid wastes generated at Camp SLO are reportedly collected and hauled off site for disposal at the Cold Canyon (Class III) landfill by a private contractor. In the past, nonhazardous solid waste disposal practices at Camp SLO included on-site trash incineration and landfilling. Camp SLO landfills are discussed in Section 3.1 and the trash incinerator is discussed in Section 3.13.

Hazardous wastes generated at Camp SLO are currently collected at two storage facilities: Organization Maintenance Shop #19 (OMS-19) and the United States Property and Fiscal Office (USPFO). The locations of these facilities are shown in Figure 3. The wastes collected at these facilities are periodically hauled off site for recycling and/or disposal by a private contractor under a statewide contract. The USPFO reportedly only disposes of hazardous wastes generated at or returned to the USPFO facility. Hazardous wastes generated elsewhere at Camp SLO are taken to OMS-19. OMS-19 and USPFO are discussed in greater detail in Sections 3.4 and 3.6, respectively. Little information is available regarding hazardous waste handling and disposal practices during the U.S. Army operation of Camp SLO.

A number of tenants at Camp SLO generate their own hazardous waste streams. Each of these tenants reportedly is responsible for its own hazardous waste disposal. Wastes from non-military tenants at Camp SLO are not accepted at OMS-19 or USPFO. A brief description of hazardous materials and waste handled by each tenant is presented below.

- o Caltrans (EPA #CA000011779) - Vehicle washing and maintenance was performed at the Motorized Equipment Training Academy (META) yard until April 1995. Materials stored on site have included motor oil, greases, hydraulic fluid, oxygen, and acetylene. Unleaded gasoline and diesel fuel were stored in aboveground fuel tanks (Caltrans, January 1, 1993). A gravel ramp area was reportedly used for vehicle washing and engine cleaning (CA ARNG, June 14, 1995). In response to a request from CA ARNG (June 14, 1995), Geosystem collected soil samples from a boring drilled through the gravel ramp. Selected soil samples were analyzed for total recoverable petroleum hydrocarbons and for volatile

the five soil samples analyzed (Geosystem, March 28, 1996a). Considering its size, however, the possibility of releases to soil and/or ground water elsewhere at the former Caltrans facility cannot be ruled out.

- o CCC Construction Unit (EPA #CA000050158) - Materials stored in the CCC equipment yard include motor oil, antifreeze, paint, solvents/thinners, lacquer, drain opener, propane, oxygen, and acetylene. Diesel fuel is stored in an aboveground tank. Waste oil and other automotive wastes are generated at the facility (CCC, June 1991).
- o CDF Cuesta Camp (EPA #CA000039698) - The inmate fire crew facility located at Building 962 stores motor oil, antifreeze, solvents, propane, oxygen, and acetylene. Diesel fuel and gasoline are stored in two USTs. Waste oil, antifreeze, and other automotive wastes are generated at the facility (CDF, June 18, 1992).
- o CSTI - Liquid nitrogen and compressed air used for field training exercises are stored at the field training site, located near the intersection of Tehama and Mono Avenues. Nitrogen is used to simulate chemical vapor releases for emergency response personnel training. Nonexplosive ammunition is also stored for weapons training purposes. Approximately 55 gallons per year of waste ink are generated from printing operations (CSTI, May 9, 1994).

#### 2.4 PERMITTING STATUS

Geosystem requested an environmental disclosure report from Natec Environmental Reporting Services, Ltd. (Natec) of Garden Grove, California. Natec's report (April 6, 1995) is included as Appendix A to this report. The Natec report presents the results of a search of various state and federal environmental databases. The search area included all property within approximately one mile of the former Camp SLO boundary (Figure 2). The Natec report identified four hazardous waste generator identification numbers for Camp SLO. Generator identification numbers are issued by the EPA under the authority of the Resource Conservation and Recovery Act (RCRA). The records identify Camp SLO as a waste generator but do not indicate that the base is permitted as a waste transporter nor as a treatment, storage, or disposal facility. The RCRA identification numbers for Camp SLO are summarized below:

- o CA7211890481 - Issued to CA ARNG Building 1328 (OMS-19). Does not indicate quantity of waste generated. No RCRA violations reported.
- o CA8572890095 - Issued to CA ARNG-Camp SLO. Identifies Camp SLO as a small quantity generator. No RCRA violations reported.
- o CA981369143 - Issued to Camp SLO. Identifies Camp SLO as a small quantity generator. No RCRA violations reported.
- o CA981454044 - Issued to Camp SLO Building 1201. Indicates large quantity generator. No RCRA violations reported. Note that Building 1201 is currently owned and operated by the San Luis Obispo County Engineering Department.

The State Water Resources Control Board (SWRCB) maintains a list of permitted USTs containing hazardous substances. The UST list identified seven permitted USTs at Camp SLO:

- o Three USTs permitted by Camp SLO
- o Two USTs permitted by State Military Department OMS-19
- o Two USTs permitted by CDF-Camp Cuesta

The information in the SWRCB list is inconsistent with information provided by Camp SLO, which indicates only five active USTs within the current Camp SLO boundary. The permit issued to Camp SLO for three USTs may include two tanks formerly located at Building 888, which have since been taken out of service and removed. Information obtained from the SWRCB list also indicates that CMC and Cuesta College have permits to operate five and three USTs, respectively. Other pertinent permit information obtained from Natec include the following:

- o Waste Discharge System (WDS) permits for the wastewater treatment plant operated by CMC (I.D. #3 400108001) and Camp SLO's Sutter Avenue landfill (I.D.#3 400301001).
- o Waste Management Unit Database System listing for Camp SLO's Sutter Avenue landfill (WDS I.D. #4003 01001-01).

## 2.5 INSPECTIONS AND NOTICES OF VIOLATION

A number of environmental inspections have been conducted at Camp SLO by various federal, state, local, and military agencies. A brief description of each of these inspections is presented below:

- o January 30, 1985 - EPA conducted a polychlorinated biphenyls (PCBs) inspection at Camp SLO. The inspection resulted in a notice of noncompliance issued on January 2, 1986 (Section 3.10).
- o May 1, 1986 - San Luis Obispo County Air Pollution Control District (APCD) conducted an inspection of vapor recovery equipment on the active USTs at Camp SLO. Notice of Violation (NOV) #0325 was issued on May 6, 1986. The NOV required corrective action to repair or replace defective gaskets and fill caps on several active gasoline USTs. No "follow-up" information was available to verify whether the required corrective actions were taken.
- o July 20, 1987 - San Luis Obispo County Health Agency inspected the hutment heating oil systems at Camp SLO in response to a surface spill that occurred on July 17, 1987. Two NOVs were subsequently issued (Section 3.3).
- o May 11 and 16, 1989 - APCD inspected vapor recovery equipment on the active USTs at Camp SLO. NOVs 0941 through 0944 were issued, requiring repair of defective fill pipe equipment. A November 20, 1989 letter from APCD indicated that Camp SLO had paid a fine in the amount of \$150 and was released from any and all claims for civil or criminal penalties arising from these NOVs. However, no follow-up information was available to verify whether the required corrective actions were, in fact, implemented.
- o January 30, 1990 - EPA conducted a PCB compliance inspection at Camp SLO. A letter issued by EPA on March 19, 1990 indicated that no violations of federal PCB regulations were identified during the inspection (Section 3.10).
- o January 8, 1991 - DTSC conducted a waste generator inspection at Camp SLO in response to a complaint that "CA ARNG should inspect and regulate all tenants at Camp SLO in regard to hazardous waste management." DTSC's inspection report, issued on January 29, 1991, identified several waste-handling violations. The violations reportedly involved improperly labeled containers, exceeding the 90-day holding time, and not having a site-specific contingency plan for USPFO.

- o April 12, 1994 - CA ARNG Environmental Office conducted a biennial inspection of OMS-19. The inspection report issued on April 20, 1994(a) noted several deficiencies related to record keeping, container labeling, and general "housekeeping." The report also recommended that the electronic tank level monitoring system be calibrated and that a damaged diesel fuel tank fill pedestal be repaired. There was no mention of unauthorized spills or releases of hazardous substances in the report.
- o April 13, 1994 - CA ARNG Environmental Office conducted a biennial inspection of USPFO. The inspection report, issued on April 20, 1994(b), indicated deficiencies similar to those reported in the OMS-19 inspection report (above). In addition, the report indicated that hazardous solid waste containers such as paint cans were observed in the facility dumpster.
- o April 12 - 15, 1994 - CA ARNG Environmental Office conducted a base-wide biennial inspection of Camp SLO. The inspection report issued April 26, 1990 identified several deficiencies. Most of the deficiencies identified were related to administrative or record-keeping procedures. The report noted that Camp SLO did not have a current permit from APCD to operate the paint spray booth located in Building 1341 in the engineering yard.

A number of other NOV's have been issued regarding operations at Camp SLO. A NOV was issued by the RWQCB on December 2, 1994 related to Camp SLO's failure to obtain a storm water discharge permit for industrial areas on the base. CA ARNG reportedly is in the process of obtaining a storm water discharge permit for Camp SLO. It is Geosystem's understanding that a NOV was issued by RWQCB regarding the grading of the interim cover over the Sutter Avenue landfill. Specifically, the RWQCB has requested "remedial grading" to prevent surface water ponding over the landfill. The NOV was apparently prompted by CA ARNG's failure to regrade the landfill cover.

### 3.0 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

This section describes areas within the current and historical boundaries of Camp SLO that are considered to be of potential environmental concern. Areas of potential concern include locations where hazardous materials or wastes are known or suspected to have been used, stored, or disposed at some time during Camp SLO's operational history.

#### 3.1 SOLID WASTE DISPOSAL SITES

There are four confirmed solid waste disposal facilities located within the former Camp SLO boundary; the Sutter Avenue, Story Park, Kansas Avenue, and Pennington Creek landfills. The Sutter Avenue and Story Park landfills are located within the current Camp SLO boundary. The Kansas Avenue landfill is located on property currently owned by the County. The Pennington Creek landfill is located on land currently owned by Cal Poly. The locations of the four confirmed landfills are shown in Figure 5. Under a separate contract with DSA, Geosystem recently prepared a final closure plan for the Sutter Avenue landfill and conducted subsurface investigations at each of the other three. Soil, ground water, and air quality data collected during Geosystem's investigations at the four confirmed landfills are included in Appendix B and form the basis for the following summaries.

In addition to the four confirmed landfills at Camp SLO, there are two locations where solid wastes may have been handled. One of these is located behind (to the south of) the former laundry building, Building 1200, which is on property now owned by the County. The second is reported to have been near Building 1649, near the western end of the cantonment area, on land still part of Camp SLO. The evidence for these suspected solid waste sites, such as it is, is presented in Section 3.1.5. Note that because of the inconclusive nature of the evidence, Geosystem has refrained from using the term "landfill" to describe these two suspected solid waste sites. Their approximate locations are shown in Figure 5.

### 3.1.1 Sutter Avenue Landfill

The Sutter Avenue landfill is located in the southeast corner of Camp SLO (Figure 5), in a flat, low-lying area in the Poison Oak Creek valley between Cerro Romualdo peak and Conner peak. The landfill is bounded by Poison Oak Creek to the southwest, Sutter Avenue and a former Caltrans facility to the north, and privately owned range land to the south. The southern boundary of the landfill is also part of the Camp SLO boundary. A topographic map of the Sutter Avenue landfill is presented in Figure 6.

Records pertaining to the Sutter Avenue landfill are few; however, a review of aerial photographs indicates that waste disposal operations began sometime between June 29, 1969 and October 24, 1973, shortly after Camp SLO returned to State control. CA ARNG submitted a Report of Waste Discharge for the landfill on November 12, 1976, subsequent to which the RWQCB issued waste discharge requirements (WDRs) in Order No. 77-21, which was adopted on February 11, 1977 (RWQCB, May 12, 1989).

Little is known about the types of wastes disposed of in the landfill prior to 1982. From 1982 to 1985, the wastes are reported to have been primarily "commercial rubbish." Other wastes disposed of at the landfill included scrap wood, scrap metal, weapon oil, brush and grass clippings, and some food waste (Ecology and Environment, Inc., May 10, 1991). The wastes were disposed of within the landfill using the trench-and-cover method. According to the U.S. Army Environmental Hygiene Agency (USAEHA), the trenches were reportedly about 200 to 300 feet long, 8 feet wide, and 8 feet deep (USAEHA, July 2, 1986). Approximately twice a year, open burns were conducted to reduce the volume of "agricultural wastes prior to burial" (USAEHA, December 20, 1989). It is noted that ground water was encountered in some of the waste disposal trenches. Specifically, "landfill operating personnel reported that occasionally a trench dug in the afternoon would be half filled with water by the next morning" (USAEHA, July 2, 1986). This observation suggests that disposed waste materials may be in contact with the ground water beneath the site, particularly during seasonally high water table conditions.

Disposal of municipal-type waste materials in the landfill reportedly stopped in 1985. The majority of the waste materials generated at Camp SLO since 1985 have been disposed of off site although "demolition debris" was disposed of in the subject landfill after 1985. Some of the demolition debris was reportedly ignited as part of a fire fighter training program for the staff of the CDF. Also, the USAEHA refers to a 1987 county inspection report that refers to a "mound of dirt and agricultural/wood wastes" on the "west side of the fill area awaiting final burial."

A number of soil and ground water investigations have been performed at the Sutter Avenue landfill since 1986. To date, a total of ten ground water monitoring wells, Wells MW-1 through MW-10, have been installed around the landfill. A summary of the ground water analytical data from these wells is included in Appendix B to this report. The locations of the monitoring wells are shown in Figure 6. Ground water contours generated from ground water level measurements recorded in February 1996 are included in Appendix B. The contours indicate that ground water beneath the Sutter Avenue landfill flows to the north-northeast before swinging around to the north-northwest as the axis of the Chorro Creek valley is approached. The February 1996 contours are considered typical for the Sutter Avenue landfill.

As shown in Appendix B, Tables B-1 and B-2, ground water beneath and immediately downgradient of the Sutter Avenue landfill has been impacted by certain VOCs. Specifically, the following VOCs have been detected in Wells MW-1, MW-4, MW-6, and MW-7:

<u>Compound</u>	<u>Concentration</u> <u>Range</u> ( $\mu\text{g/}$ )	<u>MCL</u> <sup>(1)</sup>
Carbon tetrachloride	ND - 7.6	0.5
Chlorobenzene	ND - 7.7	- -
Chloroform	ND - 2.0	100 <sup>(2)</sup>
1,4-Dichlorobenzene	ND - 8.6	5
Dichlorodifluoromethane	ND - 6.0	- -
Tetrachloroethylene	ND - 0.7	5
Toluene	ND - 1.1	100 <sup>(3)</sup>

- NOTES: (1) MCL denotes Maximum Contaminant Level in drinking water.  
(2) MCL for total trihalomethanes = sum of bromoform, bromodichloromethane, chloroform, and dibromochloromethane concentrations.  
(3) State of California Action Level.

In December 1995 Geosystem conducted a downgradient ground water quality investigation at the Sutter Avenue Landfill. The scope of work included the collection of ground water samples from six Hydropunch® borings (Borings SB-1 through SB-6) and the installation of two downgradient monitoring wells (Wells MW-9 and MW-10). The locations of the Hydropunch® borings and wells are shown in Figure 6 and ground water quality data are included in Appendix B, Table B-1. Low dissolved VOC concentrations were detected in Hydropunch® samples SB-1, SB-3, and SB-4. However, dissolved VOCs were not detected in the ground water samples collected from Hydropunch® Borings SB-5, SB-6 or Wells MW-9 and MW-10. The results of the investigation (Geosystem, March 28, 1996b) indicate that dissolved VOCs in ground water have not migrated as far as Wells MW-9 and MW-10, which are located approximately 680 and 760 feet downgradient of the landfill boundary, respectively.

Geosystem issued a final closure and postclosure maintenance plan on November 30, 1995 and CA ARNG plan to close the Sutter Avenue landfill in the summer of 1996. Geosystem anticipates that construction of an engineered final cover over the waste disposal area will minimize the infiltration of precipitation into the waste materials. Currently, however, the low VOC concentrations detected in ground water beneath and downgradient of the landfill

are not considered to pose an immediate or significant threat to the environment and do not currently pose a threat to any known drinking water supply wells.

### 3.1.2 Story Park Landfill

The Story Park landfill is located about 600 feet north of Highway 1, between the main cantonment area of Camp SLO and the CMC. The location of the Story Park landfill is shown in Figure 5 and a larger scale topographic map is presented in Figure 7. As shown in Figure 7, the landfill occupies a relatively flat-lying, triangular clearing surrounded by trees and defined on the north and south sides by surface water courses and to the east by a small bedrock outcrop. The ground surface in the clearing slopes gently from an elevation of about 339 feet MSL in the southeast corner to about 334 feet MSL in the northwest corner. The area of the clearing potentially useable for waste disposal is about 1.82 acres, although, as discussed below, the area actually used for landfilling may be significantly smaller (Geosystem, August 25, 1995).

The water courses that bound the landfill are Chorro Creek to the south and a small, unnamed tributary to Chorro Creek to the north. The tributary, shown as a "drainage ditch" on several old drawings of Camp SLO, originates in the hills to the west of Chorro Reservoir. In the vicinity of the landfill, bedrock is exposed in the beds of both water courses, although the bedrock is partially obscured by large boulders. The beds of the stream-cut channels are between 10 and 15 feet lower than the surface of the clearing in which the landfill is located (Geosystem, August 25, 1995).

The USAEHA has stated (July 2, 1986) that there are no operational records available for the Story Park landfill and that the former operator has passed away. USAEHA goes on to note that information pertaining to the types of waste disposed of in the Story Park landfill is not available. Most of the following information has been gleaned and/or inferred from historical aerial photographs, historical plans of Camp SLO, and waste disposal procedures elsewhere at Camp SLO.

The earliest indication of any activity at the Story Park landfill site is an aerial photograph taken on April 3, 1949, which shows a surface feature in the southeast corner of the landfill area. Plans of Camp SLO dated November 17, 1952, identify this feature as an Imhoff tank designated as Tank T-608. The approximate location of the former Imhoff tank is shown in Figure 7. Imhoff tanks are essentially prefabricated, self-contained sewage treatment systems that are analogous to aboveground septic tanks. Geosystem has not been able to locate any plans or aerial photographs older than April 3, 1949 so it is not known when the Imhoff tank was situated in the landfill area. Subsequent aerial photographs show that the tank was present until at least September 1956. The Imhoff tank is not present in an aerial photograph taken in May 1965, although disturbed soil at the former tank location suggests that the tank may have been recently removed.

The presence of the Imhoff tank indicates that sewage may have been at least partially treated at the Story Park landfill site while the U.S. Army was in control of Camp SLO. The fact that the tank was assigned a "tank number" suggests that it was operated, rather than merely stored at the landfill site. Assuming the Imhoff tank was operated, the absence of support or auxiliary equipment in the aerial photographs suggests that the aqueous wastes may have been discharged directly to Chorro Creek and that the digested solids may have been applied to the ground surface and/or discharged to Chorro Creek. It is not clear how the waste stream arrived at the Imhoff tank. The waste could have been trucked to the site or, perhaps more likely, gravity flowed from latrines associated with the buildings to the north.

The only other indication of waste disposal activities at the Story Park landfill site is an aerial photograph taken on February 13, 1969. This photograph clearly shows a single trench excavated along the southern boundary of the clearing, approximately parallel to Chorro Creek. The approximate location of this trench is shown in Figure 7. The trench is not visible in the preceding aerial photograph, taken on May 3, 1965, and appears to have been backfilled by the time the next available photograph was taken on June 29, 1969. None of the subsequent photographs, taken in November 1972, October 1973,

September 1978, and August 1987 show any indications of additional waste disposal activities at Story Park. Currently, the clearing features a grass ground covering and is equipped with several metal barbeque stands. USAEHA has indicated (December 20, 1989) that the site has been used "as a bivouac and training area" in the past.

Given the admittedly limited data available, one possible scenario is that the single trench visible in the February 17, 1969 aerial photograph was excavated by the CA ARNG to dispose of the solid residues resulting from years of sewage treatment at the site by the U.S. Army. Under this scenario, digested sludge from the Imhoff tank would have been disposed of on the ground surface at the landfill site. When the Imhoff tank was removed, between May 1965 and February 1969, it is likely that some type of "cleanup" would have been required to restore the site for alternate uses. The possibility that other waste materials were also disposed of in the trench, however, cannot be ruled out.

It is noted that the "main" Camp SLO waste water treatment system was reportedly constructed by the U.S. Army in the 1940s in the extreme southwest corner of Camp SLO, south of Highway 1. It appears that the Imhoff tank may have been used to treat waste generated in areas not served by the sewer system that reports to the main treatment system.

Geosystem performed a preliminary investigation at the Story Park landfill in late 1994/early 1995. The investigation involved collecting and analyzing soil samples from three borings and converting one of these borings into a hydraulically downgradient ground water monitoring well (Well MW-1). Ground water was encountered beneath the landfill at a depth of approximately 27 feet in Well MW-1. Soil and ground water data from the Story Park landfill are summarized in Appendix B, Tables B-4, B-5, and B-6. As shown in Appendix B, there is no evidence that soil or ground water beneath the Story Park landfill have been impacted by waste disposal operations (Geosystem, August 25, 1995).

### 3.1.3 Kansas Avenue Landfill

The Kansas Avenue landfill is located east of the developed area of Camp SLO, just south of Highway 1 (Figure 5). A topographic map of the Kansas Avenue landfill is presented in Figure 8. As shown in Figure 8, the landfill is bounded on the north by a County Sheriff facility, on the east by a chainlink fence and agricultural land, on the south by the slope flanking Cerro Romualdo, and on the west by a vacant field. A chainlink fence bisects the landfill in the east-west direction. The portion of the landfill south of the fence has been cultivated for "dry farming," i.e., unirrigated hay for cattle fodder. A County animal shelter has been constructed directly over a portion of the landfill on the north side of the fence (Figure 8). In addition, part of Oklahoma Avenue and the southernmost part of the County Sheriff facility are believed to overlie disposed waste material.

Little information is available regarding the volume or type of wastes disposed at the Kansas Avenue landfill. Historical aerial photographs reviewed by Geosystem indicate that Kansas Avenue is the oldest of the four landfills at Camp SLO. The landfill was reportedly operated from 1941 until approximately 1956 (Ecology and Environment, May 10, 1991). Aerial photographs indicate that the landfill was in use by April 1949 and was still active in 1956. By November 1959, however, the landfill had become inactive. During World War II, the Army reportedly monitored the wastes disposed at the Kansas Avenue landfill. This strict monitoring is believed to have been part of an aggressive recycling program implemented by the Army to support the war effort. Scrap metal was salvaged and oil, paint, and solvent containers were not disposed in the landfill. Monitoring was reportedly not as strict after the war and some paint and oil/grease containers and dry cell batteries were reportedly disposed in the landfill (Ecology and Environment, May 10, 1991). The animal shelter appears to have been constructed between May 1975 and 1977.

Investigations have been conducted at the Kansas Avenue Landfill by Reidel Environmental Services, Inc. (Reidel), of Torrance, California, and by Geosystem. Also, a geotechnical investigation for the construction of the County animal shelter was conducted in 1975 (Reidel, April 1993).

In November 1991, Reidel installed two 2-inch diameter ground water monitoring wells (Wells MW-1 and MW-2) and four suction lysimeters (Lysimeters L4 through L-7) around the Kansas Avenue landfill. The locations of Well MW-1 and the lysimeters are shown in Figure 8. However, Well MW-2 was installed too far downgradient to be shown in Figure 8 and, for all intents and purposes, is irrelevant in evaluating the possible impact of the Kansas Avenue landfill on the subsurface environment. Ground water was encountered at 39 feet below grade in Well MW-1 and at 8.5 feet below grade in Well MW-2. Soil samples for chemical analyses were collected from the well borings but not from the lysimeter borings. Ground water and pore water samples were collected from the monitoring wells and the lysimeters, respectively. In addition, Reidel collected and analyzed a ground water sample from Camp SLO Well No. 1 and a surface water sample from Chorro Creek, downstream of the landfill. Geosystem installed two additional monitoring wells (Wells MW-3 and MW-4) and one soil boring (Boring B-1) in October 1994. Ground water was encountered in Wells MW-3 and MW-4 at depths of 28 and 23 feet below grade, respectively. However, water level measurements taken in February 1995 indicated that ground water levels in these wells had risen to near ground surface. Similar variations in depth have been observed in Camp SLO Well No. 1. Geosystem collected soil samples for chemical analysis from Wells MW-3 and MW-4 and from Boring B-1. Ground water samples were collected from Wells MW-3 and MW-4 on October 26, 1994 and from Wells MW-1, MW-2, and Camp SLO Well No. 1 on January 31 and February 1, 1995. A soil pore water sample was also collected from Lysimeter L-7 on January 31, 1995.

No VOCs or other organic compounds were detected in any of the soil samples collected by Reidel or Geosystem. Some elevated metals concentrations, notably chromium and nickel, were detected in certain samples. However, the concentrations were similar to those measured elsewhere at Camp SLO and are believed to reflect naturally occurring concentrations in native soils. Toluene was detected in Wells MW-3 and MW-4 at very low concentrations (0.9 and 1.3  $\mu\text{g}/\text{l}$ , respectively). No other compounds were detected in any of the ground water samples. Camp SLO Well No. 1 has been sampled on a number of occasions by Reidel, Geosystem, and the San Luis Obispo County Engineering Department.

No VOCs or other constituents related to past landfilling activities have been detected in this well. Total recoverable petroleum hydrocarbons (TRPH) and Arochlor-1254 (a PCB compound) were detected in a soil pore water sample collected from Lysimeter L-6 in December 1991 by Reidel. Detected concentrations were 3 mg/ℓ and 1.8 μg/ℓ, respectively. No other organic compounds were detected in the pore water samples collected at the landfill (Reidel, April 1993). Lysimeter L-6 was never resampled for TRPH or PCBs and is believed to have been destroyed. Geosystem sampled Lysimeter L-7 on January 1, 1995. No organic constituents were detected except bis (2-ethylhexyl) phthalate, which is believed to be a sampling artifact, at a concentration of 75 μg/ℓ. Eleven soil gas samples were collected by Geosystem at the Kansas Avenue landfill on February 1, 1995. The samples were analyzed for fixed gases, which include methane, nitrogen, oxygen, carbon dioxide, and carbon monoxide. Methane and carbon monoxide were not detected in any of the samples above the laboratory detection limits (Geosystem, October 9, 1995).

Except for low concentrations of toluene in ground water samples from Wells MW-3 and MW-4, it does not appear that the Kansas Avenue landfill has adversely impacted the subsurface environment. It is noted that Wells MW-3 and MW-4 have only been sampled once. The detected toluene concentrations are approximately two orders of magnitude lower than the state action level of 100 μg/ℓ. Analytical data gathered during investigations at the Kansas Avenue landfill are summarized in Appendix B, Tables B-7, B-8, and B-9. Ground water contours based on water levels measured on February 24, 1995 are included in Appendix B.

#### 3.1.4 Pennington Creek Landfill

The Pennington Creek landfill is located about 1.2 miles northwest of the main entrance to Camp SLO (Figure 5) and about 2,000 feet north-northeast of Highway 1. The topography of the landfill area is shown in Figure 9. The landfill is bounded on the northwest by a small tributary to Pennington Creek, on the southeast by Pennington Creek Road, and on the east by undeveloped rangeland. The land around the Pennington Creek landfill was

originally part of Camp SLO but was acquired by Cal Poly in 1968. In the past, the Pennington Creek landfill was often called the Cal Poly landfill.

Little information is available regarding the volume or type of wastes disposed of at the Pennington Creek landfill. Historical aerial photographs obtained by Geosystem show that the site was inactive at least through September 1956. The next available photograph of the Pennington Creek landfill was taken in May 1965. This photograph shows an open trench, indicating that the site was active at the time. Subsequent photographs indicate that the landfill has been inactive since at least October 1973. A trenching investigation performed by CA ARNG reportedly indicated that the waste material was limited to a thin (12- to 18-inch) layer overlain by approximately 12 to 18 inches of soil. The types of waste observed reportedly included bottles, cans, other domestic garbage, and discarded military gas masks. So far as Geosystem is aware, however, the trenching investigation was not documented in a written report.

An investigation was conducted at the Pennington Creek landfill by Reidel Environmental Services, Inc. (Reidel) in November 1991. Specifically, Reidel installed three suction lysimeters (Lysimeters L-1, L-2, and L-3) around the perimeter of the landfill. Ground water was encountered in one of the lysimeter borings at a depth of about 6 feet below grade. Several phthalate compounds were detected in soil samples collected from the lysimeter borings. However, similar concentrations of these compounds were also detected in background soil samples. Metals concentrations detected in soil samples from the landfill were similar to or lower than background samples. Two surface water samples collected from the adjacent creek did not contain detectable concentrations of organic constituents. Surface water and lysimeter samples did not contain significant metals concentrations (Reidel, April 1993).

Geosystem conducted a preliminary investigation at the Pennington Creek landfill between October 1994 and February 1995. The investigation involved drilling and soil sampling from two borings, conversion of one boring into a monitoring well (Well MW-1), ground water

monitoring, and soil gas monitoring. In addition, Lysimeter L-1 was sampled. Organic constituents, including phthalates, were below laboratory detection limits in all of the soil samples analyzed, as well as in the ground water sample from Well MW-1 and the pore water sample from Lysimeter L-1. No elevated metals concentrations were observed in soil or ground water samples (Geosystem, August 21, 1995). Geosystem also collected a total of five soil gas samples plus one background sample at the Pennington Creek landfill. The soil gas samples were collected through temporary probes at a depth of about 3 feet below grade. The samples were analyzed for fixed gases, including methane. However, methane was not detected in any of the samples analyzed (Geosystem, August 21, 1995).

The findings of the Reidel and Geosystem investigations at the Pennington Creek landfill indicate that waste disposal activities at the site have not adversely impacted soil, ground water, or surface water quality. Analytical data gathered during investigations at the Pennington Creek landfill are summarized in Appendix B, Tables B-10, B-11, and B-12.

### 3.1.5 Other Potential Solid Waste Handling Areas

As noted in Section 3.1, there is some evidence, albeit inconclusive, that solid waste materials were handled at two other locations within the historical boundaries of Camp SLO. The evidence, such as it is, is presented below and Geosystem again cautions against using the term "landfill" to describe either of these two sites at this time.

Mr. John Scholtes of SLOCHA suspects a potential waste handling area located directly south of the former laundry (Building 1200) on property now owned by the County. More specifically, the area is located 600 feet south of Kansas Avenue and about 1,400 feet west of the Kansas Avenue landfill. The approximate location is shown in Figure 5. The suspected disposal area is separated from the laundry building by a wooded area along a small creek and is encircled by a dirt or gravel road. An undated, low-level, oblique aerial photograph provided by Mr. Scholtes shows what appears to be debris piles in this area. A military truck is visible in the aerial photograph backed up to the debris piles. Cars visible in the photograph suggest that the picture was taken sometime during the 1940s. No open

pits or trenches are evident in the photograph. It is possible that the suspected debris piles may have consisted of scrap metal and other recyclable items that were not disposed of in the on-site landfills. Alternately, the piles may have been wastes from which recyclables had yet to be separated prior to disposal.

The second potential waste handling area is located in the westernmost end of the cantonment area. More specifically, the area is believed to be located in the cleared area bounded by Sutter, Mono, Tehama, and Merced Avenues. Some concrete debris is currently visible at the ground surface in this area. According to a CMC employee, desks, books, and other office supplies were buried in this area in the early 1980s. These items were reportedly removed from buildings vacated by CA ARNG that were to be occupied by CCC.

### 3.2 UNDERGROUND STORAGE TANKS

Many dozens of USTs were operated over the years at Camp SLO. The majority of these tanks were reportedly installed by the U.S. Army during the 1940s. Most, if not all, were used to store petroleum products including heating oil, diesel fuel, and gasoline (referred to as MOGAS by the military). Nearly all of the USTs at Camp SLO have been removed or abandoned in place. The few remaining tanks are used to store diesel and gasoline to fuel military and other State-owned vehicles. Brief summaries of the active and abandoned USTs at Camp SLO are presented in Sections 3.2.1 and 3.2.2, respectively.

#### 3.2.1 Active Underground Storage Tanks

Currently, there are five active USTs located within the Camp SLO boundary. Two of these USTs, located near Building 962, are operated by CDF and store gasoline and diesel fuel. Another two USTs are located north of Building 1328, across Sutter Avenue. These USTs are operated by OMS-19 and also store gasoline and diesel. The fifth UST is located inside the engineering yard near Building 1331. All of the tanks are reportedly of single-wall, steel construction. The gasoline storage tanks are equipped with vapor recovery systems and are permitted with AQMD (Permit No. C-1211-P-2). All of the tanks are reportedly precision-

tested for tightness on an annual basis. The capacities, contents, and locations of the five currently active USTs are summarized in Table 3.

### 3.2.2 Abandoned Underground Storage Tanks

Between April 1988 and May 1993, a total of 171 USTs were excavated and removed from Camp SLO, most by PTS Environmental of Placer, California (PTS Environmental, undated). The majority of the tanks previously contained heating oil and/or diesel fuel for the heating systems at various buildings throughout the base. The heating oil tanks were reportedly installed by the Army in 1941 and were abandoned when the Army relinquished ownership of Camp SLO to CA ARNG in 1965. Many of the heating oil tanks were reportedly filled with water to maintain ballast. In addition to the heating oil tanks, a number of inactive motor vehicle fuel USTs were removed. Excavations in a number of areas where USTs were known or suspected to have been located failed to find USTs. Apparently, CA ARNG assumed that the USTs in these areas had already been removed by the U.S. Army. However, no records are available pertaining to any tank removals carried out by the U.S. Army.

In addition to the documented removals of inactive USTs and/or the excavations to ascertain whether the tanks were still present, there are many other locations within the former boundary of Camp SLO where USTs were very probably located. As noted earlier in this report, a great deal of land that was formerly part of Camp SLO has been transferred to other state and local agencies and the property redeveloped. Based on the types of activities that occurred on these properties prior to the transfer, it is highly probable that USTs were operated on at least some. However, there are no records pertaining to the removal or investigation of USTs prior to the redevelopment of these properties. Accordingly, it is possible that there may still be inactive USTs and/or residual contamination present beneath at least some of these properties. Specifically, USTs may be present beneath property owned and/or occupied by CMC, Cuesta College, and the County.

As indicated in Table 4, the majority of the UST sites investigated were relatively uncontaminated and did not require further investigation or remediation following tank removal. Out of all the tank sites addressed by PTS, the San Luis Obispo County Health Agency, Division of Environmental Health (SLOCHA) required additional investigation at a total of 28 former UST sites. Geosystem conducted soil investigations at these sites during October/November 1994. Eighteen of the sites did not show significant soil contamination and SLOCHA does not require further investigation or remediation. Based on the results of the initial soil investigations, Geosystem recommended limited soil removal and disposal at 6 of these 28 sites (Sites 621, 733, 748, 838, 882, and 887) (Geosystem, November 23, 1994). Geosystem conducted additional soil and ground water investigations at the remaining five sites, Sites 722, 735, 841, 1328 (OMS-19), and 1348. The additional investigations indicated that relatively minor impacts to ground water had occurred at Sites 735, 841, and 1328. Based on the results of the additional investigations, Geosystem recommended limited soil removal and disposal at Sites 735 and 1328 (Geosystem, September 14, 1995). However, in light of the pending SWRCB policy changes stemming from the Lawrence Livermore National Laboratory study (October 16, 1995) of leaking USTs in California, Geosystem, CA ARNG, and the regulatory agencies are currently reevaluating all of the diesel fuel/heating oil tank sites to determine whether active remediation is, in fact, warranted. Soil and ground water quality data from the UST site investigations are included in Appendix C.

During previous UST work at Camp SLO, Geosystem was informed that soil contamination was encountered during subsurface utility repair work near former UST locations at Motor Pool #8 (Building 888) and in the Engineering Yard (Building 1331/1332). The USTs at Motor Pool #8 are known to have been removed by PTS; however, Geosystem has not reviewed the results of any invert sample analyses conducted. The USTs at the Engineering Yard were removed in 1988; however, the results of invert sample analyses, if any, were not available for Geosystem's review.

### 3.3 ABOVEGROUND TANKS AND HUTMENT HEATING SYSTEMS

Motor vehicle fuels and heating oils have been stored in a number of aboveground storage tanks within the current and former boundaries of Camp SLO. Aboveground fuel storage tanks and heating oil tanks are discussed in the following sections.

#### 3.3.1 Aboveground Fuel Storage Tanks

Motor vehicle fuels are known to have been stored in, and dispensed from, aboveground tanks at the following locations:

- o Former Caltrans META Yard
- o CCC
- o Near borrow area on Santa Cruz Road.

At the former Caltrans facility, gasoline and diesel fuel were stored in rectangular, double-walled steel vaults. This relatively recent storage tank design features integral dispensing equipment and the interstitial space between the primary and secondary containment walls is often filled with concrete.

At the CCC construction yard, diesel fuel and gasoline are stored in two aboveground steel tanks. The tanks are located on a bermed concrete pad. No visible leakage or stained soil was observed by Geosystem personnel.

An aboveground diesel fuel tank is located about 700 feet east of the Story Park landfill, on the north side of Santa Cruz Road. No visible leaks or surface staining were observed by Geosystem personnel.

#### 3.3.2 Hutments Heating Oil Distribution Systems

Several hundred two-man hutments were constructed at Camp SLO for troop housing during World War II. Each hutment was equipped with a small oil-burning stove for heating purposes. Heating oil and/or diesel fuel was supplied to each of these stoves via shallow subsurface piping connected to an aboveground storage tank. The fuel was

delivered through the piping by gravity flow. Typically, about 6 to 20 hutments were served by each aboveground storage tank. CA ARNG divides the hutments into 15 separate areas, designated as Hutment Areas A through O. The locations of Hutment Areas A through O are shown on a CA ARNG map included in Appendix C.

On July 17, 1987, a truck ran over and damaged a valve connected to the heating oil distribution system in Hutment Area F. (Note that several documents refer to this area as "Hutment Area G," but unless the designations for the hutment areas have changed in the past, these references appear to be incorrect.) This incident resulted in the release of approximately 500 to 1,000 gallons of diesel fuel to the ground surface. The release occurred just west of Sonoma Avenue, south of Building 828. An investigation was performed in January 1991 to delineate the extent of diesel-impacted soil (Roy F. Weston, February 25, 1991). The investigation indicated that the spill was limited to an area beneath and around six of the easternmost huts. The possible impact on ground water quality was not investigated.

On July 20, 1987, SLOCHA conducted an inspection at Camp SLO. As a result of this inspection, two NOVs were issued to Camp SLO related to the hutment heating oil systems. The first NOV, issued on July 21, 1987, required assessment and remediation of the July 17, 1987 diesel release discussed above. The second NOV, issued on July 23, 1987, pertained to visible soil contamination observed around the hutment heating oil distribution systems throughout Camp SLO. The July 23, 1987 NOV ordered Camp SLO to "cease and desist" use of the hutment heating oil distribution systems throughout the base. The hutment heating oil distribution systems were subsequently taken out of service and the aboveground fuel storage tanks were removed. A total of 269 of the hutments at Camp SLO, including all of the hutments in Areas C, D, E, F, and H, were demolished as part of a new barracks construction project. According to a March 25, 1993 quarterly environmental update for Camp SLO, the contractor for the new barracks construction project excavated and relocated approximately 26,000 cubic yards of contaminated soil. In this regard, it is Geosystem's understanding that the contractor stripped the upper 1 to 2 feet of soil from

the entire hutment area, probably including a large volume of uncontaminated soil in the process. An October 1, 1993 quarterly environmental update indicated that Camp SLO engineers were still in the process of discing the 26,000 cubic yards of soil to promote aeration/bioremediation.

A total of 593 hutments are still present at Camp SLO, some of which are still in use. Although the aboveground storage tanks have been removed, Geosystem personnel observed that the underground heating oil piping is still in place in many of the remaining hutment areas and, in some cases, is still connected to the hutments. To date, no soil or ground water investigations or remediation have been performed in these areas. Fifteen aboveground storage tanks were removed by PTS Environmental in 1993. The former locations of these tanks are listed in Table 5.

Historical aerial photographs indicate that hutments were previously present at several other locations within the current and historical Camp SLO boundaries. Areas where hutments appear to have been previously located include the following:

- o Beneath the existing CMC East facility.
- o Beneath the existing parade ground and Cuesta College campus. This area is bounded by Chorro Valley Road to the south; Cuesta College Road to the west; and Dairy Creek to the east. The northern edge of the former hutment area was located about 700 feet south of and parallel to Highway 1.
- o South of Chorro Creek in an area bounded by Colusa Avenue to the north; Amador Avenue to the east; Sutter Avenue to the south; and Glenn Avenue to the west.
- o In the southwest corner of the cantonment area. This area is bounded by Tehama Avenue to the north; Merced Avenue to the east; Sutter Avenue to the south; and Mono Avenue to the west.

The hutments were removed from these areas beginning some time after World War II. All of the hutments in these areas appear to have been removed by October 1973. So far as

Geosystem is aware, there are no available records pertaining to subsurface conditions beneath these former hutment areas.

#### 3.4 ORGANIZATIONAL MAINTENANCE SHOP #19

OMS-19 is located in the eastern half of Building 1328. This facility provides maintenance, repair, and support services to the various military units at Camp SLO. Prior to occupation by OMS-19, Building 1328 was an ordnance shop and was reportedly used as a tank maintenance facility. In the past, a railroad spur was located on the north side of OMS-19. OMS-19 currently features vehicle maintenance bays, one hydraulic lift, three small parts-washing tanks, and a hazardous waste storage area. OMS-19 reportedly generates approximately 800 gallons of waste oil per year (Mr. Richard C. Rauenzahn, March 5, 1990).

The hazardous waste storage area at OMS-19 consists of five metal storage sheds located on a concrete slab. The storage sheds are purpose-built for storing hazardous materials and their design incorporates secondary containment for potential container leakage or spills. The concrete slab is not bermed. An emergency shower/eyewash station is located at the western end of the hazardous waste storage area. At the time of Geosystem's May 17, 1995 site visit, the storage sheds and concrete pad were clean and no evidence of surface spills was observed. Hazardous wastes awaiting pick-up were segregated by type and included waste oil, waste fuel, used batteries, expired paint, and miscellaneous automotive wastes.

Potential sources of contamination at OMS-19 include primarily surface spills of fuel, waste oil, grease, battery acid, antifreeze, solvent, and other wastes associated with vehicle maintenance activities.

In addition to the possible maintenance-related sources of contamination associated with OMS-19, a 7,500-gallon underground concrete heating oil bunker is located immediately south of Building 1329. Fuel from this bunker was used to fire two large boilers in Building 1328 and one boiler in Building 1329. Use of the tank was discontinued in the 1970s and it was subsequently filled with sand. Soil and ground water beneath and around

this tank have been impacted by petroleum hydrocarbons, as discussed in Section 3.2.2.. A concrete sump believed to be related to the fuel delivery system for the boilers is located in Building 1328, near the former boiler locations.

### 3.5 MOTOR POOLS AND OTHER VEHICLE MAINTENANCE FACILITIES

Vehicle maintenance facilities at Camp SLO have included motor pools, vehicle wash racks, and vehicle grease racks. In addition to these "fixed" facilities, it is possible that minor maintenance activities, such as oil changes, were performed elsewhere. Also, it is possible that vehicles that broke down in the field were repaired on the spot. Table 6 presents a list of known former and existing buildings at Camp SLO that have been used for vehicle maintenance and/or storage.

#### 3.5.1 Motor Pools

At least five motor pools are known to have existed in the past at Camp SLO, although only one, Motor Pool #7, is still in use. The locations of the former and existing Camp SLO motor pools are shown in Figure 3. It is noted, however, that the motor pool "reference numbers" go up to Motor Pool #11, possibly indicating that other motor pools may have existed in the past. None of these other possible motor pools are visible in the aerial photographs reviewed by Geosystem, nor do they appear on any of the historical plans available to Geosystem. It is possible that other motor pools may have been very short-lived and, consequently, there are no records pertaining to them.

Activities at the motor pools included primarily vehicle storage, fueling, and maintenance/repair. Potential sources of contamination include surface spills of fuel, waste oil, grease, battery acid, antifreeze, solvent, and other wastes associated with vehicle maintenance activities. In addition, each motor pool was originally equipped with a fueling station featuring one or more USTs.

Geosystem has conducted a subsurface investigation for the former USTs at Motor Pool #7 (near Buildings 739 and 748) and is currently considering a limited soil removal action at

the Building 748 location, as discussed in Section 3.2.2. Similar removal actions are being considered at the locations of former heating oil tanks associated with Buildings 882 and 887 in inactive Motor Pool #8. Motor Pool #9 is currently occupied by CDF. CDF performs vehicle maintenance and operates two USTs, which are located near Building 962. Former Motor Pools #10 and #11 were located on property currently owned by Cuesta College. The fueling stations associated with Motor Pools #10 and #11 were located beneath what are now athletic fields and a parking lot, respectively. During a June 15, 1995 site visit, Geosystem personnel observed what appeared to be a vehicle maintenance area near Building 536 (former fuel station). Construction vehicles belonging to the Operating Engineers Trust were parked on a concrete pad believed to be the foundation of former Building 537. Several empty motor oil drums were also stored on this pad. A diesel tanker truck was parked adjacent to Building 536.

Geosystem personnel inspected Motor Pool #7 on June 29, 1995. Motor Pool #7 consists of one vehicle maintenance building (Building 749), an oil storage shed (Building 752), and a large paved parking area. At the time of Geosystem's site visit, hazardous wastes awaiting delivery to OMS-19 were stored outside and in Building 749. According to SGT Richard Casper, secondary containment "overpack" containers have been requested and will be used in the future for drum storage. The oil storage shed has a concrete floor sump, which is reportedly closed and has to be drained manually. Various automotive lubricants, cleaners, battery acid, and hydraulic oils were stored in the shed. In addition, 5-gallon "Jerry cans" of gasoline and diesel fuel were stored in the shed. Drummed materials, including antifreeze and lubricants, are stored outside.

### 3.5.2 Vehicle Wash Racks

Camp SLO is not equipped with vehicle washing facilities suitable for engine degreasing. Currently, only rinsing of vehicle exteriors is permitted at Camp SLO. According to SGT Casper, engine washing is currently performed at a Caltrans facility in the city of San Luis Obispo. No specific information was available regarding past vehicle and engine washing practices. However, these activities were typically carried out at concrete wash

racks. A 1952 plan of Camp SLO identifies 12 such wash racks. Geosystem personnel also observed a wash rack behind OMS-19 (Building 1328). Certain wash racks feature a central drain/sediment trap. Runoff from the wash racks is typically discharged directly into drainage ditches. Table 6 identifies known wash racks at Camp SLO and indicates their current status.

### 3.5.3 Vehicle Grease Racks

The 1952 plan of Camp SLO identifies 21 vehicle grease racks, all of which have since been demolished and removed. The grease racks typically consisted of a ramp leading to a horizontal platform with an open central area. The open central area allowed access to the underside of the vehicles by maintenance personnel. Oil changes, chassis lubricating, and other routine maintenance is typically performed at grease racks. Known grease rack locations at Camp SLO are listed in Table 6.

### 3.6 UNITED STATES PROPERTY AND FISCAL OFFICE

The USPFO provides military equipment and supplies to CA ARNG units at Camp SLO and elsewhere in California. The location of USPFO is shown in Figure 3. The USPFO consists of an administrative building, a large warehouse, and outdoor storage areas. In addition, USPFO stores some vehicles in the motor pool area near Building 739. In the past, USPFO also stored items in the eastern portion of Motor Pool #7 (Figure 3). Hazardous materials stored in the warehouse include various lubricants, paint, cleaners, and adhesives. Most of these materials are stored in small (up to 15-gallon) containers on pallets in the warehouse. At the time of Geosystem's June 15, 1995 site visit, the warehouse was very clean and no evidence of leakage or surface spills was observed. Bulk materials in 55-gallon drums were stored in a fenced outdoor storage yard. These materials include primarily lubricating oil, antifreeze, and other vehicle maintenance materials. No visual indications of leaks or spills were observed by Geosystem personnel.

Hazardous wastes are stored outside in the hazardous waste storage area. Wastes generated at USPFO reportedly consist of stored materials that have exceeded their shelf life and

materials that have been returned by various military units. One hazardous waste storage shed is designated for radioactive wastes. Radioactive wastes generated at USPFO include watches, compasses, and other field gear painted with minute amounts of radium or thorium paint for luminosity (SGT Dennis West, June 15, 1995).

Potential sources of contamination at USPFO include surface spills of lubricating oils, greases, paint, cleaners, and adhesives inside the warehouse and within the outdoor storage yards. There are no USTs associated with USPFO. PCB-containing transformers were reportedly improperly stored at USPFO in the past (Section 3.10). Limited surface spills of sodium hydroxide and motor oil have occurred in the USPFO yard and in the vehicle storage area (near Building 754), respectively. Both of these spills were reportedly cleaned up (SGT Dennis West, June 15, 1995).

### 3.7 ENGINEERING YARD

The Camp SLO engineering yard provides engineering, maintenance, and construction support for the base. It features a heavy equipment maintenance shop, paint shops, a welding shop, and utilities maintenance buildings. A paved vehicle storage area is located near the entrance from Sutter Avenue. A single diesel UST and associated pump island are located near the entrance (Section 3.2.1.). Hazardous materials stored at the engineering yard include paint, roofing adhesive, Freon, oxygen, acetylene, and pesticides. Until recently, pesticides and herbicides were stored in Building 1343. An undated hazardous materials inventory filed with the County indicated that a commercial herbicide (Round-Up) was the only pesticide/herbicide stored at the site at the time. A 1952 base map of Camp SLO identifies Building 1354 as "pest management." This building no longer exists. A review of historical base maps and aerial photographs suggests that this building was a small storage shed, which was removed between 1972 and 1978.

Geosystem personnel inspected the engineering yard on June 28, 1995. Paints, stains, and thinners were stored in several sheds and in cabinets inside Buildings 1349 and 1351 in the engineering yard and in Building 1357 in the warehouse area. A paint spray booth

is located in Building 1357. This spray booth reportedly does not meet current APCD standards and has not been used for spray painting operations for at least a year. An April 1994 environmental audit (CA ARNG, April 26, 1994) indicated that Camp SLO had recently submitted an application for a paint spray booth permit and recommended that the post commander limit painting operations to 1 gallon per day until the permit was approved.

Vehicle maintenance for heavy equipment and other vehicles in the engineering yard is carried out in Building 1330. Hazardous wastes, including motor oil, oily rags, and other vehicular wastes, are stored inside Building 1330 in 55-gallon drums pending transfer to OMS-19. Motor oil and antifreeze are stored in a small shed (Building 1331). This building features a solid concrete slab floor with no sump or drain.

Mr. Ron Hammond was interviewed regarding pesticide/herbicide management practices at Camp SLO. He is currently in charge of overseeing contractor pesticide/herbicide application and has worked at the engineering yard since 1982. Application was previously performed by engineering yard personnel. Pesticides and herbicides stored in Building 1343 and used at Camp SLO in the past reportedly include Round-Up, Oust, Princep Caliber 90, Monuron, and Dursban. Mr. Hammond was unaware of pesticide/herbicide handling practices prior to his employment at Camp SLO. He indicated that pesticide mixing operations were most likely performed in the engineering yard near the pesticide storage area.

### 3.8 FORMER LAUNDRY FACILITY (BUILDING 1200)

The Camp SLO laundry was formerly located in Building 1200 on Kansas Avenue. This large, wood-frame building is currently used as a warehouse by the San Luis Obispo County Department of General Services. Adjacent Building 1201 housed boilers that were associated with the laundry. It is likely that one or more fuel oil USTs were associated with Building 1201. However, no information regarding any tank removals at either Building 1200 or 1201 could be located. During an inspection of Building 1201 on June 29, 1995, Geosystem personnel observed a 3-inch diameter vent pipe near the

southwest corner of the building. The presence of the vent pipe indicates that USTs associated with the boilers may still be in place. A similar boiler facility was located in Building 389, which is now part of the CMC west facility. On September 22, 1987, three 8,000-gallon fuel oil USTs were removed from this boiler facility by CMC (SLOCHA, April 25, 1991). The similarities in size and construction suggest that Building 1201 probably had a similar number of tanks associated with it. No vent pipes were observed around Building 1200.

Given the size and capacity of Camp SLO during U.S. Army control, it is possible that a dry cleaning facility was operated on the base. However, Geosystem did not find any specific reference to a dry cleaning operation in the records available. Mr. Brian Duke noted that Building 1201 was similar in construction to the former dry cleaning facility at Camp Roberts. Mr. Bob Nielsen, a County employee for 24 years, works in the paint shop in Building 1200. He recalled the boilers being removed from Building 1201 but did not recall any UST removals. All military equipment was reportedly removed and Building 1200 was vacant when it was acquired by the County. Mr. Nielsen did not recall any mention of dry cleaning equipment in either Building 1200 or 1201. It is noted that a RCRA hazardous waste generator permit was issued for Camp SLO Building 1201 (Section 2.4).

### 3.9 FORMER AMMUNITION STORAGE AREA

Ammunition was stored at Camp SLO in a number of bunkers located south of Kansas Avenue (Figure 5). This area, also identified as Area 17, is enclosed by a chainlink fence. According to Camp SLO personnel, this area is currently used for military training exercises only and no ammunition is stored in the bunkers (Mr. Brian Duke, May 17, 1995). A small, separate area to the east of the main ammunition storage area is identified in historical maps as "chemical ammunition storage area." No information was available regarding the specific types and quantities of chemicals stored here. However, a U.S. Army Corps of Engineers (USACE) study indicated that "risk control and miscellaneous (vomiting, tear) agents" are believed to have been present at Camp SLO (Engineering-Science, Inc.,

July 10, 1992). Geosystem personnel did not observe any visible evidence of contamination at either the chemical ammunition nor the main ammunition storage areas.

### 3.10 POLYCHLORINATED BIPHENYLS (PCBs)

On January 30, 1985, the EPA conducted an inspection and determined that PCB-containing transformers awaiting disposal were improperly stored at Camp SLO. Two transformers were reportedly stored at Building 509 (Figure 3) and an unspecified number of transformers were stored in the "Camp SLO Storage Facility" (believed to be within the current or former USPFO storage areas located in the eastern portion of Motor Pool #7). Both of these locations reportedly did not meet the design requirements for a facility used to store PCB items for disposal. A notice of noncompliance identifying the above violations was issued by EPA on January 2, 1986. The EPA notice required corrective measures and requested a plan for soil sampling outside Building 509 and within the storage facility where PCB-containing transformers had been stored. It appears that the soil sampling and analysis requested by EPA was never conducted. The transformers stored at USPFO were reportedly stored inside a building with a concrete floor that was observed to be cracked. However, there was no mention of visible leakage in the inspection report. Between 1986 and 1987, the State of California, Office of the State Architect (OSA) conducted a PCB survey for the State Military Department. This survey identified a number of PCB-containing electrical transformers at Camp SLO. An OSA memorandum summarized the results of PCB sampling at Camp SLO (OSA, February 26, 1988). According to the memorandum, a total of 96 PCB-containing transformers had been identified at Camp SLO. Four of these transformers were identified as "leakers." Most of the transformers were also considered to be safety hazards due to improper mounting and lack of seismic shoring.

EPA conducted a follow-up investigation at Camp SLO on January 30, 1990. The inspection report indicated that no violations of federal PCB regulations were observed at Camp SLO at that time. The inspection report indicates that a total of 83 PCB-containing transformers from Camp SLO had been disposed of. Another 24 PCB-containing transformers were still

in service at that time and Camp SLO reportedly planned to dispose of these transformers before the end of 1990. No leaks were observed in the 24 transformers that remained in active service at the time (EPA, March 19, 1990).

### 3.11 ASBESTOS

In March 1990, OSA completed an asbestos-containing materials (ACM) study of 239 buildings within the current Camp SLO boundaries. Of the buildings investigated, OSA reported 124 structures containing at least one known type of ACM from a list of 19 ACM types found on the base. Some of these materials included pipe and thermal insulation, floor and ceiling tiles, wall and ceiling plasters, sheetrock or gypsum paneling, Transite siding and sheeting, tank and wire insulation, HVAC flex joints, fireproofing panels, and pipe fittings (OSA, March 1990).

To help categorize the levels of concern for each building containing ACMs, OSA established its own algorithm ranking system based on the immediate, short-term, or long-term health concern associated with each ACM found. Based on the survey, the following buildings were identified as being an immediate health concern:

- o OMS-19 Building 1328
- o Administration Building 904
- o Theater Building 900
- o Twenty-one general storehouse buildings.

The buildings that were listed as a short-term concern included:

- o Supply Building 700
- o Ten maintenance shop buildings
- o Quarters Building 623
- o Facility Engineer Shop Building 1337
- o Thirty-eight mess hall buildings
- o Theater Building 1572
- o Classroom Building 1173
- o Building 718 (latrine).

ACM surveys for Camp SLO buildings were conducted by EPA-accredited building inspectors using the identification, sampling, and analysis procedures established under 40 CFR, Part 763 (OSA, March 1990). A March 26, 1991 quarterly environmental update for Camp SLO stated that "all high-risk asbestos containing material with the exception of Building 900 has been abated." The update stated that Building 900 was scheduled for abatement in fiscal year 1991. An October 1, 1993 environmental update indicated that asbestos abatement of a hot water heater in Building 504 was scheduled.

A number of buildings and hutments at Camp SLO feature potentially asbestos-containing roofing shingles and siding. These ACMs are not considered friable and do not appear to pose a significant or immediate threat to building occupants. Some of the shingles are in relatively poor condition and have come loose from these buildings.

### 3.12 RANGE AND IMPACT AREAS

Throughout its history as a military installation, Camp SLO has featured various weapons firing ranges, impact areas, and training areas. Unexploded ordnance (UXO) from former military activities at the base has been found within all of the current CA ARNG ranges on the post. Explosive ordnance has also been found on property currently occupied by Cal Poly, El Chorro Regional Park, SLO County Board of Education, and the U.S. Forest Service. UXO discovered in these areas has included mortar and rocket rounds, hand and rifle grenades, anti-tank mines and fuses, phosphorous grenades, and various artillery rounds. UXO used recently at Camp SLO by CA ARNG includes light anti-tank weapon (LAW) rounds, hand grenades, C-4, M-31, and M-79 (USACE, April 3, 1995).

Several areas within the current and former Camp SLO boundaries have been swept for UXO. In particular, most of the inactive range areas reportedly have been swept for UXO, except for a 250-acre portion of El Chorro Regional Park. However, ordnance is repeatedly found in previously swept areas. This is apparently due to erosion of the overlying soil, which exposes previously buried ordnance (USACE, April 3, 1995). During August 1994, much of the northernmost Camp SLO property and adjacent U.S. Forest Service land was

burned during a large brush fire. During the fire, numerous explosions were reportedly heard at Camp SLO and neighboring properties. These explosions were presumed to be UXO that exploded as a result of exposure to the intense heat of the fire. In addition to destroying much of the natural vegetation cover, the fire exposed the steep mountain slopes to unusually intense erosion. It is possible that this erosion will expose more UXO.

A risk assessment for ordnance and explosive waste (OEW) sites at Camp SLO was prepared by Engineering Science (Engineering Science, July 10, 1992) as part of the Defense Environmental Restoration Program (DERP) study for Camp SLO. The OEW risk assessment is based on documented evidence pertaining to confirmed or potential unexploded ordnance discoveries. The risk assessment is composed of two site-specific factors -- hazard severity and hazard probability. For Camp SLO, both the hazard severity and probability were determined to be in the highest possible category. Hazard severity was designated "catastrophic" primarily due to the presence of hand grenades, artillery rounds, white phosphorus containers, and "risk control" chemical agents such as tear gas. Hazard probability was designated "frequent" due to the presence of many nearby structures, including educational facilities, uncontrolled access to certain OEW areas, and site dynamics such as excessive soil erosion and increasing land development. These two factors are compared and used to assign a risk assessment code (RAC) to the site. An RAC of 1 was assigned to Camp SLO. RAC 1 is defined as "Imminent Hazard-Emergency action required to mitigate the hazard or protect personnel." The OEW risk assessment is included as Appendix D to this report.

Numerous small arms firing ranges have been operated throughout Camp SLO's history as a military installation. The five currently active small arms ranges are located along the north side of Range Road at Camp SLO. Former ranges were present north of Pennington Creek Road on El Chorro Regional Park and Cal Poly property and north of Gilardi Road on Cal Poly and DFG property. The DFG continues to operate a public firing range on former Camp SLO property. Environmental hazards at these ranges include lead projectiles within the upper few feet of soil and potentially live small arms ammunition.

### 3.13 INCINERATOR

A large garbage incinerator, identified as Building 1213, is located at Camp SLO. Construction plans for this incinerator were reviewed at Camp SLO by Geosystem personnel. The plans indicate that the incinerator is a "forced-draft air" type and was probably constructed in the late 1920s. The time of construction suggests that the incinerator was built by CA ARNG, as it predates U.S. Army operation of Camp SLO. Geosystem personnel inspected the incinerator on June 29, 1995. No evidence of any surface contamination was observed in or around the incinerator. No evidence of any fuel-fired burner system was observed, which is consistent with the construction plans reviewed. The dates of operation for the incinerator are unknown. No evidence of landfilling at Camp SLO prior to the 1940s has been found. The presence of an incinerator on the base as early as the late 1920s suggests that CA ARNG may have burned the majority of the solid wastes generated at Camp SLO. No information was available regarding the disposal of noncombustible waste or ash by CA ARNG.

### 3.14 WASTEWATER TREATMENT FACILITY

A wastewater treatment facility, reportedly constructed by the U.S. Army in 1940, is located in the southwest corner of Camp SLO. The facility has been operated by CMC since 1961. Discharge from the facility is regulated by the RWQCB under National Pollutant Discharge Elimination System Permit No. CA04447856. The facility is permitted to handle up to 1.2 million gallons per day of designated domestic sewage and industrial waste (Natec, April 6, 1995). In addition to Camp SLO, the facility currently treats wastewater from CMC, Cuesta College, El Chorro Regional Park, and various County facilities (CMC, February 1995).

The area served by the facility includes approximately 13,000 acres with a projected 1997 population of 16,250. Of the 13,000 acres within the service area, approximately 11,700 are public lands, with the remainder being used for private agriculture. The original plant design consisted of a manual bar screen at the inlet, two primary clarifiers, manual sludge-drawing, four low-capacity trickling filters, one secondary clarifier, and a chlorine contact

chamber with a 30-minute detention time. Digested sludge was pumped to six sand and gravel sludge drying beds. Many improvements have been made to the plant during the past 20 years. The plant is required to maintain a minimum outflow of 0.5 cubic feet per second to support fish habitat in Chorro Creek. Flow in excess of this amount is either discharged to Chorro Creek or is reclaimed by Cal Poly for irrigation of university-owned farmland (CMC, February 1995).

Geosystem personnel interviewed Mr. Michael Valverde on June 15, 1995 regarding operation of the sewage treatment plant. Mr. Valverde has been the plant operations manager since 1983. There reportedly have been no environmental problems at the plant related to discharge from Camp SLO during the last 12 years of operation. In the past, some sludge was reportedly disposed on land adjacent to the sewer plant. Some sludge has also reportedly been used for landscaping at CMC or given to Cal Poly for use as fertilizer. Mr. Valverde indicated that CMC is responsible for maintenance and operation of all sewer mainlines at Camp SLO and CA ARNG is responsible for all lateral sewer lines.

### 3.15 LEAD-BASED PAINT

Most of the structures present at Camp SLO were built during the 1940s. During this time period, lead-based paint was commonly used on both interior and exterior building surfaces. The use of lead-based paint in most structures was subsequently banned by EPA because of potential health risks. Geosystem is not aware of any lead-based paint studies performed at Camp SLO. Due to the age of the structures at Camp SLO, however, it is considered likely that some contain lead-based paint.

### 3.16 INACTIVE MINES

In 1870, significant chromite deposits were discovered in the main ridge of the Santa Lucia Range between Cuesta Pass and Morro Creek. These deposits were mined in the late 1800s and reportedly were also actively mined during World Wars I (1916 to 1920) and II (1942 to 1945). The chromite deposits of the region are reportedly not rich or large enough to

be economically mined during "normal" times. Past production occurred either before the discovery of large foreign deposits or during "war emergency" periods (USGS, 1944).

In December 1993, the RWQCB issued a report on a study of inactive metal mines in the northern quarter of San Luis Obispo County. The study was conducted under the direction of Mr. David Schwartzbart of the RWQCB. A total of 217 mines were inventoried, of which 89 were considered to pose some environmental concern. The study identified approximately 14 small prospect mines, as well as 3 larger mines, located within the current Camp SLO boundary. The three larger mines are the La Trinidad, Pick and Shovel, and Primera mines. The La Trinidad mine is located on current Camp SLO property, near the head of the west branch of Chorro Creek. The La Trinidad mine consists of open pits and underground workings. During early periods of production and in 1917/1918, the La Trinidad Mine was reportedly one of the larger producers in the area. The portals to the underground workings are inaccessible due to caving (USGS, 1944). The Pick and Shovel mine is also located on current Camp SLO property, near the head of the central branch of Chorro Creek, and is entirely an underground mine developed on several levels. The Pick and Shovel mine is reportedly one of the oldest mines in the area, having produced a considerable quantity of chromium ore between 1870 and 1890 (U.S. Department of Agriculture, Soil Conservation Service, April 1994). At least 6,000 short tons of ore were produced from the Pick and Shovel Mine between 1917 and 1920. Activity at the mine after World War I was reportedly mostly exploratory in nature (USGS, 1944). The Primera and New London mines are also located within the current Camp SLO boundary. Little information regarding the Primera mine is available. The New London mine is one of the oldest mines in the region. An unknown quantity of ore was produced before 1900 and 3,500 long tons of ore were shipped from the mine during World War I.

The Castro mine and a number of other smaller mines and prospects are located within the historical Camp SLO boundary. The Castro mine workings reportedly consist of four large open cuts, several bulldozer trenches, and four levels of underground workings. The bulldozer trenches and underground workings were made during exploratory work carried

out by the U.S. Bureau of Mines in the Fall of 1941 (USGS, 1944). It is estimated that 6,000 long tons of ore were removed from the Castro Mine between 1870 and 1944. A fifty ton concentrating mill was constructed at the site and operated during World War I. No specific information was available regarding operation of the smaller mines. The primary material produced from these mines was reportedly chromium ore. Other metals, including copper, iron, and nickel, have also been produced from some of the mines (RWQCB, December 1993).

Of the mines that were classified by the RWQCB as "potential polluters," only 12 were located within the Chorro Creek watershed (RWQCB, December 1993). Of these 12 mines, 5 are located within the current Camp SLO boundary and an additional 5 are located within the historical Camp SLO boundary. As part of its study, sediment from Chorro Creek was sampled and analyzed for total metals by the RWQCB. The analyses indicated that the sediment samples contained elevated concentrations of total chromium, nickel, and magnesium. Also, water samples collected from Chorro Creek contained higher levels of antimony, copper, nickel, and nitrogen than samples from three other potentially impacted watersheds. Because the Chorro Creek area mines are derived from serpentinized ultramafic mineral deposits and not from sulfide deposits, there is no significant threat of acid mine drainage occurring in this region. Therefore, heavy metals existing in tailings from these mines are expected to remain in an insoluble state (RWQCB, December 1993).

## 4.0 PATHWAY AND ENVIRONMENTAL HAZARD ASSESSMENT

This section presents an evaluation of potential contaminant migration/exposure pathways in ground water, surface water, air, and soil.

### 4.1 GROUND WATER

The ground water pathway at Camp SLO is discussed in the following sections in terms of Camp SLO's geologic setting, hydrogeologic conditions, ground water use, the potential impact of hazardous substances on ground water, and migration pathway evaluation.

#### 4.1.1 Geologic Setting

Camp SLO is located in the southern end of the Santa Lucia Range, a portion of the Coast Ranges Physiographic Province of California. The northwest-trending Santa Lucia Range consists predominantly of a complex metavolcanic and metasedimentary terrain assigned to the Jurassic-age Franciscan Formation. Bedrock assemblages exposed locally in the adjacent hills include graywackes, greenstones, cherts, blue schist facies, conglomerate, and serpentinite. These units have been pervasively sheared and are a part of the Franciscan melange, characteristic of the Salinian structural block in the westerly Coast Ranges. Collectively, the Coast Ranges are part of the Circum Pacific Orogenic Belt where large blocks have been deeply subducted, metamorphosed, sheared, and then brought back to the surface by transform faulting processes.

The developed portion of Camp SLO is centered along the Chorro Creek valley, about 7.1 miles east of the coastline. Chorro Creek has eroded and flowed westward across the Santa Lucia Range as it has been uplifted. The drainage course projects parallel to the regional northwest-trending structural fabric. The fabric is well expressed, not only in the regional drainages, but also in the uplands where numerous northwest-trending folds and faults have been identified. The Chorro Creek valley is up to 1 mile wide in the site vicinity and is mantled with alluvium derived from the adjacent uplands. The alluvium consists mainly of unconsolidated sandy and silty interlayers and lenses that extend to depths of about 100 feet.

Bedrock underlying the alluvium consists of the Franciscan Formation and is similar to the rock types exposed in the adjacent hills.

#### 4.1.2 Hydrogeologic Conditions

Much of Camp SLO is situated in the Chorro Creek (ground water) basin. This basin consists of the unconsolidated alluvial deposits associated with Chorro Creek and its tributaries. As such, the basin is narrow and irregular in shape, extending from just east of Camp SLO to the Pacific Ocean at Morro Bay.

Ground water in the Chorro Creek basin occurs under unconfined conditions in a relatively shallow zone of saturated alluvium overlying Franciscan Formation bedrock. The Franciscan Formation bedrock is fractured and saturated but yields little water. Consequently, it is generally considered to define the boundaries of the ground water basin (Staal, Gardner & Dunne, Inc., June 1989). Ground water in the alluvial deposits generally flows to the northwest, parallel to the axis of Chorro Creek, before discharging into the Pacific Ocean near Morro Bay. Recharge to the basin is generally attributable to the infiltration of precipitation. Ground water in the basin has been developed locally for domestic, municipal, and agricultural water supply purposes. Three water supply wells are located within the historical boundary of Camp SLO (Section 4.1.3).

As noted above, the Franciscan Formation bedrock yields relatively small quantities of water; however, a few water supply wells have been completed in it. Where the Franciscan Formation outcrops in the flanks of the valleys, numerous springs have been identified. These springs are not considered to be directly related to the alluvial aquifer; however, it is reasonable to assume that below the ground surface, there is hydraulic communication between the water in the fractured bedrock and that in the overlying/adjacent alluvium.

#### 4.1.3 Ground Water Use

Three water supply wells, Wells No. 1, 2, and 3, are present within the current and former boundaries of Camp SLO. Well No. 1 is located at the County Government Center (near

former Building 609) and Wells No. 2 and 3 are located within the current Camp SLO cantonment area near Buildings 1336 and 1526, respectively. The locations of Wells No. 1, 2, and 3 are shown in Figure 3. All three wells were installed prior to 1949 and are used to supplement the water produced at the Chorro Reservoir water treatment plant. Wells No. 1 and 3 are reportedly used only intermittently. Well No. 2 is reportedly very shallow and is rarely used due to insufficient yield (Mr. Bill Cook, June 1995). Well No. 3 can reportedly yield approximately 150,000 gallons per day (about 104 gallons per minute). Water produced by the three wells is chlorinated at the wellhead and added to the water supply without further treatment or filtration. Water quality from all three wells is reportedly very good; however, recent high bacteria counts have reportedly resulted in temporarily taking Well No. 3 out of service (Mr. Bill Cook, June 1995). During 1989, Wells No. 1 and 3 provided 55 and 108 acre-feet of water, respectively, accounting for approximately 5 and 10 percent of the drinking water supplied by CMC (Ecology and Environment, Inc., May 10, 1991).

The County Engineering Department provided data on Wells No. 1, 2, and 3. Well No. 1 features a 12-inch diameter casing and its total depth is 50.7 feet below grade. A pumping test conducted in September 1968 showed that the well maintained a pumping rate of 500 gallons per minute (gpm) after 24 hours. No construction or pump test data are available for Wells No. 2 and 3. Water level data for the three wells are summarized below.

<u>Well No.</u>	<u>Dates Measured</u>	<u>Depth to Water (feet)</u>	
		<u>Minimum</u>	<u>Maximum</u>
1	1971 - 1993	3.60	39.70
2	1977 - 1993	19.30	46.50
3	1977 - 1993	20.50	54.60

The data indicate that water levels fluctuate significantly seasonally and from year to year (Mr. Glenn Britton, County of San Luis Obispo, Engineering Department, July 25, 1995).

A Ground Water Network Data Base Search was requested from the National Groundwater Information Center in Dublin, Ohio to provide information on the population served by various drinking water sources within a given zip code. Camp SLO has its own zip code (93403) for mailing purposes; however, the database does not provide specific data for zip codes that represent a "large business or post office box." Accordingly, the database was queried for the zip code 93405, which "surrounds" Camp SLO. This zip code includes the western portion of the city of San Luis Obispo, eastern Los Osos Valley, and most of the Chorro Creek basin. The zip code extends west to the Morro Bay city limits. A summary of the data provided by the search is presented below:

1990 census population	30,375
Total number of households	8,441
Households served by public or private utility	7,971
Households served by private well(s)	432
Households served by other sources	38

Source: National Ground Water Information Center, July 7, 1995

Most of the households within this zip code are located within the western portion of the city of San Luis Obispo. Drinking water for the city of San Luis Obispo is reportedly a combination of surface water and ground water. However, none of the municipal production wells are located within the Chorro Creek basin (Ecology and Environment, May 10, 1991).

Data on water wells within approximately 1 mile of Camp SLO was obtained from the County Engineering Department and the California Department of Water Resources (DWR) and are summarized in Table 7. In addition to the wells included in Table 7, the City of Morro Bay reportedly operates a number of municipal water supply wells at the western end of the Chorro Creek basin, several miles downgradient of Camp SLO. In brief, the Chorro Creek basin is a major source of water for most of the population between Camp SLO and the coast. It is noted that the lower portion of the basin reportedly has been in overdraft for many years, resulting in sea water intrusion near the coast.

#### 4.1.4 Potential Impact of Hazardous Substances on Ground Water

Hazardous substances released to soil have the potential to migrate into ground water. Hazardous substances impacting ground water have the potential to raise the concentrations of dissolved constituents above the corresponding applicable MCLs and/or ALs, rendering the water unsuitable for drinking. The wells most likely to be impacted by possible releases to ground water are the three on-site water supply wells and private wells located immediately downgradient of Camp SLO. Releases with the highest potential for impacting ground water are those occurring in the subsurface from landfills or USTs. Other possible release mechanisms would include leaks from the sewer lines located throughout Camp SLO or significant surface spills.

#### 4.1.5 Migration Pathway Evaluation

None of the known releases to ground water at Camp SLO appear likely to migrate off site, i.e., beyond the current boundary of Camp SLO. Known releases from USTs, which include primarily diesel fuel or fuel oil, are limited in areal extent and have not exceeded any MCLs or ALs. The toluene concentrations detected at the Kansas Avenue landfill were well below the corresponding AL. Production Well No. 1, although located adjacent to the Kansas Avenue landfill, produces water of good quality and has not shown detectable concentrations of VOCs. VOC concentrations detected in wells downgradient of the Sutter Avenue landfill exceeded the MCL for carbon tetrachloride. However, the concentrations are very low and VOCs released from the Sutter Avenue landfill do not appear to pose a significant threat to on-site or off-site water supply wells.

#### 4.2 SURFACE WATER

The surface water pathway at Camp SLO is discussed in the following sections in terms of Camp SLO's hydrologic setting, surface water bodies, surface water use, potential impact of hazardous substances on surface water, and migration pathway evaluation.

#### 4.2.1 Hydrologic Setting

Camp SLO, as defined by its current boundary, lies entirely within the Chorro Creek drainage basin. Chorro Creek originates on the southwest face of Cuesta Ridge, in the northeastern corner of Camp SLO. It flows through Chorro Reservoir, located on Camp SLO property 0.75 miles northeast of the CMC east facility, west-northwest through the cantonment area, and discharges into Morro Bay approximately 6 miles to the northwest. Major tributaries flowing into Chorro Creek within the Camp SLO boundaries are Dairy Creek and Pennington Creek. Within the Camp SLO boundaries, Chorro Creek is an intermittent stream, which is usually dry during the summer season.

Small areas within the former boundaries of Camp SLO are within the Tassajara Creek and Stenner Creek watersheds. The former areas of Camp SLO within these watersheds were not developed but may have been within one or more firing fans.

#### 4.2.2 Surface Water Bodies

Surface water bodies at Camp SLO include Chorro Creek and its tributaries and Chorro Reservoir, which was formed when the U.S. Army dammed Chorro Creek in the 1940s. Chorro Reservoir is located near the eastern boundary of Camp SLO, about 1.3 miles northwest of Highway 1 and about 1 mile north-northwest of the CMC. Chorro Reservoir is fed by Chorro Creek and by two smaller tributaries. During U.S. Army operation of Camp SLO, Chorro Reservoir was also fed by an aqueduct that delivered water from the Salinas Dam (Santa Margarita Lake). Due to the smaller population now served by the system, water is no longer delivered through this aqueduct. Water from Chorro Reservoir is treated at the CMC filtration plant and constitutes the water supply for CMC, Camp SLO, Cuesta College, and adjacent facilities. Reportedly, the construction of Chorro Reservoir in the 1940s reduced the downstream flow in Chorro Creek to 2.78 cubic feet per second (cfs), although it is not clear exactly where downstream of the reservoir this measurement was taken. This flow rate was reportedly insufficient to support the fish population that would normally inhabit Chorro Creek. Currently, CMC is required to discharge even less, 1 cfs, from Chorro Reservoir in an effort to maintain flow through Chorro Creek. Ecology

and Environment, Inc. has reported (May 10, 1991) that the 1 cfs release generally disappears into the bedrock fractures within about 300 yards of the dam. In addition, a minimum flow of 0.5 cfs is discharged into Chorro Creek from the wastewater treatment plant in an effort to support steelhead trout (CMC, February 1995). During the dry season, some stagnant standing water is present within the creek bed at Camp SLO.

#### 4.2.3 Surface Water Use

CMC operates a water filtration plant at Chorro Reservoir. This facility treats water from Chorro Creek and its tributaries upstream of the reservoir using filtration and chlorination. Water from the plant is used to supply CMC, Camp SLO, Cuesta College, County facilities, and other adjacent facilities. According to Mr. Bill Cook, the CMC filtration plant operator, the plant has a maximum pumping capacity of about 3 million gallons per day and supplies water to an estimated maximum population of 25,000. The water supply for Camp SLO and adjacent facilities is also supplemented by water from Whale Rock Reservoir, located about 12 miles northwest of Camp SLO near the town of Cayucos.

Another filtration plant is located on Stenner Creek Road, approximately 1 mile east of the Chorro Reservoir plant. This facility reportedly provides drinking water to the city of San Luis Obispo. It is noted that this facility is located within the Stenner Creek, rather than Chorro Creek, watershed. Only a very small, undeveloped portion of historical Camp SLO lies within the Stenner Creek watershed.

Because of the low flow rate, recreational fishing in Chorro Creek is very limited. At most, the total fish catch for Chorro Creek would be several hundred pounds during a wet year. During drought years, it is considerably less (Ecology and Environment, May 10, 1991).

#### 4.2.4 Potentially Sensitive Receptors

A number of sensitive species and habitats exist at Camp SLO. Information on these potentially sensitive receptors was obtained from the Camp Roberts Environmental Office and from the Natural Diversity Database maintained by the DFG. Table 8 presents a list

of sensitive species known to inhabit Camp SLO. A number of other sensitive species found in San Luis Obispo County may also exist at Camp SLO but have not actually been observed. Sensitive species information is included as Appendix E to this report.

Chorro Creek discharges into Morro Bay, which has been proposed for inclusion in EPA's National Estuary Program by the Morro Bay Interagency Task Force (Ecology and Environment, May 10, 1991). There are no known surface water intakes on Chorro Creek downstream from Camp SLO (Ecology and Environment, May 10, 1991). Camp SLO receives drinking water from the CMC Chorro Reservoir plant. The only potential releases identified within the upper Chorro Creek watershed upstream from Chorro Reservoir are UXO and the abandoned mines. Drinking water from the CMC plant is routinely tested for hazardous constituents. There have been no reported instances of contaminants related to UXO or abandoned mines in the water extracted from Chorro Reservoir. Sediments in Chorro Reservoir, as elsewhere in the Chorro Creek basin, contain elevated concentrations of chromium and other metals. However, the metals occur in an insoluble state and elevated concentrations of dissolved metals have not been detected in the waters of Chorro Creek (Section 3.16).

#### 4.2.5 Potential Impact of Hazardous Substances on Surface Water

Surface releases of hazardous substances have the potential to migrate into surface water bodies directly or indirectly through storm drains. In addition, contaminated ground water has the potential to discharge into surface streams when the water table is high. Contaminants entering surface water bodies could raise constituent levels above applicable MCLs and ALs, rendering the water unsuitable for drinking. In addition, plant and animal populations downstream of the source area could be exposed to contaminants.

#### 4.2.6 Migration Pathway Evaluation

There have been no known releases of hazardous substances into surface water bodies at Camp SLO. Known releases to ground water are not believed to pose a threat to surface water bodies at this time. Waste water from Camp SLO receives primary and secondary

treatment at the CMC waste water treatment plant. The secondary treatment process includes chlorination and dechlorination (CMC, February 1995). CMC has not reported any problems related to waste discharges from Camp SLO. The only known surface water intake on Chorro Creek is the Chorro Reservoir filtration plant operated by CMC. There are no known or suspected hazardous substance releases upstream of the Chorro Reservoir intake that could adversely impact water quality. Sediments containing elevated concentrations of chromium and other metals are present within the Chorro Creek basin. Some of these sediments may be derived from mine tailings; however, there is no evidence that these sediments have adversely impacted surface water quality in or downstream of Chorro Creek. There is no evidence that past or present operations at Camp SLO have adversely impacted Chorro Creek or other surface water bodies.

#### 4.3 SOIL

There are a number of confirmed and potential sites within the current and former Camp SLO boundaries where hazardous materials may have been released to soil. Confirmed releases to soil include at least 10 UST sites, the Sutter Avenue landfill, the hutment heating oil distribution systems, UXO located in the current and former range areas, and an oil spill in the USPFO vehicle storage area. Potential releases to soil are associated with pesticide and paint handling areas in the engineering yard; Story Park, Kansas Avenue, and Pennington Creek landfills; and former PCB-containing transformer storage sites at USPFO and Building 509.

Sampling results from UST sites investigated by Geosystem are included in Appendix C. Remediation at ten UST sites is being considered by Geosystem and the regulatory agencies; however, the documented soil contamination does not pose an immediate or serious threat to human health and/or the environment. There have been no soil sampling activities around the remaining hutments, engineering yard, USPFO, Building 509, or the range areas. The confirmed and potential releases at the four landfills have been investigated by Geosystem and are not believed likely to pose a significant threat to human health and/or the environment.

#### 4.3.1 Population Distribution

The on-site population at Camp SLO varies greatly due to the intermittent nature of training operations. At the time of the PA investigation, there were only two permanent residents at Camp SLO. The permanent worker population is about 300, of which 40 are CA ARNG employees. USPFO has 160 permanent employees, and the remaining military and non-military tenants employ an additional 100 workers (Ms. Sylvia Brown, July 18, 1995). However, the transient population at Camp SLO can be as high as 2,000 during busy training periods, particularly during the summer months. For the period 1991 through 1993, the average troop population at Camp SLO during active use days was 700. A population change report was ordered from Claritas, Inc., of Ithaca, New York. The report (Claritas, Inc., June 23, 1995) shows populations located within 1-, 2-, and 4-mile radii of a fixed point. The approximate center of the cantonment area was selected as the center point for the survey. Populations are summarized below:

<u>DISTANCE</u>	<u>1990 CENSUS POPULATION</u>	<u>ESTIMATED 1995 POPULATION</u>
0 - 1 mile	71	74
1 - 2 miles	440	453
2 - 4 miles	10,789	10,555

SOURCE: Claritas, Inc., June 23, 1995.

The significantly larger population found in the 2- to 4-mile range is due to the inclusion of the northernmost part of the city of San Luis Obispo. CMC, located adjacent to Camp SLO, has an estimated inmate population of about 7,500 (Mr. Bill Cook, June 1995). Cuesta College has no permanent residents but supports a nonresident student population of about 8,000. The average daily attendance at Cuesta College is about 5,500 (Mr. Pete Pedroni, June 21, 1995).

#### 4.3.2 Potentially Sensitive Receptors

There are no schools, day care facilities, or residences within 200 feet of known or suspected releases to soil. Cuesta College operates a small day care/early childhood development center, near the CCC area, in Buildings 1518-1520. This facility is located approximately 1,600 feet north of the Sutter Avenue landfill. The County operates educational facilities along Pennington Creek Road. These facilities are approximately 750 feet northeast of the Pennington Creek landfill. Cuesta College is located immediately northwest of the main cantonment area. The nearest off-site residence is located 900 feet southeast of the Sutter Avenue landfill. The County animal control facility is situated directly over the Kansas Avenue landfill.

#### 4.3.3 Potential Impact of Hazardous Substances on Soil

Hazardous substances released to soil pose a potential threat to persons on or near the site who may come into contact with exposed wastes or areas of suspected contamination. Access to potentially contaminated sites is generally unrestricted. Potential routes of exposure include direct skin contact, ingestion of soil, and migration of the hazardous substance(s) in gaseous or particulate form. Contaminants in soil also can potentially leach into ground water or surface water.

#### 4.3.4 Migration Pathway Evaluation

Soil contamination resulting from UST leaks is covered by either uncontaminated soil, native vegetation, or pavement. The potential for direct exposure to contaminated soil would occur only during excavation for remediation, construction, or subsurface utility work. As shown in Appendix C , the majority of the UST leaks involved heavier, nonvolatile hydrocarbons such as diesel and fuel oil. Consequently, the potential for these compounds to migrate in gaseous or vapor form is negligible.

Wastes buried in the four landfills at Camp SLO are covered by soil and native vegetation, minimizing the risk of direct exposure to waste materials or potentially impacted soil. Soil contamination at the Sutter Avenue and Kansas Avenue landfills has not been directly

evidenced but rather is inferred due to the presence of impacted ground water beneath the landfills. A final cover will be constructed over the waste disposal area at the Sutter Avenue landfill during the summer of 1996. The final cover is expected to significantly reduce the risk of direct exposure to waste materials at the landfill and should greatly reduce the potential for leaching.

Near-surface soils around the remaining hutment areas at Camp SLO have potentially been impacted by releases of diesel and/or heating oil. These areas are typically unpaved and feature either a gravel or native soil cover. It is noted that some of the hutments are still used as temporary housing for military personnel. Other potential areas of near-surface soil contamination include pesticide and paint handling/storage areas in the engineering yard, former PCB-containing transformer storage areas at USPFO and Building 509; and a number of former and existing grease racks, wash racks, and vehicle maintenance areas within the current and former boundaries of Camp SLO.

#### 4.4 AIR

Geosystem personnel did not observe any significant releases of hazardous substances to air at Camp SLO. APCD does not have any record of citizen complaints or incidents related to potential releases of hazardous substances to air at Camp SLO.

##### 4.4.1 Potential Air Contaminants

Potential air contaminants at Camp SLO include methane gas and VOCs from the landfills, tear gas from training exercises, paint and solvent vapors, and compressed gases stored in cylinders. Tear gas used at Camp SLO for military and law enforcement training purposes is generally released inside an enclosed structure. Personnel potentially exposed to tear gas during training exercises are outfitted with appropriate protective gear. Painting operations are generally limited to hand-painting and only a limited volume of paint is used at any one time. The paint spray booth located in Building 1341 is not currently used for spray painting operations. Gases stored in compressed gas cylinders at Camp SLO include argon, oxygen, nitrogen, acetylene, Freon, and chlorine. A 1,000-gallon propane tank is located in the CDF

yard near Building 961. Quantities of other compressed gases are generally limited to small, portable cylinders.

#### 4.4.2 Migration Pathway Evaluation

Geosystem conducted landfill gas sampling at the Story Park, Kansas Avenue, and Pennington Creek landfills on January 31 and February 1, 1995. The data did not indicate significant methane concentrations in soil gas at these landfills (Appendix B). A landfill gas study performed at the Story Park and Sutter Avenue landfills in 1988 did not show significant methane or VOC concentrations within or around these two landfills (USAEHA, December 20, 1989). Documented UST releases at Camp SLO primarily involve diesel fuel or heating oil. These substances have low vapor pressure and vapors are unlikely to be released to air in significant quantities. Open burning or incineration of trash is no longer practiced at Camp SLO.

## 5.0 FINDINGS AND RECOMMENDATIONS

Based on the information gathered and evaluated during the PA, there are 14 confirmed sites within the historical boundary of Camp SLO where hazardous materials have been released to the environment, including 10 individual UST sites. The PA data also indicate many other sites where the potential exists for hazardous material releases. At most of these potential sites, the materials that may have been released are petroleum, oil, and lubricants (POLs) that are probably not subject to regulation under CERCLA. Some of the potential sites may, however, warrant further investigation under state and/or local regulatory agency programs.

The following sections briefly summarize conditions at individual or groups of confirmed release sites and present Geosystem's recommendations pertaining to further investigation and/or remediation. Summaries of conditions are also presented for those potential release sites at which additional investigations may be warranted.

### 5.1 CONFIRMED RELEASE SITES

Sites at which hazardous materials releases have been confirmed are the Sutter Avenue landfill, the Kansas Avenue landfill, the hutment heating systems in Area F, the former firing ranges and firing fans, and a number of UST sites.

#### 5.1.1 Sutter Avenue Landfill

The Sutter Avenue landfill is an inactive Class III landfill located on the southern border of Camp SLO. The landfill is believed to have been operated by the CA ARNG from around 1970 to 1985 using the trench and cover method. Some of the waste disposal trenches reportedly encountered ground water, raising the possibility that disposed wastes may be in direct contact with ground water. The wastes disposed of in the Sutter Avenue landfill were primarily municipal-type waste and construction debris. In some area, the interim earthen cover allows water to pond over and infiltrate the disposed wastes. In response to a request from the RWQCB, which regulates the landfill via waste discharge

requirements, CA ARNG is currently implementing a remedial grading program to remedy this condition.

Ground water beneath and hydraulically downgradient of the Sutter Avenue landfill has been impacted by 1,4-dichlorobenzene, CTC, and chloroform. Although very low, the concentrations of these constituents in some wells are above the corresponding MCLs. A final closure and postclosure maintenance plan has been prepared and CA ARNG plans to construct an engineered final cover over the landfill in the summer of 1996. The final cover is expected to minimize the infiltration of surface water through the disposed waste and will constitute the corrective action required under state regulations.

Because of the nature of the source and the types of contaminants involved, the Sutter Avenue landfill is potentially subject to CERCLA. However, investigations at the landfill are ongoing and are already well beyond the SI phase. In addition, final closure/corrective action is imminent. Accordingly, Geosystem does not recommend any additional investigations or response measure over and above those already planned or in progress.

#### 5.1.2 Kansas Avenue Landfill

The Kansas Avenue landfill is a closed solid waste disposal facility located immediately south of Highway 1, on land now owned by the County. The landfill is believed to have been operated by the U.S. Army from around 1941 to around 1956, using the trench and cover method. There are few records pertaining to the types of waste disposed of in the Kansas Avenue landfill; however, municipal-type waste is the most likely. During World War II, a comprehensive recycling program reportedly precluded the disposal of scrap metal and other recyclables. After the war, however, some paint and lubricant containers and dry cell batteries were reportedly disposed. Sometime between May 1975 and 1977, the County constructed an animal shelter directly over the eastern edge of the landfill. Part of the subsequently constructed County Sheriff center overlies the northeast corner of the Kansas Avenue landfill, although none of the County Sheriff buildings directly overlie the landfill. Note that in the past, the Kansas Avenue landfill has been referred to as the County landfill

or as the Animal Shelter landfill. The landfill currently features an uneven earthen cover of unknown thickness. Surface water very likely ponds over, and infiltrates into, the disposed wastes.

Subsurface investigations at the Kansas Avenue landfill have included the installation of ground water monitoring wells and suction lysimeters, soil sampling and analysis, soil gas sampling and analysis, and surface water sampling and analysis. The only indication that waste disposal operations at the Kansas Avenue landfill may have impacted the surrounding environment is the reported presence of toluene in ground water samples collected from Wells MW-3 and MW-4. The reported concentrations of 0.0013 and 0.0029 mg/ℓ are well below the state AL for toluene of 0.100 mg/ℓ. Note that only one round of ground water monitoring has been conducted to date. Geosystem believes additional monitoring should be conducted. There is a water supply well, Well No. 1, immediately north of the Kansas Avenue landfill. Well No. 1 contributes to the water supply for Camp SLO, CMC, and other facilities. Water quality samples from Well No. 1 are collected and analyzed on a frequent basis. Neither toluene nor any other organic constituent has been detected in any of the samples. Note that ground water has been measured as shallow as 1 foot below the ground surface in some areas of the landfill. Based on this shallow water table, it is likely that disposed wastes are beneath the water table, at least during seasonally high water table conditions.

Because of the nature of the source, the Kansas Avenue landfill is potentially subject to CERCLA. However, investigations at the site are already well beyond the SI stage and additional investigations will likely be required by the RWQCB based on the reported presence of toluene in ground water. Also, CA ARNG is considering additional soil gas sampling and the installation of methane gas detectors in the animal shelter. Specific recommendations pertaining to the Kansas Avenue landfill are as follows:

- o Conduct at least two more rounds of ground water monitoring to verify the presence of toluene and establish a ground water quality history.

- o Because of the very shallow depth to ground water, Geosystem believes there is little benefit to installing gas monitoring probes in and around the landfill. Accordingly, Geosystem recommends these be deleted from the scope of any additional investigations. (Note that the gas monitoring probes were proposed before the water table was measured at about 1 foot below grade.)
- o Formally notify the County that the Kansas Avenue landfill is located on its property and make County personnel aware of the potential for the accumulation of methane gas in County buildings constructed over the landfill.
- o Proceed with the installation of continuous methane gas detectors in the animal shelter constructed over the landfill.
- o Through institutional controls, prevent the construction of additional buildings directly over the landfill.
- o Continue to monitor for water quality in Well No. 1, paying particular attention to the possible presence of dissolved toluene.

Assuming the additional monitoring does not indicate a more significant impact on ground water, corrective action may not be warranted based solely on the low concentrations of toluene. However, if the opportunity presents itself in the future, it may be prudent to regrade the landfill area to promote positive drainage, prevent ponding, and, hence, minimize the infiltration of surface water through the disposed wastes. If paved, the landfill area would make an ideal parking lot or storage yard provided the potential settlement of the fill material is taken into consideration.

### 5.1.3 Leaking UST Sites

Releases of petroleum hydrocarbons have been confirmed at numerous former UST sites within the current boundary of Camp SLO. Releases have also been confirmed at at least one UST site in an area no longer part of Camp SLO (the former boiler house at the CMC west facility). The hydrocarbons released appear to be exclusively heating oil and diesel fuel. In the very large majority of cases, hydrocarbon concentrations in soil beneath the tanks were below the County's de facto cleanup level of 100 mg/kg of TPH and the County

does not require any further action. At those UST sites where the County has requested additional work, investigations have shown that significant soil contamination is present at 10 UST sites. Note that in the subject context, "significant soil contamination" means that TPH concentrations in soil are substantially higher than 100 mg/kg. Of these 10 UST sites, ground water has been impacted at four.

Because of the types of contaminants, Geosystem believes that the leaking UST sites are not subject to CERCLA. Assuming that the ongoing investigation and (possibly) remediation programs will continue to a conclusion that satisfies the state and local regulatory agencies, Geosystem does not recommend any additional investigations as a result of this PA.

#### 5.1.4 Hutment Heating Systems

At least one release of heating oil and/or diesel fuel from the heating system at Hutment Area F has been confirmed. The release occurred after a vehicle damaged an aboveground valve. A number of hutments, including all of the hutments in Area F, were demolished in 1993 to clear the space necessary for a new barracks complex. The associated heating fuel distribution systems, which were reportedly badly corroded, were removed in their entirety during this process. The contractor for the new barracks apparently stripped the upper 1 or 2 feet of soil from the entire construction area, generating about 26,000 cubic yards of at least partially contaminated soil. This soil was reportedly disced to promote aeration and bioremediation and has since been stockpiled at Camp SLO awaiting a decision regarding its final disposition.

A subsurface investigation was conducted at the site of the aboveground release. However, no sampling and analysis has been performed in other areas formerly or still occupied by hutments. Also, no investigations have been conducted to determine whether ground water may have been impacted by releases from the hutment heating systems in Area F. So far as Geosystem has been able to ascertain, SLOCHA was generally satisfied with the remedial effort but requested additional assessment of residual soil contamination in certain specific

areas (December 15, 1992). In addition, the RWQCB (January 11, 1996) has expressed concern over the possible impact of the hutment heating systems on ground water quality.

Based on the type of contaminant, Geosystem believes that the petroleum exclusion will preclude regulation of the hutment heating oil systems under CERCLA. Also, DSA and Geosystem are currently evaluating the nature and extent of subsurface investigations to determine the possible impact, if any, of the existing and former hutment heating oil systems on the subsurface environment. It is noted that although the LLNL recommendations (October 16, 1996) do not, strictly speaking, pertain to the hutment heating systems, some type of risk-based corrective action evaluation is very likely to be appropriate. Considering its relatively low toxicity, it is very possible that remediation may not be required for the viscous and nonvolatile heating oil.

#### 5.1.5 Unexploded Ordnance

There is a very high probability that UXO and the residuals associated with explosives may be present in large areas within the current and, of more concern, former boundaries of Camp SLO. Specifically, UXO has been discovered on property now owned or occupied by Cal Poly, El Chorro Regional Park, SLO County Board of Education, and the U.S. Forest Service, despite these areas having been swept. Although the so-called "Highway 41" fire in 1994 caused a lot of ordnance to explode, it would be optimistic to assume that no more UXO is present. There are few, if any, restrictions on access to most of the areas in which UXO has been discovered. The residuals of exploded ordnance could include metals and other hazardous constituents.

UXO clearly poses a significant threat. In addition to CERCLA, Geosystem assumes that unexploded ordnance is regulated by the U.S. Army. At a minimum, Geosystem recommends that the portion of El Chorro Regional Park that has apparently not been cleared be swept for UXO. Geosystem also suggests that land owners and land users be notified of the possibility that UXO may be encountered within the former boundary of

Camp SLO. The notification process could include direct mailings and the posting of warning signs.

## 5.2 POTENTIAL RELEASE SITES

The types of activity conducted at Camp SLO over the last 67 years suggest the potential for numerous releases of hazardous materials. A very large majority of the potential release sites probably involve POLs that would most likely not be subject to regulation under CERCLA. In many instances, a site may be suspect merely because of the types of activity that occurred there in the past. In other instances, they may be a specific indication that a release has actually occurred. For discussion purposes, potential release sites have been broadly divided into those at which there is sufficient cause to recommend an SI and those at which there is not. These broad site categories have been termed primary and secondary potential release site, respectively.

### 5.2.1 Primary Potential Release Sites

Geosystem believes that a soil quality investigation, followed (if necessary) by a ground water quality investigation, is warranted at each of the following potential release sites:

- o Piping associated with the heating systems for the demolished hutments was reportedly badly corroded, resulting in near-surface soil contamination. Because of the identical construction of the heating systems for other hutment areas, it is likely that similar contamination is present in these areas.
- o Engineering personnel have reported smelling hydrocarbon odors at two former UST sites; the Motor Pool #8 fuel facility (Building 888) and the bulk fuel facility in the engineering yard (Buildings 1331 and 1332). A sheen was reportedly observed on standing water in an excavation dug at Building 888 to repair a leaking water pipe.
- o PCB-containing transformers were improperly stored outside of Building 509. Near-surface soils around Building 509 potentially have been impacted by PCB-containing oil that may have leaked from these transformers.

- o A number of pesticides and herbicides have been stored in at least two different locations in the engineering yard. Potential spills related to pesticide or herbicide storage, handling, or mixing may have impacted near-surface soils in these areas. Many pesticide and herbicide compounds are acutely toxic and may be environmentally persistent.

In addition to the above, the presence of lead projectiles in near-surface soils at the existing or former small arms firing ranges may be considered a hazard. While the ranges are still active (including the private range on County property), there is little benefit in removing the projectiles. However, some type of investigation and/or remedial action may be necessary in the future.

#### 5.2.2 Secondary Potential Release Sites

Secondary potential secondary release sites include those fixed sites at which hazardous materials are known to have been used, stored, disposed, or otherwise handled for a significant period of time. They include, among other things, all UST sites not previously investigated, all vehicle wash racks, all vehicle grease racks, and the former Caltrans facility. Clearly, there are many other non-fixed or transitory potential release sites. Examples would include locations where vehicles were repaired/lubricated in the field or anywhere ordnance exploded, leaving potentially hazardous residues in soil. Because of the absence of location information, the sheer number of such sites, and because surface structures have been constructed over many of them, the cost of a comprehensive investigation program would be prohibitively high and unnecessarily disruptive to operations at Camp SLO and the surrounding areas. In the absence of specific information suggesting that a release has occurred, Geosystem believes that such a program is not warranted. This opinion is based on the following:

- o Based on Camp SLO's long history, it is likely that significant releases would have become apparent, either directly during, for example, construction/maintenance activities, or indirectly by complaints from land users, contamination of wells, and the like.

- o None of the subsurface investigations conducted at specific release sites have encountered unexpected contamination that could have originated from other sources.

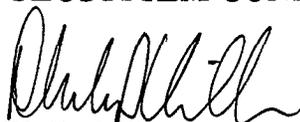
Geosystem expects that currently unknown release sites will be encountered periodically in the future, especially during demolition activities and subsurface work. Such release sites should be addressed as appropriate as they are encountered.

## 6.0 LIMITATIONS

This PA was conducted in a manner consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. The scope of the PA was limited to visual observation of surface conditions at the site, interviews with knowledgeable persons, and a review of readily available records prepared and/or maintained by CA ARNG, various regulatory agencies, and certain private organizations. No borings or monitoring wells were installed specifically for this PA and no soil, water, air, or waste samples were analyzed. The PA addresses the likelihood of hazardous waste contamination resulting from past and current land uses to the extent that such land uses are known. It is possible that certain conditions may exist at Camp SLO that were not revealed during the course of this PA. Geosystem's conclusions and recommendations are based on the standards and regulations currently in effect. Contaminants may be present at concentrations that do not violate present regulatory standards but may violate future standards. This report has been prepared for use by the State Military Department and the Division of the State Architect as a basis for determining whether additional investigations and/or remedial response measures are warranted at Camp SLO. Any use of this report for other than its intended purpose and any reliance on this report by third parties shall be at such parties' sole risk.

Respectfully submitted,

GEOSYSTEM CONSULTANTS, INC.

  
Philip Miller  
Project Manager  
(RCE No. C 042600)



  
Michael G. Grover  
Project Geologist  
(RG No. 6448)



## REFERENCES

California Army National Guard, undated, "An Introduction to Camp San Luis Obispo," a general information publication.

California Army National Guard, March 26, 1991, "Camp San Luis Obispo, Quarterly Environmental Update Report."

California Army National Guard, October 1, 1993, "Camp San Luis Obispo, Quarterly Environmental Update Report."

California Army National Guard, November 23, 1993, "Camp San Luis Obispo (Major Training Site) - Master Plan."

California Army National Guard, April 20, 1994a, "Environmental Audit, 12 April 1994," memorandum to Camp Commander, Camp San Luis Obispo, regarding OMS-19.

California Army National Guard, April 20, 1994b, "Environmental Audit, 13 April 1994," memorandum to Camp Commander, Camp San Luis Obispo, regarding USPFO.

California Army National Guard, April 26, 1994, "Environmental Audit, 12-15 April 1994," memorandum to Camp Commander, Camp San Luis Obispo.

California Army National Guard, June 14, 1995, untitled letter to the Division of the State Architect regarding the Sutter Avenue landfill and the former Caltrans facility at Camp San Luis Obispo.

California Conservation Corps, Construction Unit, June 1991, "Hazardous Materials Business Plan."

California Department of Forestry, June 18, 1992, "Facility Information/Chemical Inventory, Cuesta Camp, Camp San Luis Obispo, California."

California Department of Toxic Substances Control, Region 1, January 29, 1991, "Inspection Report, Camp San Luis Obispo, Highway 1, Five Miles West of San Luis Obispo, EPA #CA 8572890095."

California Department of Toxic Substances Control, Region 1, February 2, 1995, "Comments on the Preliminary Assessment Cost Proposal for Camp San Luis Obispo," letter to the Office of the Adjutant General.

REFERENCES  
(Continued)

California Department of Transportation (Caltrans), January 1, 1993, "Hazardous Materials Management Plan and Business Response Plan for Motorized Equipment Training Academy."

California Mens Colony, February 1995, "Wastewater Treatment Plant Annual Summary of Operations, Calendar Year 1994, California Mens Colony, San Luis Obispo."

California Regional Water Quality Control Board, Central Coast Region, May 12, 1989, "Order No. 89-77, Waste Discharge Requirements for California Military Department, Camp San Luis Obispo, Class III Landfill, San Luis Obispo County, California."

California Regional Water Quality Control Board, Central Coast Region, December 1993, "Surface Water Degradation by Inactive Metal Mines in Northwest San Luis Obispo County, California."

California Regional Water Quality Control Board, Central Coast Region, December 2, 1994, "Notice of Violation, Camp San Luis Obispo, San Luis Obispo County," letter to Camp Commander, Camp San Luis Obispo.

California Regional Water Quality Control Board, Central Coast Region, January 11, 1996, "DoD - Camp San Luis Obispo; 1) Report Project Scope, Site Investigation of Fuel Contamination, Camp San Luis Obispo, September 1989, 2) Final, Preliminary Site Assessment Plan, Shops Tank Site, Hut Area G, Spill Site, Hutment Fuel Pipeline System at Camp San Luis Obispo, October 26, 1989, and 3) Draft, Site Assessment Report, Hutment Fuel Pipeline System at Camp San Luis Obispo, March 1991," letter to Division of the State Architect.

California Specialized Training Institute, May 9, 1994, "Business Plans for Disclosure of Hazardous Materials."

Claritas, Inc., June 23, 1995, "Population Change Report," prepared for Geosystem Consultants, Inc.

County of San Luis Obispo, Air Pollution Control District, May 6, 1986, untitled cover letter to State Military Department accompanying Notice of Violation No. 0325.

County of San Luis Obispo, Health Agency, Department of Public Health, July 21, 1987, "Notice of Violation," letter to Camp Commander, Camp San Luis Obispo, regarding July 17, 1987 diesel fuel spill in Hutment Area F.

REFERENCES  
(Continued)

County of San Luis Obispo, Health Agency, July 23, 1987, "Notice of Violation," issued to COL Jack D. Aldridge, Camp San Luis Obispo, ordering CA ARNG to cease and desist using hutment heating oil distribution systems throughout Camp San Luis Obispo.

County of San Luis Obispo, Health Agency, Division of Environmental Health, April 25, 1991, "Underground Tank Abandonment at California Mens Colony, Hwy 1, San Luis Obispo," letter to the Office of the State Architect.

County of San Luis Obispo, Health Agency, Division of Environmental Health, December 15, 1992, "Re: Fuel Oil Pipeline and Contaminated Soil Removal at Camp San Luis Obispo (File No. MAR000201)," letter to the Office of the State Architect.

Ecology and Environment, Inc., May 10, 1991, "CERCLA Screening Site Inspection, Camp San Luis Obispo, Highway 1 - 7 Miles West of San Luis Obispo, California, San Luis Obispo County," report prepared for the U.S. Environmental Protection Agency, Region IX.

Engineering-Science, Inc., July 10, 1992, "Risk Assessment Procedures for Ordnance and Explosive Waste (OEW) Sites, Camp San Luis Obispo, San Luis Obispo, California," DERP Project #J09CA203105.

Geosystem Consultants, Inc., November 10, 1994, "Cost Proposal, Preliminary Assessment, Camp San Luis Obispo, San Luis Obispo County, California," submitted to the Division of the State Architect.

Geosystem Consultants, Inc., November 23, 1994, "Preliminary Report, Underground Storage Tank Site Assessment, Camp San Luis Obispo, California," prepared for the Division of the State Architect.

Geosystem Consultants, Inc., August 21 1995, "Report, Preliminary Investigation, Pennington Creek Landfill, Camp San Luis Obispo, California," prepared for the Division of the State Architect.

Geosystem Consultants, Inc., August 25, 1995, "Report, Preliminary Investigation, Story Park Landfill, Camp San Luis Obispo, California," prepared for the Division of the State Architect.

Geosystem Consultants, Inc., September 14, 1995, "Status Report, Additional Underground Storage Tank Site Assessment, Camp San Luis Obispo, California (Agreement No. CS 6952; Work Order No. MAR 850.01)," prepared for the Division of the State Architect.

REFERENCES  
(Continued)

Geosystem Consultants, Inc., October 9, 1995, "Report, Preliminary Investigation, Kansas Avenue Landfill, Camp San Luis Obispo, California," prepared for the Division of the State Architect.

Geosystem Consultants, Inc., November 30, 1995, "Final Closure and Postclosure Maintenance Plan, Sutter Avenue Landfill, Camp San Luis Obispo, California," prepared for the Division of the State Architect.

Geosystem Consultants, Inc., March 28, 1996a, "Preliminary Wash Ramp Investigation, Former Caltrans Facility, Camp San Luis Obispo, California," report prepared for the Division of the State Architect.

Geosystem Consultants, Inc., March 28, 1996b, "Downgradient Ground Water Quality Assessment, Sutter Avenue Landfill, Camp San Luis Obispo, California," report prepared for the Division of the State Architect.

Lawrence Livermore National Laboratory, October 16, 1995, "Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks (LUFTs)," report UCRL-AR-121762 submitted to the California State Water Resources Control Board and the Senate Bill 1764 Leaking Underground Fuel Tank Advisory Committee.

Natec Environmental Reporting Services, Ltd., April 6, 1995, "Environmental Disclosure Report - Camp San Luis Obispo."

Office of the State Architect, February 26, 1988, "Summary of Electrical Equipment Sampled for PCB Contamination," memorandum to the California Department of the Military.

Office of the State Architect, Asbestos Abatement Unit, March 1990, "State of California, Department of the Military, Asbestos Management Plan."

PTS Environmental, undated, "Camp San Luis Obispo Underground Fuel Tank Removal, W.O. MAR 850 #0957," report prepared for the Office of the State Architect.

Rauenzahn, Richard C., March 5, 1990, "Hazardous Material/Hazardous Waste Handler Business Identification Data, Organizational Maintenance Shop #19," letter to San Luis Obispo County Health Agency, Division of Environmental Health.

REFERENCES  
(Continued)

Reidel Environmental Services, Inc., April 1993, "Draft Final Engineering Report, Site Investigation at Former Camp San Luis Obispo, San Luis Obispo, California, Contract No. DAC A09-88-D-0056, Delivery Order 02," prepared for the U.S. Army Corps of Engineers, Los Angeles District, Reidel Project No. 4699.

Staal, Gardner & Dunne, Inc., June 1989, "Investigation Proposal, Water Quality Solid Waste Assessment Test, Camp San Luis Obispo Landfill, San Luis Obispo County, California," draft proposal submitted to the Department of General Services, Office of the State Architect.

U.S. Army Corps of Engineers, April 3, 1995, "Defense Environmental Restoration Program/Formerly Used Defense Sites, Findings and Determination of Eligibility," prepared for Camp San Luis Obispo.

U.S. Army Environmental Hygiene Agency, July 2, 1986, "Ground-Water Consultation No. 38-26-0929-86, Review of Landfill Operating Procedures and Preparation of Ground-Water Monitoring Plan for Assessing Ground-Water Quality at Two Landfills, Camp San Luis Obispo, California, 15-18 April 1986," report prepared for the Manager, ARNG Operating Activity Center, Aberdeen Proving Ground, MD 21010-5420.

U.S. Army Environmental Hygiene Agency, December 20, 1989, "Final Report, Ambient Air Quality Study No. 43-21-0573-90, Solid Waste Air Quality Assessment Test, Camp San Luis Obispo, California, 6-15 September 1988," prepared for the Manager, ARNG Operating Activity Center, Aberdeen Proving Ground, MD 21010-5420.

U.S. Department of Agriculture, Soil Conservation Service, April 1994, "Land Management Plan for Camp San Luis Obispo, California," report prepared for the California Army National Guard.

U.S. Environmental Protection Agency, January 2, 1986, "Notice of Noncompliance," issued to Office of the State Architect.

U.S. Environmental Protection Agency, March 19, 1990, "Inspection Report, TSCA Section 6 PCB Inspection, Camp San Luis Obispo, California National Guard, San Luis Obispo, California."

U.S. Environmental Protection Agency, September 1991, "Guidance for Performing Preliminary Assessments Under CERCLA."

REFERENCES  
(Continued)

U.S. Geological Survey, 1944, "Chromite Deposits Near San Luis Obispo, San Luis Obispo County, California," Bulletin 045-B.

Weston, Roy F., February 25, 1991, "Draft Preliminary Site Investigation, UST and Diesel Spill Sites, Camp San Luis Obispo," report prepared for the Office of the State Architect.

REFERENCES  
(Continued)

INTERVIEWS:

Brown, Sylvia; Camp San Luis Obispo Headquarters; telephone interview on July 18, 1995.

Cook, Bill; California Mens Colony, Chorro Reservoir Water Treatment Facility; telephone interview on June 21-22, 1995.

Duke, Brian; Camp Roberts Environmental Office; site inspection and personal interview on May 17, 1995.

Nielsen, Bob; County of San Luis Obispo Operations Center; personal interview on June 29, 1995.

Pedroni, Pete; Cuesta College Physical Plant Director; telephone interview on June 21, 1995.

Valverde, Michael; Plant Operations Manager for California Mens Colony Wastewater Treatment Facility; personal interview on June 15, 1995.

West, SGT Dennis; Hazardous Materials Manager for U.S. Property and Fiscal Office; personal interview on June 15, 1995.



**TABLES**

**TABLE 1**  
**PARTIAL SUMMARY OF LAND ACQUISITIONS**  
 Camp San Luis Obispo, California

<u>DATE</u>	<u>AREA</u> (acres)	<u>LAND OWNER</u>	<u>FORM OF ACQUISITION</u>
Unknown	5,880.09	State of California	Lease
Unknown	178	Ernest and Marguerite Vollmer	Lease
Unknown	80	Southern Pacific Company	Lease
Unknown	112.5	John Hubbard snf Christine Theirs Hollister	Declaration of Taking
Unknown	507	Lucy Turri	Direct purchase
01/07/43	976.21	John snf Josephine Guidetti	Direct purchase
01/09/43	4,010.74	Department of Agriculture	Use permit
01/30/43	593.49	Henry and Teresa R. Gilardio	Direct purchase
02/26/43	2,495.92	Mary Walter, et al.	Direct purchase
08/04/46	125.21	Department of the Interior	Public Land Order #511
<b>TOTAL</b>	<b>14,959.16</b>		

**TABLE 2**  
**PARTIAL SUMMARY OF LAND DISPOSALS**  
 Camp San Luis Obispo, California

<u>DATE</u>	<u>AREA</u> (acres)	<u>LAND OWNER</u>	<u>FORM OF DISPOSAL</u>
12/46	80	Southern Pacific Company	Lease termination
12/31/46	178	Ernest & Marguerite Vollmer	Lease termination
03/31/50	7.99	State of California	Lease termination
12/65	5,872.10	State of California	Lease termination
07/01/65	125.21	Department of the Interior	Transfer
06/66	4,010.74	Department of Agriculture	Transfer
03/20/68	630.69	Trustee of the California State Colleges	Transfer
02/28/68	206.22	SLO County Board of Education	Transfer
03/21/68	1,727.07	Trustees of the California State Colleges	Transfer
Unknown	720	SLO County	Transfer
01/19/72	47	SLO County Board of Education	Transfer
04/26/72	78.65	Madonna Construction Company	Transfer
03/12/73	75	SLO Community College District	Transfer
06/22/82	453	State of California	Transfer

**TABLE 3**  
**ACTIVE FUEL FACILITIES**  
 Camp San Luis Obispo, California

<u>BUILDING NUMBER</u>	<u>YEAR INSTALLED</u>	<u>TANK CAPACITY</u> (gallons)	<u>CONTENTS</u>	<u>LOCATION</u>
963	1941	5,190	Diesel	CDF fuel facility
963	1941	5,170	Gasoline	CDF fuel facility
1,331	1941	5,170	Gasoline	Engineering yard
1,370	1980	5,000	Diesel	OMS-19
1,370	1980	2,000	Gasoline	OMS-19

TABLE 4

## SUMMARY OF ABANDONED UNDERGROUND STORAGE TANKS

Camp San Luis Obispo, California

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
111	NA <sup>(1)</sup>	NA	NA	NA	NA	Tank suspected but not investigated.
114	NA	NA	NA	NA	NA	Tank suspected but not investigated.
134	NA	NA	NA	NA	NA	Tank suspected but not investigated.
135	NA	NA	NA	NA	NA	Tank suspected but not investigated.
137	NA	NA	NA	NA	NA	Tank suspected but not investigated.
138	NA	NA	NA	NA	NA	Tank suspected but not investigated.
151	NA	NA	NA	NA	NA	Tank suspected but not investigated.
151	NA	NA	NA	NA	NA	Tank suspected but not investigated.
202	NA	NA	NA	NA	NA	Tank suspected but not found.
203	NA	NA	NA	NA	NA	Tank suspected but not found.
205	NA	NA	NA	NA	NA	Tank suspected but not found.
215	575	1941	Diesel <sup>(2)</sup>	1965	March 1993	Closed - no further action required.
216	575	1941	Diesel	1965	March 1993	Closed - no further action required.
218	575	1941	Diesel	1965	March 1993	Closed - no further action required.
219	575	1941	Diesel	1965	March 1993	Closed - no further action required.
221	575	1941	Diesel	1965	April 1993	Closed - no further action required.
222	575	1941	Diesel	1965	April 1993	Closed - no further action required.
225	575	1941	Diesel	1965	April 1993	Closed - no further action required.
226	575	1941	Diesel	1965	April 1993	Closed - no further action required.
355	NA	NA	NA	NA	NA	Tank suspected but not investigated.
389	8,000	NA	#5 Fuel Oil	NA	September 1987	Removed by CMC.
389	8,000	NA	#5 Fuel Oil	NA	September 1987	Removed by CMC.
389	8,000	NA	#5 Fuel Oil	NA	September 1987	Removed by CMC.
401	NA	NA	NA	NA	NA	Tank suspected but not investigated.
404	NA	NA	NA	NA	NA	Tank suspected but not investigated.
406	NA	NA	NA	NA	NA	Tank suspected but not investigated.
504	NA	NA	NA	NA	NA	Tank suspected but not investigated.
536	5,170	1941	Diesel	1965	March 1993	Closed - no further action required.
536	5,170	1941	Diesel	1965	March 1993	Closed - no further action required.
540	NA	NA	NA	NA	NA	Tank suspected but not investigated.
542	NA	NA	NA	NA	NA	Tank suspected but not investigated.
544	NA	NA	NA	NA	NA	Tank suspected but not investigated.
546	NA	NA	NA	NA	NA	Tank suspected but not investigated.
548	NA	NA	NA	NA	NA	Tank suspected but not investigated.
550	NA	NA	NA	NA	NA	Tank suspected but not investigated.
552	NA	NA	NA	NA	NA	Tank suspected but not investigated.
600	2,200	1941	Diesel	1965	March 1993	Closed - no further action required.
601	575	1941	Diesel	1965	March 1993	Closed - no further action required.
603	NA	NA	Diesel	1965	NA	Tank suspected but not found.
610	575	1941	Diesel	1965	March 1993	Closed - no further action required.
618	1,090	1941	Diesel	1965	January 1993	Closed - no further action required.
619	1,090	NA	Diesel	1965	NA	Tank suspected but not found.
620	1,090	1941	Diesel	1965	April 1993	Closed - no further action required.
621	1,090	1941	Diesel	1965	December 1992	Remedial investigation in progress.
622	1,090	1941	Diesel	1965	April 1993	Closed - no further action required.
623	1,090	1941	Diesel	1965	March 1993	Closed - no further action required.
624	1,090	1941	Diesel	1965	April 1993	Closed - no further action required.
625	575	1941	Diesel	1965	May 1993	Closed - no further action required.
701	575	1941	Diesel	1965	December 1992	Closed - no further action required.

TABLE 4  
(Continued)

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
713	575	1941	Diesel	1965	December 1992	Closed - no further action required.
715	575	1941	Diesel	1965	December 1992	Closed - no further action required.
719	1,090	1941	Diesel	1965	December 1992	Closed - no further action required.
721	575	1941	Diesel	1965	December 1992	Closed - no further action required.
722	575	1941	Diesel	1965	December 1992	Closed - no further action required.
724	575	1941	Diesel	1965	December 1992	Closed - no further action required.
733	575	1941	Diesel	1965	December 1992	Remedial investigation in progress.
735	575	1941	Diesel	1965	December 1992	Remedial investigation in progress.
737	1,090	1941	Diesel	1965	December 1992	Closed - no further action required.
739	5,170	1941	Diesel	1965	January 1993	Closed - no further action required.
739	5,170	1941	MOGAS	1965	January 1993	Closed - no further action required.
743	1,090	1941	Waste Oil	1965	March 1993	Closed - no further action required.
748	5,170	1941	Diesel	1965	April 1993	Remedial investigation in progress.
748	5,170	1941	MOGAS	1965	April 1993	Remedial investigation in progress.
748	5,170	1941	MOGAS	1965	April 1993	Remedial investigation in progress.
748	5,170	1941	MOGAS	1965	April 1993	Remedial investigation in progress.
749	1,000	1941	Diesel	1965	December 1992	Closed - no further action required.
754	2,000	1941	Diesel	1965	April 1993	Closed - no further action required.
757 <sup>(3)</sup>	2,000	1941	Diesel	1965	January 1993	Closed - no further action required.
757 <sup>(3)</sup>	3,000	1941	Diesel	1965	January 1993	Closed - no further action required.
757 <sup>(3)</sup>	5,170	1941	Diesel	1965	NA	Tank suspected but not found.
757 <sup>(3)</sup>	5,170	1941	Diesel	1965	NA	Tank suspected but not found.
800	1,090	1941	Diesel	1965	December 1992	Closed - no further action required.
804	NA	NA	Diesel	1965	NA	Tank suspected but not found.
806	575	1941	Diesel	1965	December 1992	Closed - no further action required.
807	575	1941	Diesel	1965	December 1992	Closed - no further action required.
808	575	1941	Diesel	1965	December 1992	Closed - no further action required.
812	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.
815	575	1941	Diesel	1965	December 1992	Closed - no further action required.
817	1,090	1941	Diesel	1965	December 1992	Closed - no further action required.
817	575	1941	Diesel	1965	March 1993	Closed - no further action required.
819	575	1941	Diesel	1965	December 1992	Closed - no further action required.
824	575	1941	Diesel	1965	December 1992	Closed - no further action required.
826	575	1941	Diesel	1965	December 1992	Closed - no further action required.
827	575	1941	Diesel	1965	December 1992	Closed - no further action required.
836	575	1941	Diesel	1965	December 1992	Closed - no further action required.
838	575	1941	Diesel	1965	December 1992	Remedial investigation in progress.
839	575	1941	Diesel	1965	December 1992	Closed - no further action required.
841	575	1941	Diesel	1965	December 1992	Remedial investigation in progress.
850	575	1941	Diesel	1965	December 1992	Closed - no further action required.
851	575	1941	Diesel	1965	December 1992	Closed - no further action required.
852	575	1941	Diesel	1965	December 1992	Closed - no further action required.
856	575	1941	Diesel	1965	December 1992	Closed - no further action required.
860	575	1941	Diesel	1965	December 1992	Closed - no further action required.
864	575	1941	Diesel	1965	December 1992	Closed - no further action required.
869	575	1941	Diesel	1965	November 1992	Closed - no further action required.
871	575	1941	Diesel	1965	December 1992	Closed - no further action required.
872	575	1941	Diesel	1965	December 1992	Closed - no further action required.
882	1,090	1941	Diesel	1965	January 1993	Remedial investigation in progress.
887	1,090	1941	Diesel	1965	April 1993	Remedial investigation in progress.
888	5,170	1941	Diesel	1993	1993	Impacted soil left in place.
888	5,170	1941	MOGAS	1993	1993	Impacted soil left in place.

TABLE 4  
(Continued)

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
888	5,170	1941	MOGAS	1993	1993	Impacted soil left in place.
888	5,170	1941	MOGAS	1993	1993	Impacted soil left in place.
900	1,100	1941	Diesel	1965	March 1993	Closed - no further action required.
901	2,000	1941	Diesel	1965	April 1993	Closed - no further action required.
904	575	1941	Diesel	1965	March 1993	Closed - no further action required.
908	575	1941	Diesel	1965	FIP <sup>(4)</sup>	Closed - no further action required.
910	575	1941	Diesel	1965	FIP	Closed - no further action required.
917	NA	NA	Diesel	1965	NA	Tank suspected but not found.
918	1,090	1941	Diesel	1965	March 1993	Closed - no further action required.
919	NA	NA	Diesel	1965	NA	Tank suspected but not found.
921	575	1941	Diesel	1965	March 1993	Closed - no further action required.
923	575	1941	Diesel	1965	March 1993	Closed - no further action required.
932	575	1941	Diesel	1965	March 1993	Closed - no further action required.
933	575	1941	Diesel	1965	March 1993	Closed - no further action required.
933	575	1941	Diesel	1965	March 1993	Closed - no further action required.
934	NA	NA	NA	NA	NA	Tank suspected but not investigated.
938	575	1941	Diesel	1965	March 1993	Closed - no further action required.
940	575	1941	Diesel	1965	March 1993	Closed - no further action required.
949	575	1941	Diesel	1965	March 1993	Closed - no further action required.
950	575	1941	Diesel	1965	March 1993	Closed - no further action required.
951	NA	NA	NA	NA	NA	Tank suspected but not investigated.
961	1,000	1941	Diesel	1965	May 1993	Closed - no further action required.
961	1,000	1941	Diesel	1965	May 1993	Closed - no further action required.
962	1,000	1941	Diesel	1965	May 1993	Closed - no further action required.
963	5,170	1941	Diesel	1965	May 1993	Closed - no further action required.
963	5,170	1941	Diesel	1965	May 1993	Closed - no further action required.
1003	1,000	1941	Diesel	1965	April 1993	Closed - no further action required.
1003	1,000	1941	Diesel	1965	April 1993	Closed - no further action required.
1005	NA	NA	Diesel	1965	NA	Tank suspected but not found.
1022	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1023	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1025	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1034	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1036	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1043	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1046	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1052	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1056	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1059	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1061	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1070	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1072	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1073	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1075	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1084	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1090	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1102	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1110	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1114	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1116	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1129	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1132	NA	NA	NA	NA	NA	Tank suspected but not investigated.

TABLE 4  
(Continued)

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
1134	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1135	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1136	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1139	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1148	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1151	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1153	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1154	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1163	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1166 <sup>(5)</sup>	5,170	NA	Diesel	1965	NA	Tank suspected but not found.
1166 <sup>(5)</sup>	5,170	NA	Diesel	1965	NA	Tank suspected but not found.
1201	NA	NA	NA	NA	NA	Vent pipe visible - tanks suspected.
1209	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1211	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1300	575	1941	Diesel	1965	December 1992	Closed - no further action required.
1301	1,090	1941	Diesel	1965	March 1993	Closed - no further action required.
1302	575	1941	Diesel	1965	December 1992	Closed - no further action required.
1303	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.
1304	575	1941	Diesel	1965	December 1992	Closed - no further action required.
1321	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1323	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1325	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1328	7,500	1941	Diesel	1965	FLP	Remedial investigation in progress.
1331	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1331	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1332	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1332	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1332	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1332	12,000	NA	Diesel/MOGAS	NA	April 1988	Impacted soil left in place.
1335	1,000	1941	Diesel	1965	April 1993	Closed - no further action required.
1338	1,090	1941	Diesel	1965	April 1993	Closed - no further action required.
1341	1,090	NA	Diesel	1965	NA	Tank suspected but not found.
1342	1,090	1941	Diesel	1965	1993 (?)	Closed - no further action required.
1348	1,090	1941	Diesel	1965	March 1993	Remedial investigation in progress.
1350	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1362	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1400	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1401	575	1941	Diesel	1965	NA	Tank suspected but not found.
1402	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.
1403	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1405	1,000	1941	Diesel	1965	April 1993	Closed - no further action required.
1405	575	1941	Diesel	1965	April 1993	Closed - no further action required.
1405	575	1941	Diesel	1965	NA	Tank suspected but not found.
1416	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1426	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1427	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1430	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1431	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1433	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.
1442	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1444	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1445	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.

TABLE 4  
(Continued)

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
1447	575	1941	Diesel	1965	1993 (?)	Closed - no further action required.
1456	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1458	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1459	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1461	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1470	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1472	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1501	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1508	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1513	575	1941	Diesel	1965	April 1993	Closed - no further action required.
1514	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1519	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1524	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1525	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1527	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1528	575	1941	Diesel	1965	April 1993	Closed - no further action required.
1529	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1530	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1532	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1541	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1543	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1544	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1546	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1555	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1557	NA	NA	Diesel	1965	NA	Tank suspected but not found.
1558	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1560	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1569	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1571	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1572	1,090	1941	Diesel	1965	January 1993	Closed - no further action required.
1575	1,090	1941	Diesel	1965	March 1993	Closed - no further action required.
1575	5,170	NA	Diesel	1965	NA	Tank suspected but not found.
1575	5,170	NA	Diesel	1965	NA	Tank suspected but not found.
1580	1,090	1941	Diesel	1965	March 1993	Closed - no further action required.
1601	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1602	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1604	NA	NA	Diesel	1965	NA	Tank suspected but not found.
1612	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1613	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1620	575	1941	Diesel	1965	May 1993	Closed - no further action required.
1621	NA	NA	Diesel	1965	NA	Tank suspected but not found.
1622	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1623	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1633	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1635	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1636	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1638	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1647	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1649	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1650	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1652	575	1941	Diesel	1965	January 1993	Closed - no further action required.
1661	NA	NA	NA	NA	NA	Tank suspected but not investigated.

TABLE 4  
(Continued)

<u>BUILDING NUMBER</u>	<u>TANK CAPACITY</u> (gallons)	<u>DATE INSTALLED</u>	<u>FORMER CONTENTS</u>	<u>DATE OF LAST USE</u>	<u>DATE REMOVED</u>	<u>STATUS</u>
1661	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1663	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1666	NA	1941	Diesel	1965	NA	Tank found at Building 1671.
1667	NA	NA	Diesel	1965	NA	Tank found at Building 1671.
1668	575	1941	Diesel	1965	March 1993	Closed - no further action required.
1671	575	1941	Diesel	1965	April 1993	Closed - no further action required.
1671	575	1941	Diesel	1965	April 1993	Closed - no further action required.
1801	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1801	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1809	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1812	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1814	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1825	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1826	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1828	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1837	NA	NA	NA	NA	NA	Tank suspected but not investigated.
1839	NA	NA	NA	NA	NA	Tank suspected but not investigated.
C-5-3	575	NA	Diesel	1965	NA	Tank suspected but not found.
C-5-14	NA	NA	NA	NA	NA	Tank suspected but not investigated.

- NOTES:
- (1) NA denotes Not Available / Not Applicable.
  - (2) Tanks used for oil-fired heaters and boilers reportedly stored both diesel fuel and No. 2 fuel oil.
  - (3) Tanks may have been associated with former gas station and post exchange which were reportedly removed in 1953 (Buildings 759, 760, and 761).
  - (4) FIP denotes tank was Filled In Place rather than removed.
  - (5) Building originally associated with motor pool #11 but subsequently moved southeast of CALTRANS yard.

TABLE 5

ABOVEGROUND STORAGE TANK REMOVALS<sup>(1)</sup>  
(HUTMENT HEATING SYSTEMS)  
Camp San Luis Obispo, California

<u>BUILDING NO.</u>	<u>HUTMENT AREA<sup>(2)</sup></u>
611	A
709	B
718	B
806	O
838	H
841	J
846	I
860	M
869	N
885	G
914	South of Parade Ground
1,400	Fire Station
1,567	CCC Area

- NOTES: (1) Tanks were removed by PTS Environmental under a change order issued by DSA on February 26, 1993. The work was reportedly completed by July 1, 1993.  
(2) See map included in Appendix C for location of CA ARNG hutment areas A through O.

TABLE 6

SUMMARY OF VEHICLE MAINTENANCE FACILITIES  
Camp San Luis Obispo, California

<u>BUILDING NO.</u>	<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>COMMENTS</u>
147	CMC East	Wash rack	Removed
149	CMC East	Grease rack	Removed
150	CMC East	Grease rack	Removed
152	CMC East	Grease rack	Removed
397	CMC West	Wash rack	
398	CMC West	Grease rack	Removed
419	CMC West	Wash rack	Built over
506	Kern Avenue	Oil shed behind building	
537	San Benito Road	Vehicle maintenance	
607	USPFO Area	Wash rack	
632 <sup>(1)</sup>	USPFO Area	Grease rack	Removed
741	Motor Pool #7	Grease rack	Removed
743	Motor Pool #7	Maintenance building	
744	Motor Pool #7	Maintenance building	
746	Motor Pool #7	Grease rack	Removed
747	Motor Pool #7	Wash rack	
749	Motor Pool #7	Maintenance building	
750	Motor Pool #7	Grease rack	Removed
751	Motor Pool #7	Grease rack	Removed
752	Motor Pool #7	Oil storage	
753	Motor Pool #7	Grease rack	Removed
754	Motor Pool #7	Maintenance/storage building	
880	Motor Pool #8	Grease rack	Removed
881	Motor Pool #8	Wash rack	Removed
882	Motor Pool #8	Maintenance building	
887	Motor Pool #8	Maintenance building	
958	CDF Yard	Wash rack	
959	CDF Yard	Grease rack	Removed
960	CDF Yard	Grease rack	
961	CDF Yard	Maintenance building	
962	CDF Yard	Maintenance building	
1089	Cuesta College	Maintenance building	Removed
1091	Cuesta College	Grease rack	Removed
1092	Cuesta College	Grease rack	Removed
1093	Cuesta College	Wash rack	Removed
1160	Cuesta College	Grease rack	Removed
1161	Cuesta College	Wash rack	Removed
1162	Cuesta College	Maintenance building	Removed
1164	Cuesta College	Maintenance building	Removed
1165	Cuesta College	Maintenance building	Removed
1171	Cuesta College	Aircraft hanger	Removed
1174	Cuesta College	Oil storage	Removed

TABLE 6  
(Continued)

<u>BUILDING NO.</u>	<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>COMMENTS</u>
1328	OMS #19	Maintenance building	Wash rack behind building
1330	Engineering Yard	Maintenance building	
1339	Engineering Yard	Wash rack	
1346	Warehouse Area	Oil storage	Removed - foundation visible
1352	Engineering Yard	Grease rack	Removed
1582	Caltrans META Yard	Wash rack	
1583	Caltrans META Yard	Grease rack	Removed
1584	Caltrans META Yard	Grease rack	Removed
1669	Military Police Yard	Wash rack	
1670	Military Police Yard	Grease rack	Removed
1673	Military Police Yard	Grease rack	Removed

NOTE: (1) Building 632 now designates the USPFO warehouse.

**TABLE 7**  
**AREA WELL INVENTORY**  
 Camp San Luis Obispo, California

<u>TOWNSHIP-RANGE</u>	<u>SECTION</u>	<u>TRACT</u>	<u>WELL TYPE</u>	<u>DEPTH (feet)</u>	<u>DATE INSTALLED</u>
T29S - R11E	27	--	Irrigation	40	09/01/66
	27	--	Irrigation	36	09/14/66
	33	--	Municipal	57	07/10/57
T29S - R12E	21	M	Domestic	165	04/28/79
	22	L	Domestic	100	05/18/66
	22	--	Domestic	160	02/22/85
	22	--	Domestic	180	02/21/85
	24	--	Domestic	300	04/04/86
	25	--	Domestic	260	08/13/86
	26	--	Domestic	180	06/07/79
	26	--	Domestic	240	06/06/79
	26	--	Domestic	145	09/16/80
	27	A	Domestic	92	01/04/69
	27	--	Domestic	300	07/01/81
32	--	Domestic	195	12/11/70	
T30S - R11E	13	A	Municipal	--	12/11/70
	13	H	Municipal	--	--
	13	J	Domestic	--	--
	13	J	Domestic	--	--
	13	J	Domestic	150	1978
	13	J	Domestic	170	1977
	13	R	Domestic	--	--
T30S - R12E	09	--	Irrigation	96	10/05/63
	09	--	Irrigation	70	09/31/63
T30S - R12E	10	--	Domestic	280	04/02/79
	18	D	Municipal	--	--
	15	--	Domestic	120	04/09/87
	17	D	Municipal	--	--
	19	D	Domestic	182	05/11/79
	19	D	Domestic	140	1977
	19	K	Domestic	220	1979

**TABLE 8**  
**OBSERVED SENSITIVE SPECIES**  
**Camp San Luis Obispo, California**

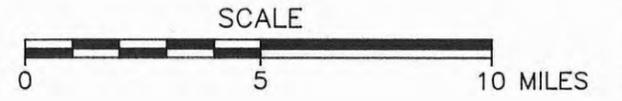
<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS<sup>(1)</sup></u>
<u>Plants</u>		
Bishop manzanita	<i>Arctostaphylos luciana</i>	CNPS
Club-haired mariposa lily	<i>Calochatus chloratus</i> ssp. <i>clavatus</i>	CNPS
San Luis mariposa lily	<i>Calochortus obispensis</i>	CNPS
San Luis sedge	<i>Carex obispoensis</i>	CNPS
Brewer's spineflower	<i>Chorizanthe brewer's</i>	CNPS
Palmer's spineflower	<i>Chorizanthe palmer's</i>	CNPS
Chorro Creek bay thistle	<i>Cirsium fontinale</i> var. <i>obispoense</i>	FE, SE, CNPS
San Luis Obispo dudleya	<i>Dudleya abramsii</i> ssp. <i>murina</i>	CNPS
Santa Ynez false lupine	<i>Thermopsis macrophylla</i> var. <i>macrophylla</i>	CNPS, CR
<u>Amphibians</u>		
California red-legged frog	<i>Rana aurora draytonii</i>	CSC
<u>Reptiles</u>		
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>	CSC
<u>Birds</u>		
Burrowing owl	<i>Speotyto cunicularia</i>	CSC
Sharp-shinned hawk	<i>Accipiter striatus</i>	CSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	F2, CSC
Cooper's hawk	<i>Accipiter cooperii</i>	CSC
Yellow warbler	<i>Dendroica petechia brewsteri</i>	CSC
Northern harrier	<i>Circus cyaneus</i>	CSC
California horned lark	<i>Eremophila alpestris actia</i>	
Least bells vireo	<i>Vireo bellii pusilius</i>	FE, SE
<u>Mammals</u>		
American badger	<i>Taxidea taxus</i>	CSC
Monterey dusky-footed woodrat	<i>Neotoma fuscipes luciana</i>	F2, CSC
Pallid bat	<i>Antrozous pallidus</i>	CSC

NOTE: (1) CNPS = listed by California Native Plant Society (not legally protected)  
 CR = State of California Rare Species  
 CSC = State of California, Department of Fish and Game, Species of Special Concern  
 F2 = Federal Candidate-Category 2 Species  
 FE = Federal Endangered Species  
 SE = State of California Endangered Species



FIGURES

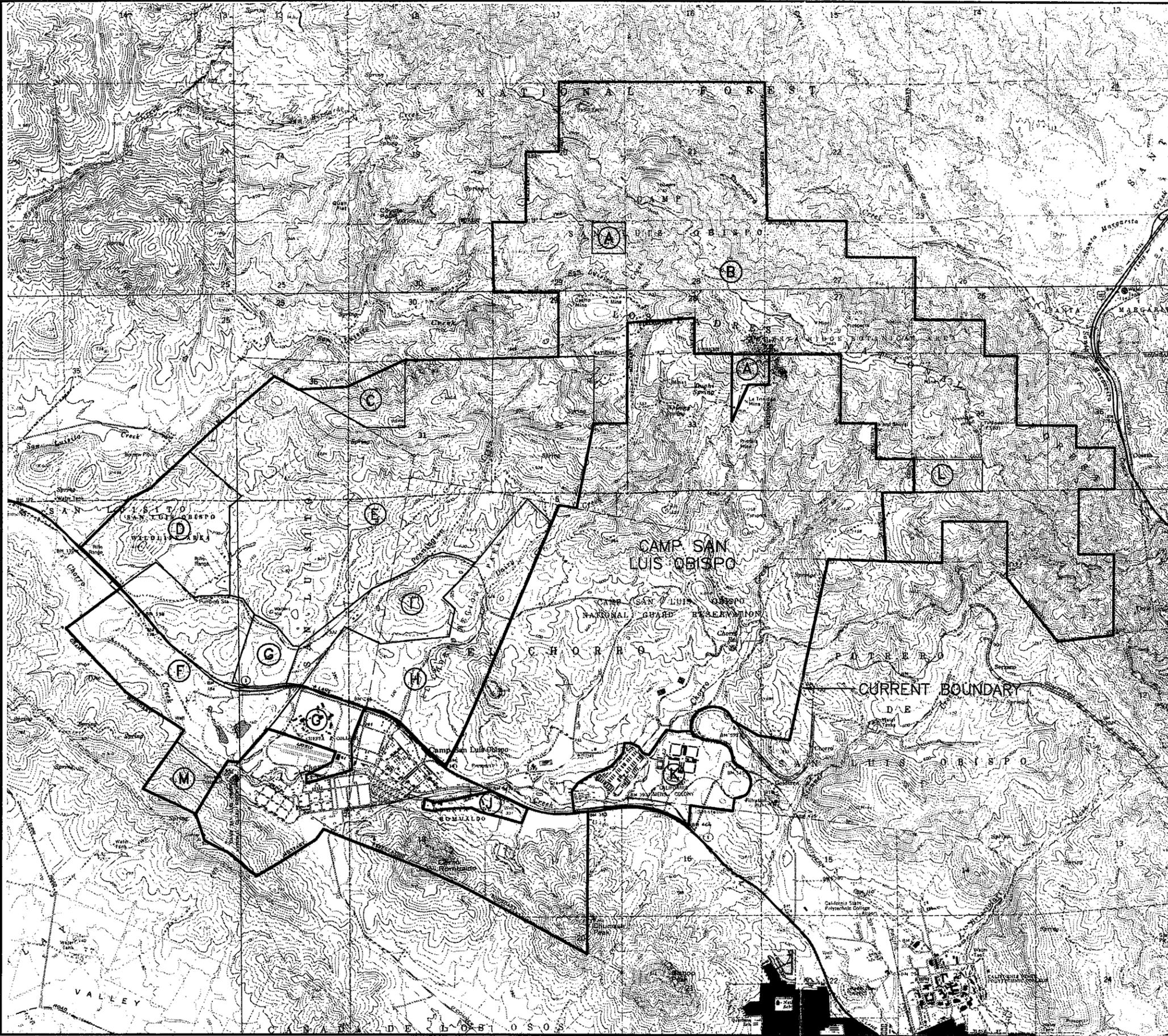
DRAWN BY: SHS 12/12/93  
 CHECKED BY: [Signature] 1-13-14  
 APPROVED BY: [Signature] 1-13-94  
 DWG. NO. 92488-001  
 FILE NAME: SITELOC



**REFERENCE**  
 U.S.G.S TOPOGRAPHIC - BATHYMETRIC SERIES  
 SAN LUIS OBISPO, CALIFORNIA, DATED 1956,  
 REVISED 1969, SHORELINE REVISED AND  
 BATHYMETRY ADDED 1979.  
 SCALE = 1:250,000.

FIGURE 1  
 LOCATION MAP

DRAWN BY: TTH  
 CHECKED BY: M. M. M.  
 APPROVED BY: R. L. L.  
 DWG. NO.: 94533E-002  
 FILE NAME: MAP-A  
 DATE: 08/04/95  
 SCALE: 5-20-76  
 DATE: 5-20-76



**LEGEND**

- (A) AREAS EXCLUDED FROM CAMP SAN LUIS OBISPO
- (B) U.S. FOREST SERVICE
- (C) ERNEST AND MARGUERITE VOLLMER
- (D) CALIFORNIA DEPARTMENT OF FISH AND GAME
- (E) CALIFORNIA STATE POLYTECHNIC UNIVERSITY
- (F) STATE OF CALIFORNIA
- (G) CUESTA COLLEGE
- (H) EL CHORRO REGIONAL PARK
- (I) SAN LUIS OBISPO COUNTY BOARD OF EDUCATION
- (J) SAN LUIS OBISPO COUNTY OPERATIONS CENTER
- (K) CALIFORNIA MEN'S COLONY
- (L) SOUTHERN PACIFIC TRANSPORTATION CO.
- (M) MADONNA CONSTRUCTION COMPANY

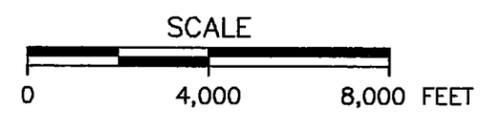
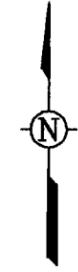


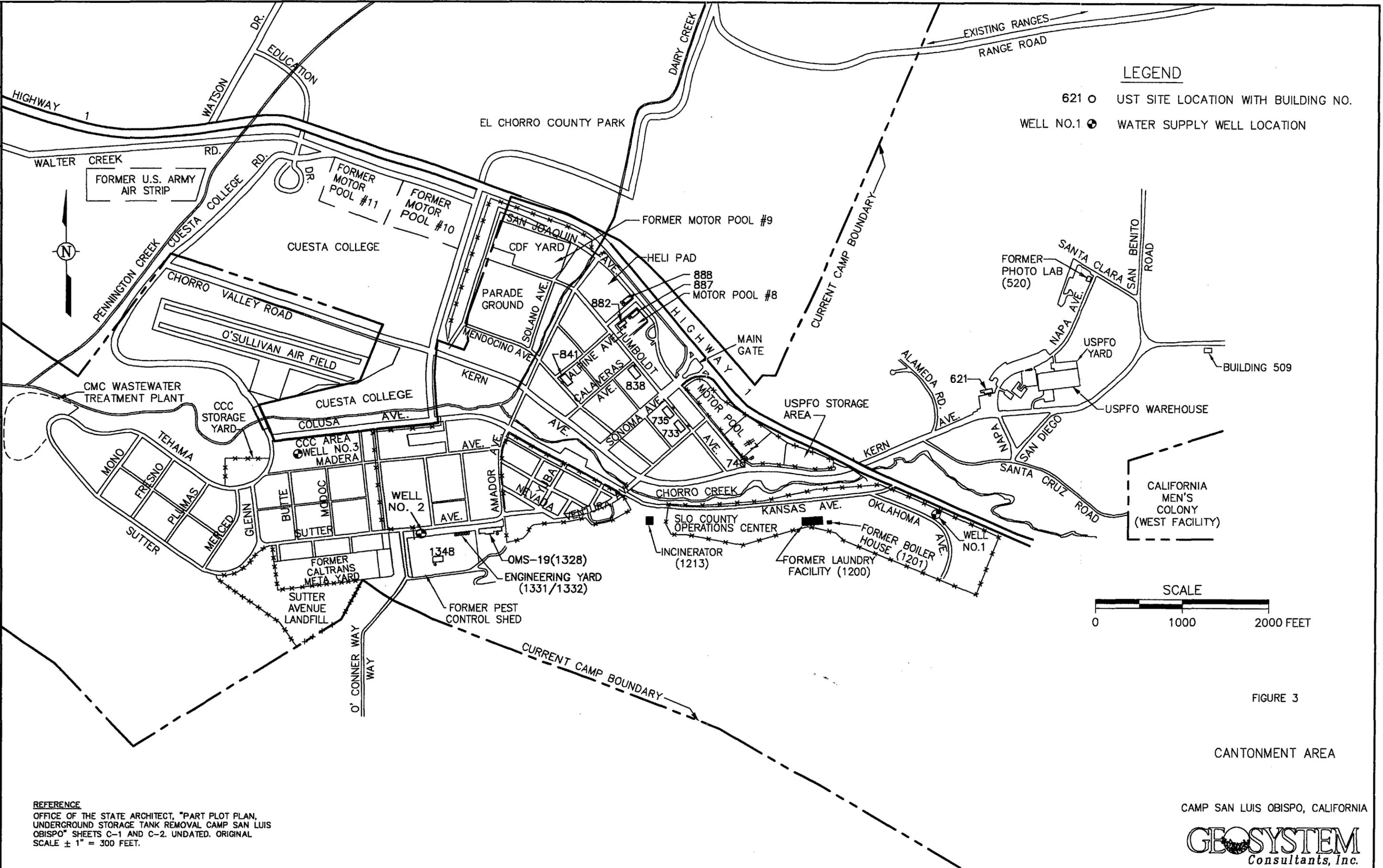
FIGURE 2

SITE PLAN

CAMP SAN LUIS OBISPO, CALIFORNIA



DWG. NO. 94533-005  
 FILE NAME CANTAREA  
 5-20-96  
 5-20-96  
 APPROVED BY  
 CHECKED BY  
 DJC  
 06/14/95  
 DRAWN BY



**LEGEND**

621 ○ UST SITE LOCATION WITH BUILDING NO.

WELL NO.1 ● WATER SUPPLY WELL LOCATION

**SCALE**

0 1000 2000 FEET

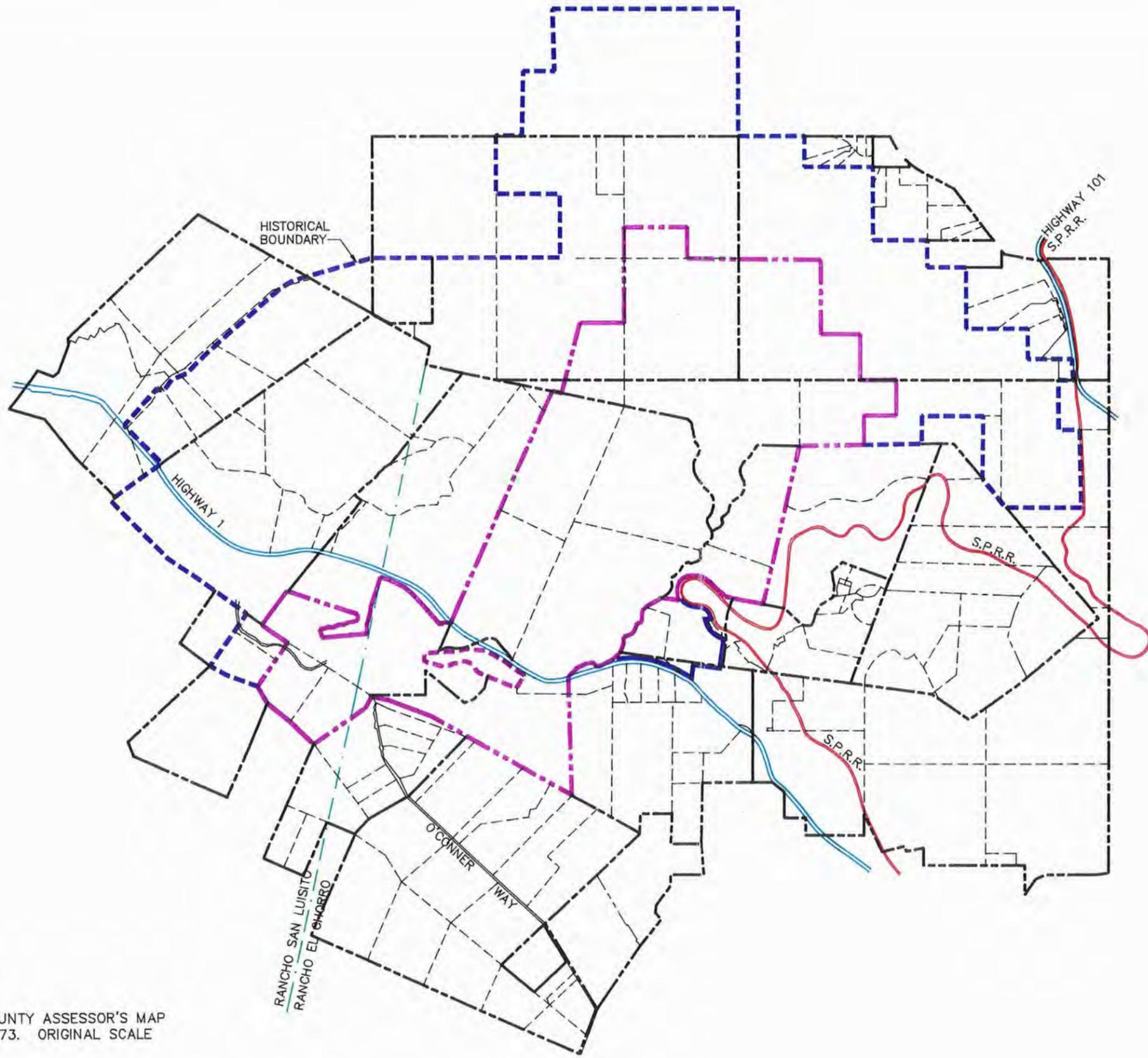
FIGURE 3  
CANTONMENT AREA

**REFERENCE**  
 OFFICE OF THE STATE ARCHITECT, "PART PLOT PLAN,  
 UNDERGROUND STORAGE TANK REMOVAL CAMP SAN LUIS  
 OBISPO" SHEETS C-1 AND C-2. UNDATED. ORIGINAL  
 SCALE ± 1" = 300 FEET.

CAMP SAN LUIS OBISPO, CALIFORNIA

**GEOSYSTEM**  
 Consultants, Inc.

DRAWN BY	DJC	CHECKED BY	M. S. [Signature]	DWG. NO.	94533E-001
BY	03/17/95	APPROVED BY	P. [Signature]	FILE NAME	5-20-96
				AREA	5-20-96



**LEGEND**

- - - CAMP BOUNDARY (CURRENT)
- - - CAMP BOUNDARY (HISTORICAL)
- - - TRACT BOUNDARY
- - - LOT BOUNDARY
- = = = STATE HIGHWAY 1
- = = = SOUTHERN PACIFIC RAILROAD

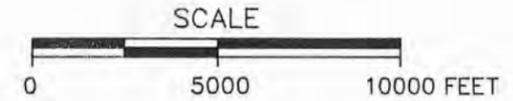


FIGURE 4

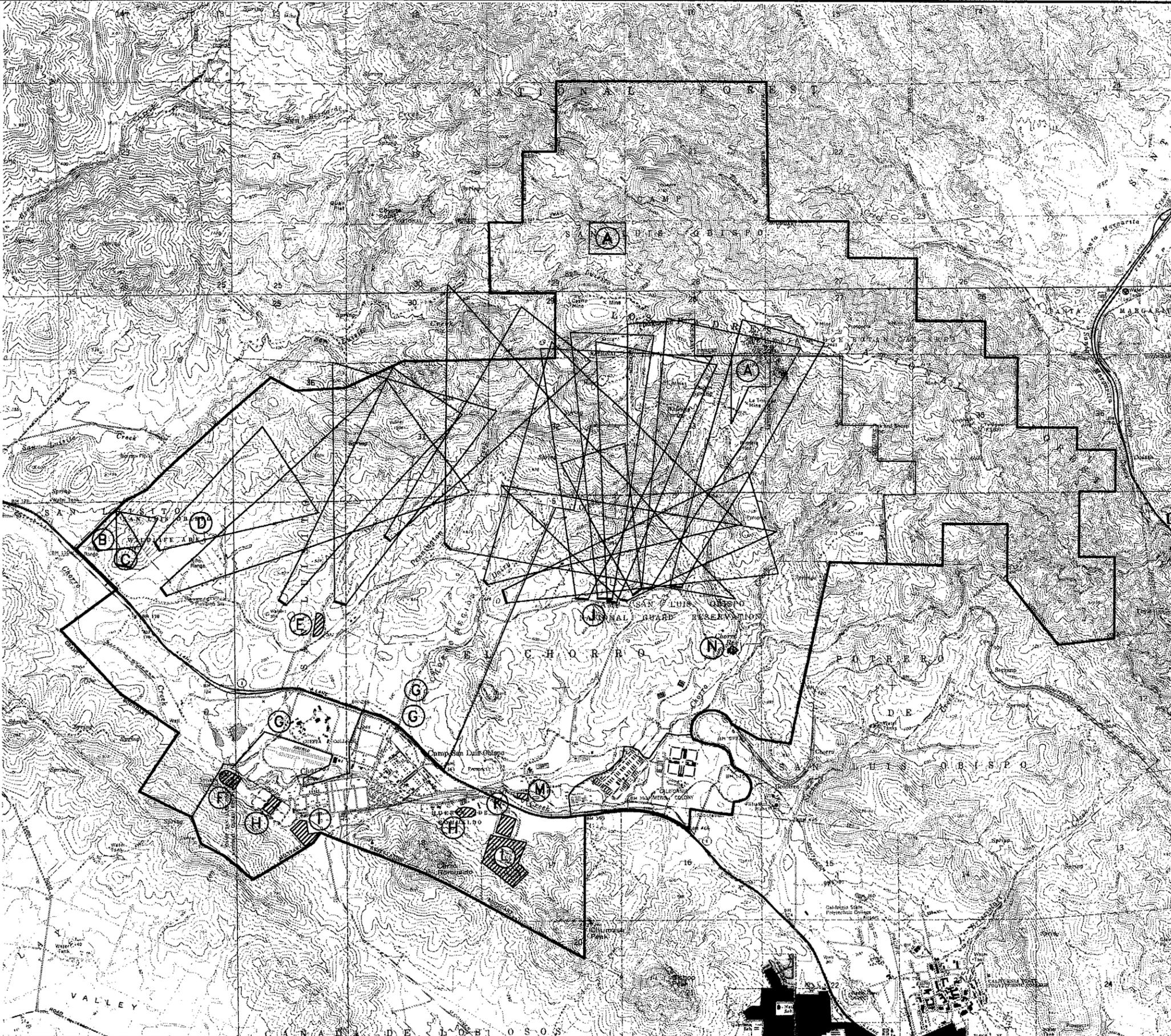
**BOUNDARY MAP**

**REFERENCE:**  
 SAN LUIS OBISPO COUNTY ASSESSOR'S MAP  
 BOOKS 67, 70, AND 73. ORIGINAL SCALE  
 VARIES PER PAGE.

CAMP SAN LUIS OBISPO, CALIFORNIA



DRAWN BY: TTH  
 CHECKED BY: M. S. [Signature]  
 08/04/95  
 DWG. NO.: S-10-96  
 FILE NAME: 5-20-96  
 MAP: 94533E-002



**LEGEND**

- (A) AREAS EXCLUDED FROM CAMP SAN LUIS OBISPO
  - (B) HAND GRENADE RANGE
  - (C) RIFLE GRENADE RANGE
  - (D) 3.5-INCH ROCKET LAUNCHER RANGE
  - (E) PENNINGTON CREEK LANDFILL
  - (F) CMC WASTEWATER TREATMENT PLANT
  - (G) GRENADE COURT (3 TOTAL)
  - (H) POSSIBLE DISPOSAL AREA (2 TOTAL)
  - (I) SUTTER AVENUE LANDFILL
  - (J) EXISTING DEMOLITION/EXPLOSIVES RANGE
  - (K) KANSAS AVENUE LANDFILL
  - (L) FORMER AMMUNITION STORAGE AREA
  - (M) STORY PARK LANDFILL
  - (N) CMC WATER TREATMENT FACILITY
-  LOCATION OF EXISTING AND FORMER WEAPON FIRING FANS

NOTE:  
 1) FIRING FANS REPRESENT SMALL ARMS FRING RANGES UNLESS OTHERWISE INDICATED.

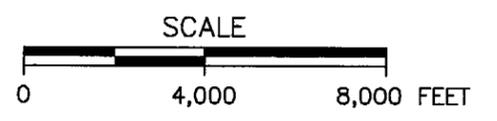
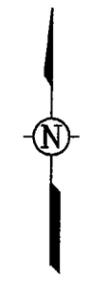
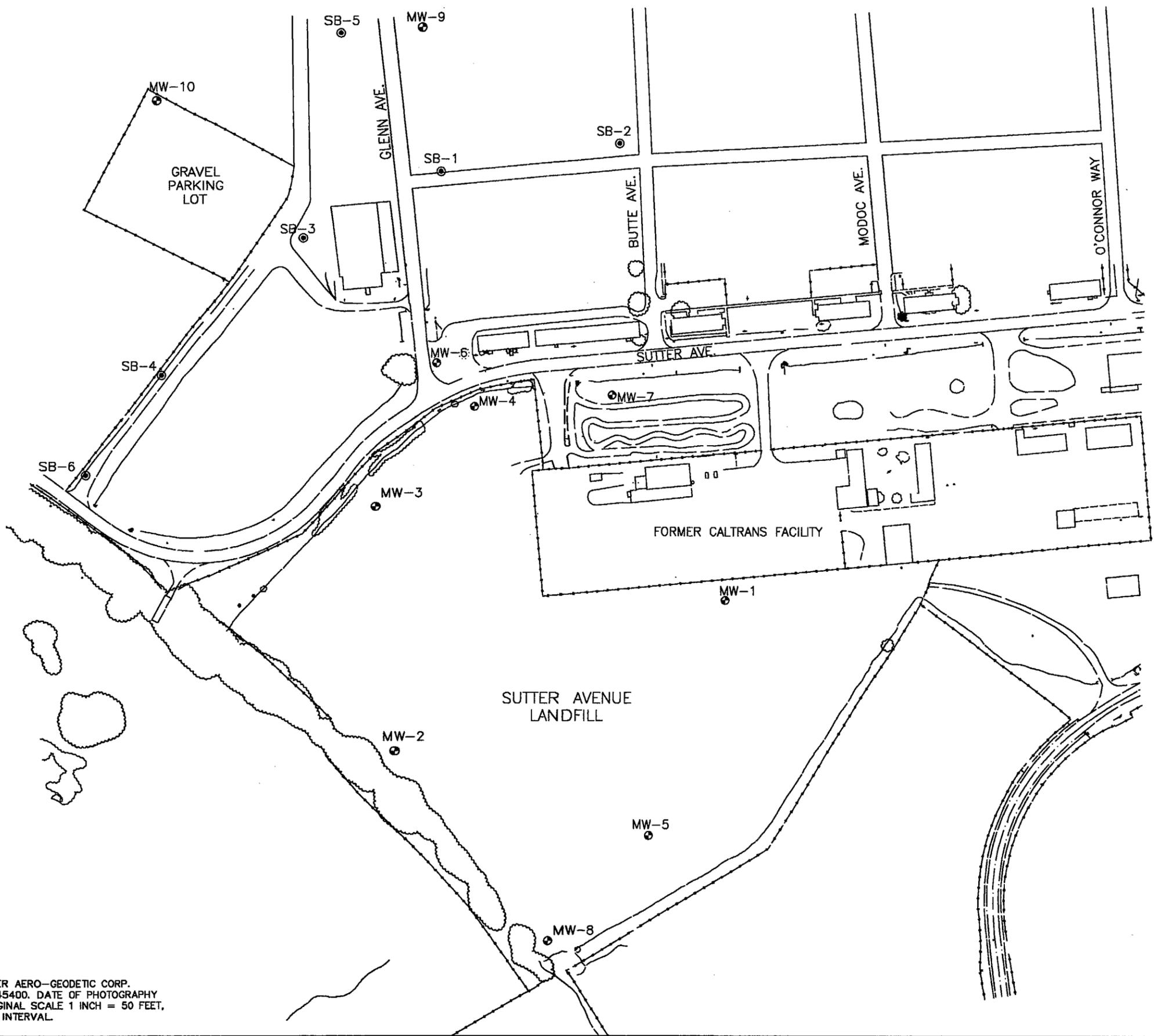
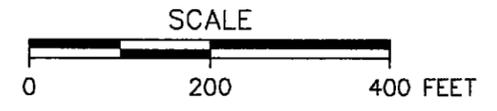


FIGURE 5  
 SITE FEATURES  
 CAMP SAN LUIS OBISPO, CALIFORNIA  
**GEO**SYSTEM  
 Consultants, Inc.

TTH  
 DRAWN BY: M. B. ...  
 CHECKED BY: P. ...  
 3/1/96  
 DWG. NO. 94533B-017  
 FILE NAME: LANDFILL



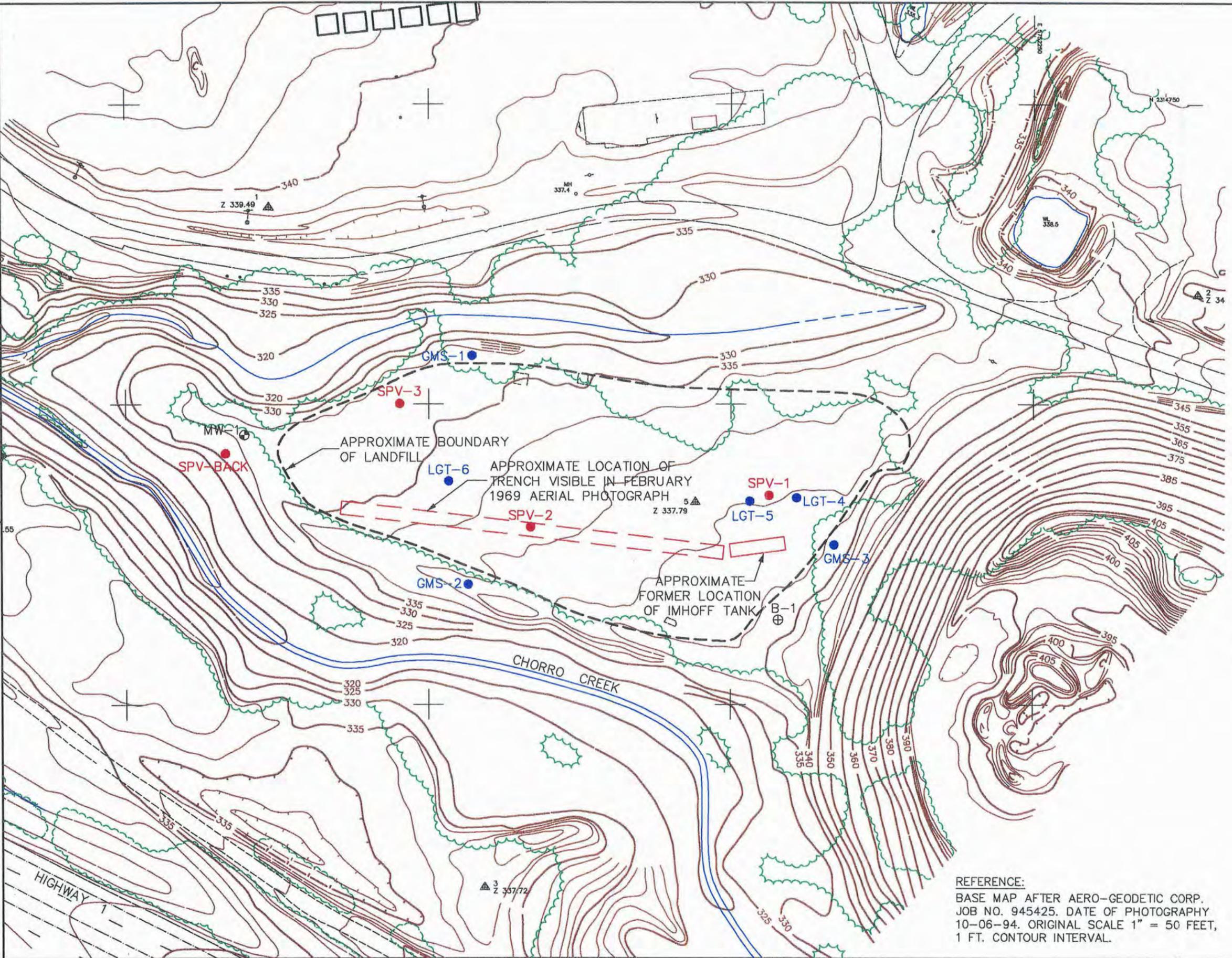
**LEGEND**  
 ● MONITORING WELL LOCATION  
 ○ HYDROPUNCH SAMPLE LOCATION



**REFERENCE:**  
 BASE MAP AFTER AERO-GEODETIC CORP.  
 JOB NUMBER 945400. DATE OF PHOTOGRAPHY  
 10-06-94. ORIGINAL SCALE 1 INCH = 50 FEET,  
 1 FT. CONTOUR INTERVAL.

FIGURE 6  
 SUTTER AVENUE LANDFILL  
 CAMP SAN LUIS OBISPO, CALIFORNIA  
**GEOSYSTEM**  
 Consultants, Inc.

DRAWN BY: DJC  
 CHECKED BY: M. Kuhn  
 APPROVED BY: P. Williams  
 DWG. NO.: 94533C-001  
 FILE NAME: NPARK  
 DATE: 02/09/95  
 DATE: 5-20-96  
 DATE: 5-20-96



- LEGEND**
- ⊕ GROUND WATER MONITORING WELL LOCATION
  - ⊕ SOIL BORING LOCATION
  - SOIL GAS SAMPLING LOCATION
  - APPROXIMATE LOCATION OF AIR SWAT SAMPLING STATION
  - ▲ GROUND CONTROL STATION FOR AERIAL MAPPING

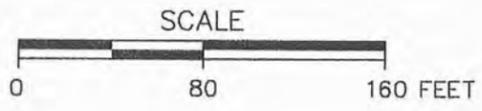


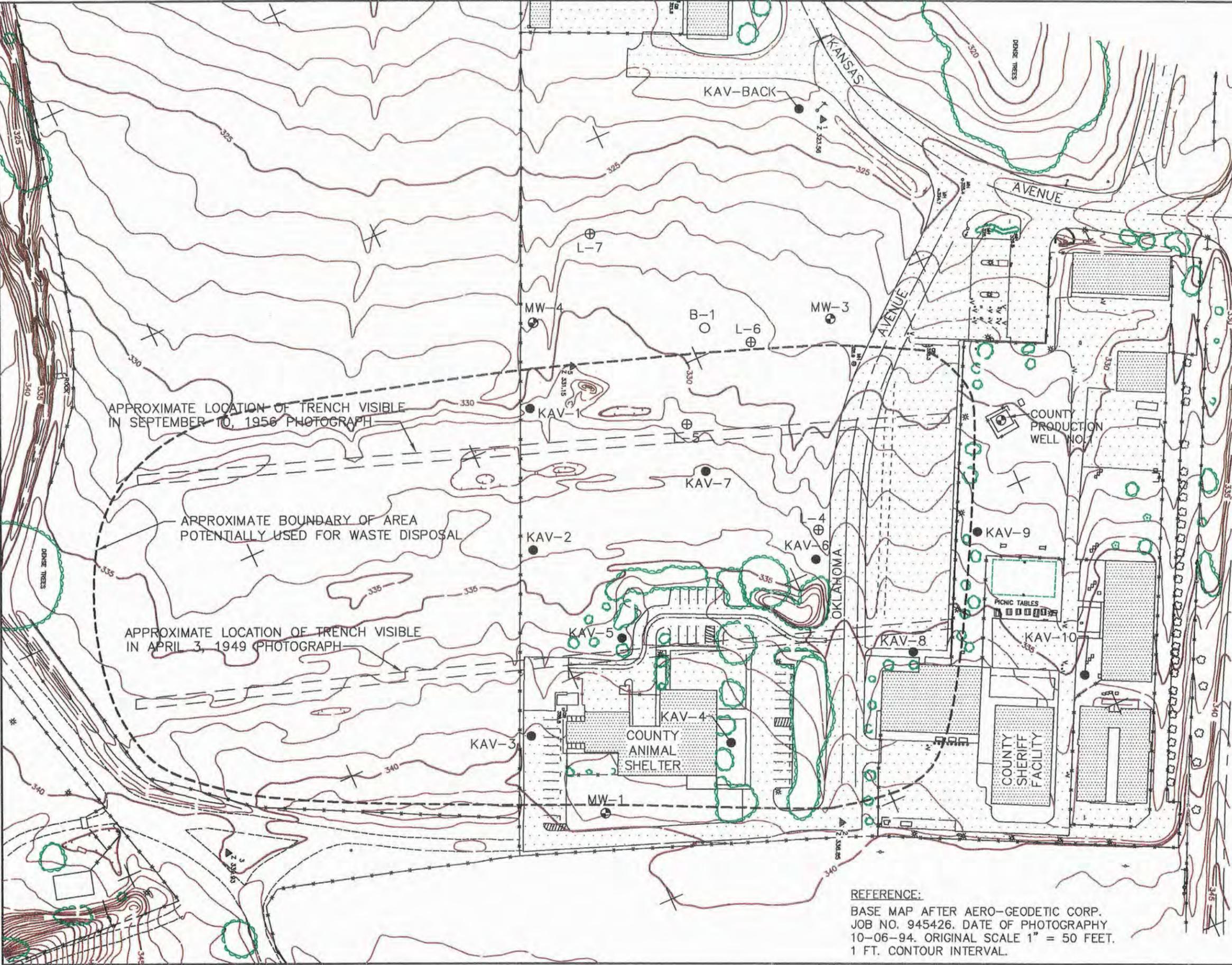
FIGURE 7

STORY PARK LANDFILL

**REFERENCE:**  
 BASE MAP AFTER AERO-GEODETIC CORP.  
 JOB NO. 945425. DATE OF PHOTOGRAPHY  
 10-06-94. ORIGINAL SCALE 1" = 50 FEET,  
 1 FT. CONTOUR INTERVAL.

CAMP SAN LUIS OBISPO, CALIFORNIA  
**GEOSYSTEM**  
 Consultants, Inc.

DRAWN BY DJC  
 CHECKED BY M. B. ...  
 APPROVED BY P. ...  
 DWG. NO. 94533C-003  
 FILE NAME KANS-SP



**LEGEND**

- ⊕ GROUND WATER MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ⊕ LYSIMETER LOCATION (NOTE: LOCATION OF L-4, L-5 AND L-6 APPROXIMATED)
- SOIL GAS SAMPLING LOCATION
- ▲ GROUND CONTROL STATION FOR AERIAL MAPPING
- [Hatched Box] BUILDING
- [Dotted Box] PAVED AREAS

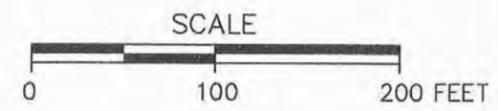


FIGURE 8

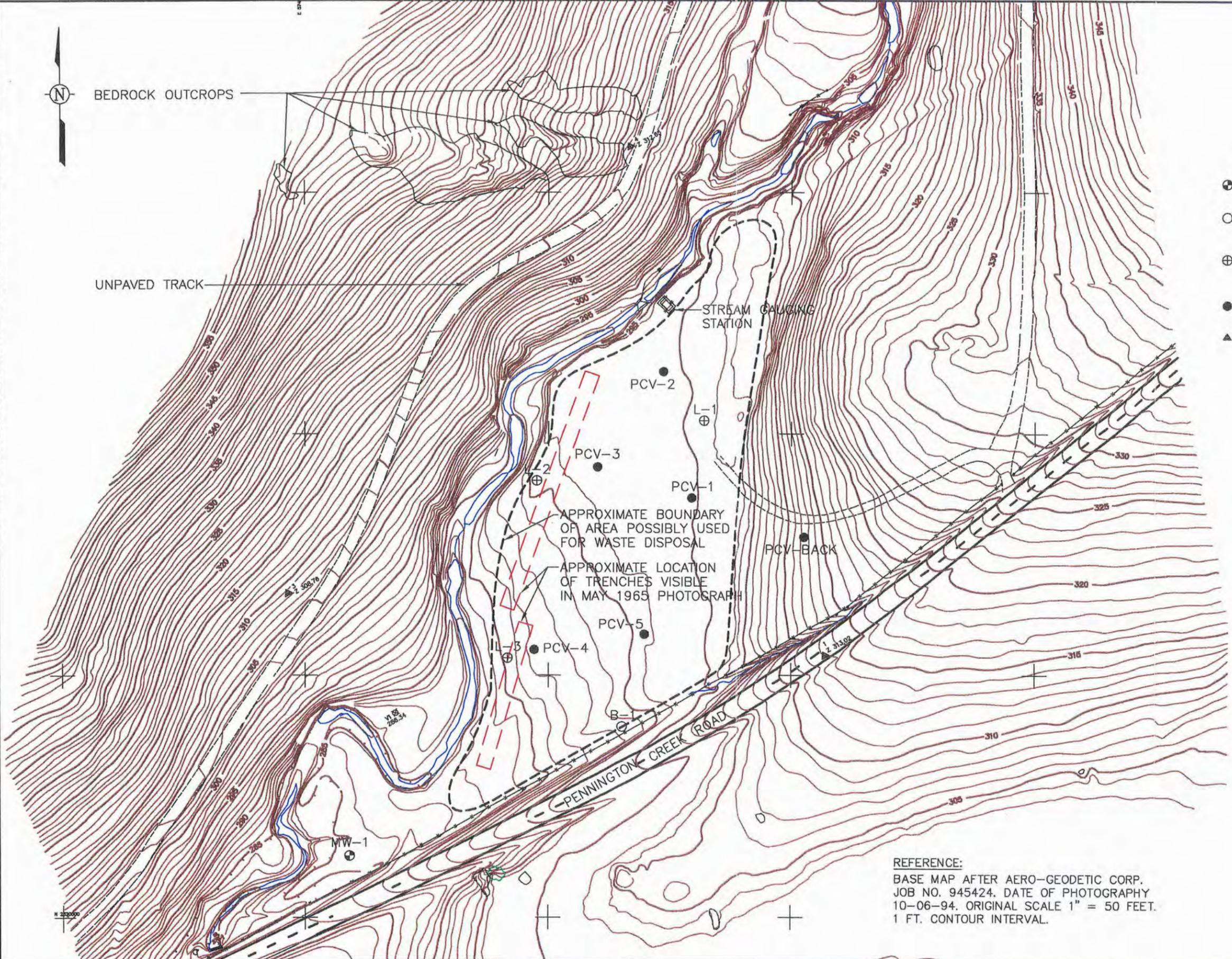
KANSAS AVENUE LANDFILL

CAMP SAN LUIS OBISPO, CALIFORNIA

**GEOSYSTEM**  
Consultants, Inc.

REFERENCE:  
 BASE MAP AFTER AERO-GEODETTIC CORP.  
 JOB NO. 945426. DATE OF PHOTOGRAPHY  
 10-06-94. ORIGINAL SCALE 1" = 50 FEET.  
 1 FT. CONTOUR INTERVAL.

DRAWN BY DJC  
 CHECKED BY M. J. [Signature]  
 APPROVED BY [Signature]  
 DWG. NO. 94533C-002  
 FILE NAME CREEK-SP



**LEGEND**

- ⊕ GROUND WATER MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ⊕ LYSIMETER LOCATION (NOTE: L-2 AND L-3 APPROXIMATE)
- SOIL GAS SAMPLING LOCATION
- ▲ GROUND CONTROL STATION FOR AERIAL MAPPING

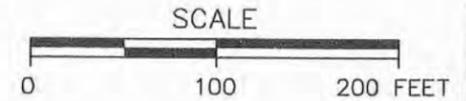


FIGURE 9

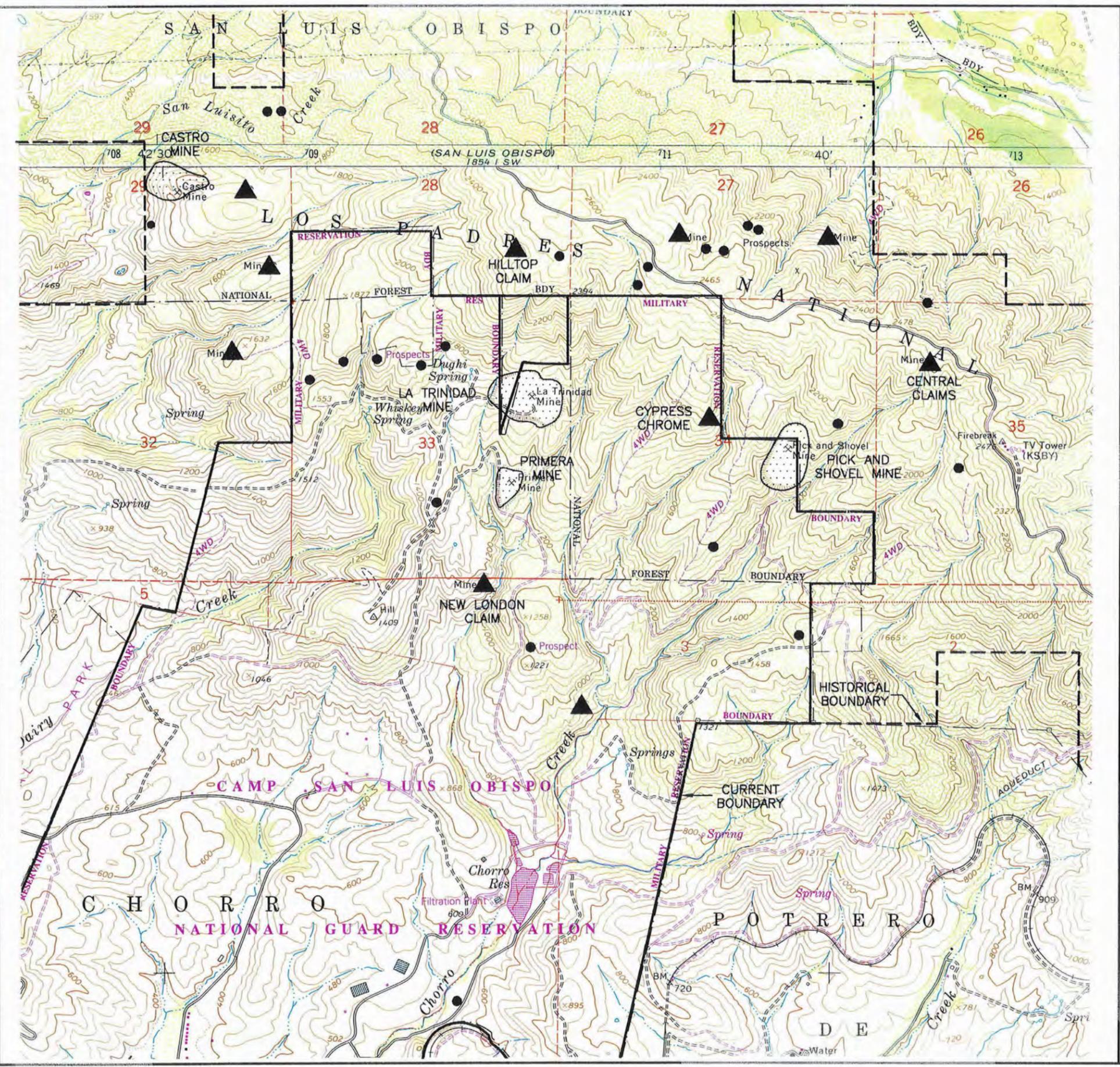
PENNINGTON CREEK LANDFILL

REFERENCE:  
 BASE MAP AFTER AERO-GEODETIC CORP.  
 JOB NO. 945424. DATE OF PHOTOGRAPHY  
 10-06-94. ORIGINAL SCALE 1" = 50 FEET.  
 1 FT. CONTOUR INTERVAL.

CAMP SAN LUIS OBISPO, CALIFORNIA



DWG. NO. 94533E-003  
 FILE NAME LOCATION  
 5-20-96  
 5-20-96  
 CHECKED BY M. J. [Signature]  
 APPROVED BY P. [Signature]  
 TTH 4/09/96  
 DRAWN BY



**LEGEND**  
 ▲ MINE LOCATION  
 ● PROSPECT LOCATION  
 ○ EXTENT OF MINE TAILINGS

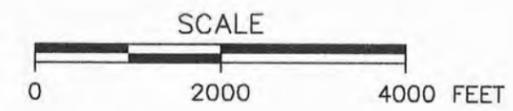


FIGURE 10

MINE LOCATION MAP

CAMP SAN LUIS OBISPO, CALIFORNIA





**APPENDIX A**

**NATEC ENVIRONMENTAL DISCLOSURE REPORT**



# Environmental Disclosure Report

# SUBSCRIBER INFORMATION

**Contact Person:** MIKE GROVER  
**Name:** GEO SYSTEM CONSULTANTS  
**Address:** 18218 MCDURMOTTE  
IRVINE, CA 92714

**Phone:** 714-553-8757  
**Project:** CAMP SAN LUIS OBISPO  
**DATE:** 04/06/95

## SUBJECT PROPERTY

**Legal Description:** NONE  
**Address:** P.O. BOX 8104  
SAN LUIS OBISPO, CA 93403

**Order No.:** MR95137

## REQUESTED INFORMATION

Enviro Scan

### **Government Records Report**

This report is limited in scope and accuracy to the available government records searched as listed in the table of contents. This report represents only a search of those records as of the date specified herein. The specific government records searched do not include all sites of environmental contamination or risk. The subscriber acknowledges that NATEC assumes no responsibility for the completeness and accuracy of the recorded lists as compiled by the various governmental agencies. The purpose of this report is for a records search and is not a substitute for a Phase I Environmental Audit.

### **Site Map**

NATEC Site Maps are based on both U.S. Geological Survey elevation data and U.S. Government Tiger files. The subscriber acknowledges that NATEC assumes no responsibility for the completeness or accuracy of such maps or coordinates derived there from.

### **Title Custody Report**

The Title Custody Report represents a search of the recorded chain of title documents regarding a specific real property. The title reports will show a summary of those deeds, easements, right of ways, and ground leases of record as compiled by the respective County Recorder's Office.

The subscriber acknowledges that other documents that may record pertinent information to the subject property will not be provided in the title report. All services performed shall include only the subject property and shall not include any easements, reversion or other interests in abutting properties. This report is for information only and shall not be deemed to constitute title insurance and will not determine status of ownership or liens on the subject property.

### **Historical Profile**

The Historical Profile report will include a government records search and a written review of pertinent historical aerial photographs of the site on each available decade, including one aerial photograph.

NATEC services does not include an evaluation of the information contained in the recorded documents. The subscriber acknowledges that government records and title records may not include certain information and accepts the limitations of the service provided herein.

# TABLE OF CONTENTS

## **Reference Materials**

3D Survey Maps	A
Statistical Summary	B
Quick Reference	C
RCRA Summary	D
CAL-Sites Summary	E

## **Detailed Enviro-Scan Data**

### Government Records

<u>Searched</u> CERCLIS:	<u>Agencies and Source Lists</u> E.P.A. Superfund Sites	1
NPL:	E.P.A. National Priority Lists	2
LIENS:	E.P.A. Federal Superfund Liens	3
SWIS:	C.W.M. Solid Waste Information System List	4
RCRA:	E.P.A. Hazardous Waste Generators	8
LUST:	W.R.C.B. Underground Leaking Tanks	15
CORTESE:	C.W.M.B. Hazardous Waste Substance Sites	17
BEP:	C.D.H.S. Bond Expenditure Plan	19
CAL-SITES:	E.P.A. CAL - Sites	20
WDS:	H.M.D.M. Waste Discharge System (NPDES Permits)	21
SARA:	E.P.A. Superfund Amendments and Reauthorization Act	28
WMUDS:	W.R.C.B. Waste Management Unit Discharge Systems	29
UST:	W.R.C.B. Registered Underground Storage Tanks	53
ERNS:	E.P.A. Emergency Response Notification System	55

# SUBJECT PROPERTY

## STATISTICAL REVIEW

This review is provided as a convenience only. The intent of this review is to flag immediate problems. It is not meant as a substitute for a Government Records Report.

<u>List Name</u>	<u>Date</u>	<u>0.5 Mile</u>	<u>1 Mile</u>	<u>Over 1 Mile</u>	<u>Unknown</u>	<u>Total</u>
CERCLIS	8/94	0	0	0	0	0
NPL	8/94	0	0	0	0	0
LIENS	11/92	0	0	0	0	0
SWIS	3/93	0	0	0	4	4
RCRA	1/95	0	0	2	15	17
LUST	1/95	0	0	0	3	3
CORTESE	11/90	0	0	0	4	4
BEP	1/90	0	0	0	0	0
CAL-SITES	8/94	0	0	0	2	2
WDS	8/94	0	0	1	5	6
SARA	8/93	0	0	0	0	0
WMUDS	1/95	0	0	0	11	11
UST	8/94	0	0	0	5	5
ERNS	6/93	0	N/A	N/A	0	0
Total		0	0	0	49	52

Number of CAL-SITES:

Other than NFA: 0  
Superfund: 0

Number of sites in immediate vicinity (<.1 miles): 0

Lists of immediate concern;  
None.

Chemicals reported in the area of this report include:

12035

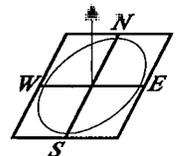
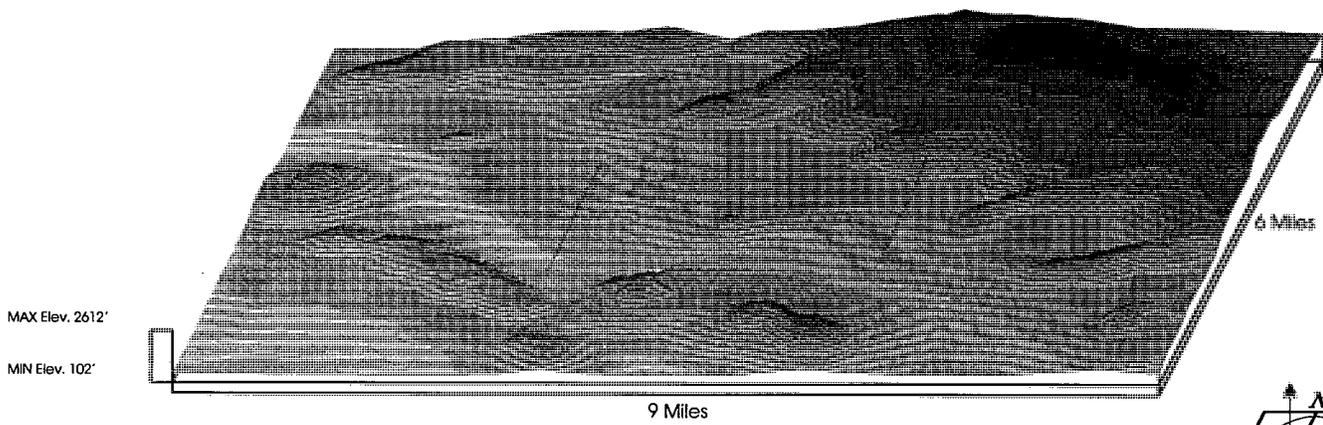
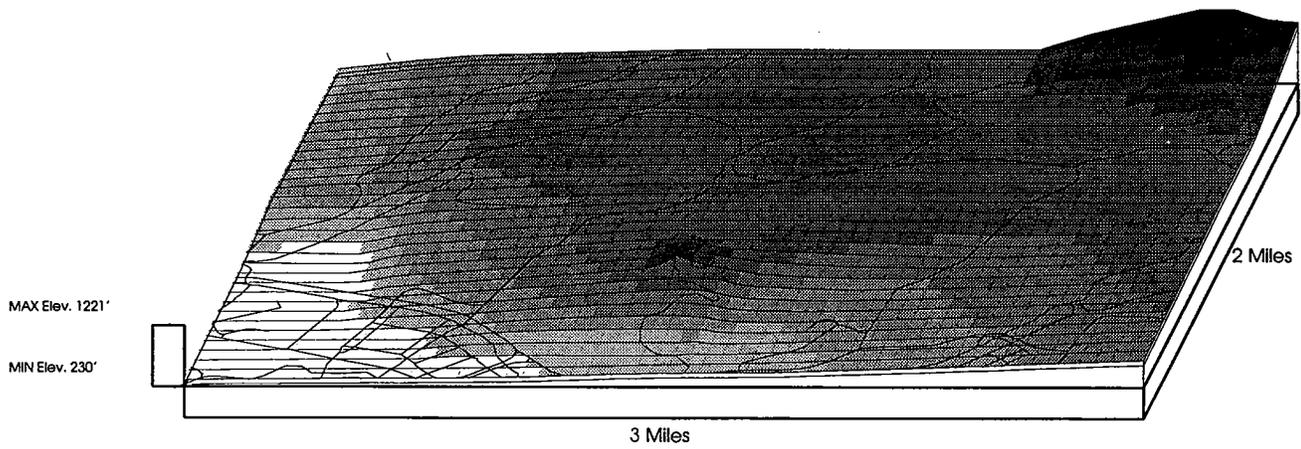
12034

13

Subject Elevation: 648'

# Topographic Survey Model

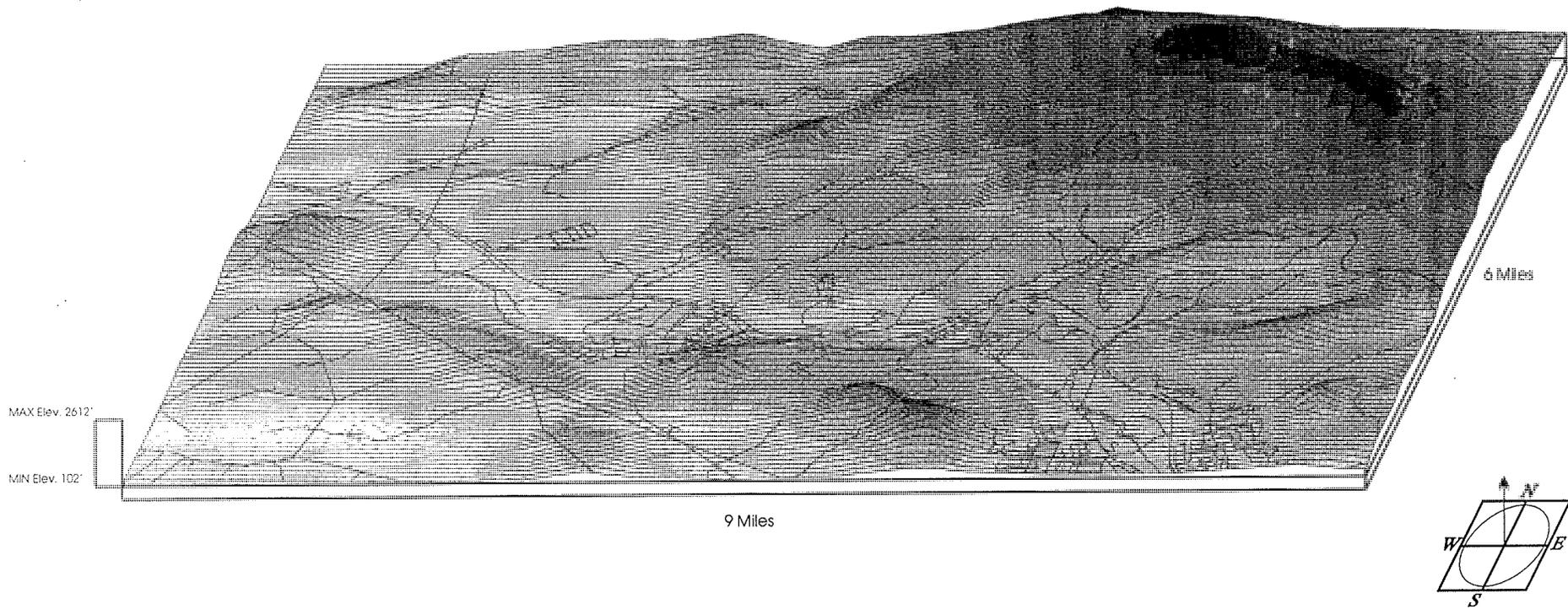
Center of Model  
P.O. BOX 8104  
SAN LUIS OBISPO, CA 93403  
ID:MR95137



\* Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source.

# Topographic Survey Model

Center of Model  
P.O. BOX 8104  
SAN LUIS OBISPO, CA 93403  
ID:MR95137



\* Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source

## QUICK REFERENCE LIST

This report provides a brief list of site information in a sorted by address format for quick and convenient reference when performing on site inspections.

<u>Site</u>	<u>Address Number</u>	<u>Street Name</u>	<u>Page</u>	<u>Bearing</u>	<u>Agency</u>
FIERO LANE WATER COMPANY, CLASS II SWDS		P O BOX 8104	25		SUBJECT WDS
CLASS II SWDS			27		WDS
TURRY ROAD			41		WMUDS
POLY CANYON			47		WMUDS
			51		WMUDS
MORRO BAY OIL SLUDGE CLOS		P O BOX 1617	37		WMUDS
DIAMOND OIL SERV		PO BOX 4417	12		RCRA
CALIFORNIA NATIONAL GUARD		BLDG 1328 CAMP	11		RCRA
CALIFORNIA POLYTECHNIC ST		CAMPUS	43		WMUDS
COLD CANYON LANDFILL SOLI		COLD CANYON OFF STATE HWY	6		SWIS
CAL POLY LANDFILL		5 MI ON POLY CANYON RD	7		SWIS
TEXACO INC ESTERO BAY TAN		LOT 34 RANCHO MORRO CAYUC	9		RCRA
MORRO BAY CITY OF		CHORRO CREEK RD	12		RCRA
CDF CAMP CUESTA		BLDG 962 CAMP CUESTA	53		UST
PACIFIC BELL	9315	ENCINA AVE	14		RCRA
AMER TELE & TELE CO SAN L		W LOS OSO 5 MIOF FOOTHILL RD	10		RCRA
USNG CA CAMP SAN LUIS OBI		HIGHWAY I	11		RCRA
CUESTA COLLEGE		HIGHWAY I PO BOX J	15		LUST
WALTER RANCH		HIGHWAY ONE	39		WMUDS
CAMP SAN LUIS OBISPO - NA		W HIGHWAY 10F HIGHWAY 101	18		CORTESE
CAMP SAN LUIS OBISPO - NA		W HIGHWAY 10F HIGHWAY 101	20		CAL-SIT
CALIFORNIA MEN'S COLONY		HIGHWAY I	17		CORTESE
CUESTA USD CUESTA COLLEGE		HWY I	12		RCRA
CALIFORNIA MEN'S COLONY		HWY I	15		LUST
CAMP SAN LUIS OBISPO		HWY I	53		UST
CUESTA COLLEGE		HWY I	54		UST
STATE MILITARY DEPT. OMS		HWY I	54		UST
CALIFORNIA MENS COLONY	2100	HWY I	53		UST
CAMP SAN LUIS OBISPO		HWY-I	11		RCRA
SAN LUIS CSD BISHOPS PEAK	451	JAYCEE DR	9	3.6 SE	RCRA
SAN LUIS OBISPO COUNTY	1355	KANSAS AVE	16		LUST
CAMP SAN LUIS OBISPO BLDG		KANSAS& HWY I AVE	8	1.3 SE	RCRA
LAUREATE SCHOOL	880	LAUREATE LN	22	3.8 SE	WDS
SAN LUIS OBISPO COUNTY-PE		SANTA MARGARITA AREA	45		WMUDS
OLIVERO PROPERTY		NONE	35		WMUDS
CAMP SAN LUIS OBISPO LAND		O'CONNOR WAY	5		SWIS
CAMP SAN LUIS SOLID WASTE	500	W FTOF O'CONNORWAY ENTRNC	30		WMUDS
CAMP SAN LUIS SOLID WASTE	500	W FTOF O'CONNORWAY ENTRNC	26		WDS

## QUICK REFERENCE CONTINUED

<u>Site</u>	<u>Address</u> <u>Number</u>	<u>Street</u> <u>Name</u>	<u>Page</u>	<u>Bearing</u>	<u>Agency</u>
CAMP SAN LUIS OBISPO		CAMP SAN LUIS OBISPO	18		CORTESE
MEN'S COLONY		CAMP SAN LUIS OBISPO	24		WDS
OFFICE OF CO SUPT OF SCHO		HWY 1 & RANCHO EL CHORRO	9		RCRA
ATASCADERO USD CARRISA PL		STAR ROUTE BOX 88A	13		RCRA
CALTRANS DISTRICT 05		STAR ROUTE	13		RCRA
HART ACOUSTICS		STAR ROUTE BOX 238	20		CAL-SIT
PACIFIC BELL		CAL STATE POLY	10		RCRA
PACIFIC BELL		N END OF STEINER CREEK RD	10		RCRA
PACIFIC BELL		TASSAJARA CREEK	13		RCRA
SANTA MARGARITA		W OF TOWN	49		WMUDS
LOS OSOS LANDFILL		TURRI RD	4		SWIS
LOS OSOS LANDFILL		TURRI RD	18		CORTESE
LOS OSOS LANDFILL CLOSURE	2295	TURRI RD	23		WDS
LOS OSOS LANDFILL CLOSURE	2295	TURRI RD	33		WMUDS

# RCRA SUMMARY

This report provides a brief list of RCRA facilities, found within the specified radius, grouped by site class. For a more detailed site description, refer to the page number associated with each site.

<u>Site Class</u>	<u>Source</u>	<u>Site Name</u>	<u>Site Address</u>	<u>Bearing</u>	<u>Page</u>
<b>Treatment Storage Disposal Facility</b>					
		Not found.			
<b>Transporter Facility</b>					
Notification		TEXACO INC ESTERO BAY TANK F	LOT 34 RANCHO MORRO CAYUCOS		
Notification		PACIFIC BELL	NORTH END OF STEINER CREEK RD		
Notification		PACIFIC BELL	CAL STATE POLY		
Notification		DIAMOND OIL SERV	PO BOX 4417		
Notification		PACIFIC BELL	TASSAJARA CREEK		
Notification		PACIFIC BELL	9315 ENCINA AVENUE		
<b>Large Quantity Generator</b>					
Notification		CAMP SAN LUIS OBISPO BLDG 12	KANSAS AVE & HWY 1	1.3 SE	8
Notification		TEXACO INC ESTERO BAY TANK F	LOT 34 RANCHO MORRO CAYUCOS		
Notification		PACIFIC BELL	NORTH END OF STEINER CREEK RD		
Notification		PACIFIC BELL	CAL STATE POLY		
Notification		AMER TELE & TELE CO SAN LUIS	LOS OSO RD .5 MI W OF FOOTHILL		
Notification		CALTRANS DISTRICT 05	STAR ROUTE		
Notification		PACIFIC BELL	TASSAJARA CREEK		
Notification		PACIFIC BELL	9315 ENCINA AVENUE		
<b>Small Quantity Generator</b>					
Notification		USNG CA CAMP SAN LUIS OBISPO	HIGHWAY 1		
Notification		CAMP SAN LUIS OBISPO	HWY-1		
Notification		MORRO BAY CITY OF	CHORRO CREEK RD		
<b>Conditionally Exempt Small Quantity Generator</b>					
		Not found.			
<b>Burner Blender</b>					
		Not found.			

# CAL-SITES SUMMARY

This report provides a list of Cal-Sites facilities, found within the specified radius, with status codes other than No Further Action (NFA). For a more detailed site description, refer to the page number associated with each site.

<u>Site Class</u>	<u>Site Name</u>	<u>Site Address</u>	<u>Bearing</u>	<u>Page</u>
Non-NFA Sites				
PEARM	CAMP SAN LUIS OBISPO - NATIO	HIGHWAY 1 WEST OF HIGHWAY 101		

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

## **CERCLIS**

(Federal)

The information contained in this report is the current database provided by the E.P.A. list as of August, 1994.

The U.S. Environmental Protection Agency (E.P.A.) has compiled this list of contaminated properties for designation under the Federal Superfund Program pursuant to the *Comprehensive Environmental Response Compensation and Liability Act (CERCLA)*. These sites represent environmental concern for the discharge of hazardous materials by hazardous waste generators, treatment and storage facilities, and hazardous waste disposal sites.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

---

The NATEC database listing as of this date indicates no locations within a 4.0 mile radius of the subject property.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

**NPL**  
(Federal)

NATIONAL PRIORITY LIST

The information contained in this report is the current database provided by the E.P.A. list as of August, 1994.

The Environmental Protection Agency has compiled this list from the designated CERCLIS list. The NPL sites are prioritized as to their significant risk to human health and the environment. The list targets those sites to receive remedial funding under the *Comprehensive Environmental Response Conservation and Liability Act (CERCLA)*. The NPL lists the nation's highest priority sites for remedial action. Only NPL sites can receive CERCLA funding.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

---

The NATEC database listing as of this date indicates no locations within a 4.0 mile radius of the subject property.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

## **SUPERFUND (LIENS)**

### **FEDERAL SUPERFUND LIENS**

The information contained in this report is the current database provided by the E.P.A. list as of November, 1992.

Under the authority granted the E.P.A. by the *Comprehensive Environmental Response Conservation and Liability Act (CERCLA)*, E.P.A. is authorized to place a Superfund Lien on property that the agency has spent money on for remedial action or notified the owner of the potential of liability for remedial action.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

---

The NATEC database listing as of this date indicates no locations within a 4.0 mile radius of the subject property.

**SWIS**

**SOLID WASTE INFORMATION SYSTEMS**

The information in this report is the current list prepared by the California Waste Management Board as of March, 1993.

The California Waste Management Board maintains this list pursuant to the Solid Waste Management and Resource Recovery Act of 1972. The list contains an inventory of active, inactive, and closed solid waste disposal and transfer facilities.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

**FACILITY DATA**

**Site Information**

SWIS: 40-AA-0007 CATEGORY: LANDFILL  
Name: LOS OSOS LANDFILL  
Location: TURRI RD  
Place: LOS OSOS93405

**Operator Data**

Name: NOT APPLICABLE  
Phone:  
Company:  
Address:  
Place:

**Land Owner Data**

Name: MR GEORGE G MARTINEZ  
Title: SOLE PROP  
Phone: 8055433269  
Company:  
Address: RTE 2 BOX 795  
Place: SAN LUIS OBISPO 93401

**Facility Characteristics**

Permit Status: PERMITTED  
Operational Status:  
CLOSED  
Operator type: N/A  
Land Owner: PRIVATE  
Types Wastes Received:  
CON DEM,MIX MUN,TIRES  
Tons-Per-Day: 0  
Permit Date: 01/30/85  
Closure Year: 1988

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

SWIS FACILITY DATA CONTINUED

Site Information

SWIS: 40-AA-0009 CATEGORY: LANDFILL  
Name: CAMP SAN LUIS OBISPO LANDFILL  
Location: O'CONNOR WAY  
Place: LOS OSOS93405

Operator Data

Name: MR HARRY MACHADO  
Title: FACILITIES ENGINEER  
Phone: 8055448578  
Company: CAMP SAN LUIS OBISPO  
Address: P O BOX 8104  
Place: SAN LUIS OBISPO 93403

Land Owner Data

Name: MR SCOTT HILYARD  
Title: ENVIRONMENTAL PLANNER  
Phone: 9169733340  
Company: STATE MILITARY DEPT  
Address: 2829 WATT AVE  
Place: SACRAMENTO 95821

Facility Characteristics

Permit Status: PERMITTED

Operational Status:  
INACTIVE

Operator type: STATE

Land Owner: STATE

Types Wastes Received:

CON DEM,AGR,MIX MUN,SLG SEP

Tons-Per-Day: 0

Permit Date: 12/12/88

Closure Year: 2002

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

SWIS FACILITY DATA CONTINUED

Site Information

SWIS: 40-AA-0004 CATEGORY: LANDFILL  
Name: COLD CANYON LANDFILL SOLID WASTE DS  
Location: COLD CANYON OFF STATE HWY 227  
Place: SAN LUIS OBISPO

Operator Data

Name: CHARLES CATTANEO  
Title: PRES  
Phone: 8055498332  
Company: COLD CANYON LANDFILL INC  
Address: 970 MONTEREY  
Place: SAN LUIS OBISPO 93401

Land Owner Data

Name: MR AL RIZZOLI  
Title: CO-OWNER  
Phone: 8055498332  
Company: CORRAL DE PIEDRA LAND CO  
Address: 1319 MARSH ST  
Place: SAN LUIS OBISPO 93401

Facility Characteristics

Permit Status: UNPERMITTED  
Operational Status:  
ACTIVE  
Operator type: PRIVATE  
Land Owner: PRIVATE  
Types Wastes Received:  
CON DEM,HAZ,IND PRO,LVS CLP,MIX MUN,ASB,SLG SEP  
Tons-Per-Day: 393  
Permit Date: 08/16/79  
Closure Year: 2003

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

SWIS FACILITY DATA CONTINUED

Site Information

SWIS: 40-AA-0016 CATEGORY: LANDFILL  
Name: CAL POLY LANDFILL  
Location: .5 MI ON POLY CANYON RD  
Place: SAN LUIS OBISPO

Operator Data

Name: DAN VANAKER  
Title: SAFETY OFFICER  
Phone:  
Company: PLANT OPERATIONS PUBLIC SAFETY  
Address: CAL POLY STATE UNIVERSITY  
Place: SAN LUIS OBISPO 93407

Land Owner Data

Name: DAN VANAKER  
Title: SAFETY OFFICER  
Phone:  
Company: PLANT OPERATIONS PUBLIC SAFETY  
Address: CAL POLY STATE UNIVERSITY  
Place: SAN LUIS OBISPO 93407

Facility Characteristics

Permit Status: UNPERMITTED  
Operational Status:  
CLOSED  
Operator type: STATE  
Land Owner: STATE  
Types Wastes Received:  
MIXED MUNICIPAL  
Tons-Per-Day: 0  
Permit Date:  
Closure Year: 1972

**RCRA**  
(FEDERAL RCRIS)

**RESOURCE CONSERVATION AND RECOVERY ACT**

The information in this report is the current database provided by the E.P.A. as of January, 1995.

Under the Resource Conservation and Recovery Act, the Environmental Protection Agency compiles this list classification of generators of hazardous waste materials. Generators in this classification are required to have U.S. E.P.A. I.D. numbers on all waste manifest disposal records. This list is inclusive of, but not limited to: transporters, conditionally exempt small quantity generators, small quantity generators, large quantity generators, treatment/storage/disposal facilities, burner/blenders, transporters, and handler violations.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

FACILITY DATA

Distance: 1.3 mile Southeast  
Facility ID: CAD981454044  
Facility Name: CAMP SAN LUIS OBISPO BLDG 1201  
Contact: ENVIRONMENTAL MANAGER 805/549-5910  
Address: KANSAS AVE & HWY 1  
City, State, Zip: SAN LUIS OBISPO, CA 93401  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

RCRA FACILITY DATA CONTINUED

Distance: 3.6 mile Southeast  
Facility ID: CAD982016461  
Facility Name: SAN LUIS CSD BISHOPS PEAK ELEMENTARY SCH  
Address: 451 JAYCEE DR  
City, State, Zip: SAN LUIS OBISPO, CA 93428  
Date of Existence: N/A

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAD000631416  
Facility Name: TEXACO INC ESTERO BAY TANK FARM  
Contact: ENVIRONMENTAL MANAGER 213/385-0515  
Address: LOT 34 RANCHO MORRO CAYUCOS  
City, State, Zip: SAN LUIS OBISPO COUNTY, CA 93401  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Handler transports wastes, but commercial status is unknown

Generator: Large Quantity Generator

Burner/Blender: Unverified

TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAD982016792  
Facility Name: OFFICE OF CO SUPT OF SCHOOLS  
Address: HWY 1 & RANCHO EL CHORRO  
City, State, Zip: SAN LUIS OBISPO, CA 93401  
Date of Existence: N/A

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

RCRA FACILITY DATA CONTINUED

Facility ID: CAT080024169  
Facility Name: PACIFIC BELL  
Contact: ENVIRONMENTAL MANAGER 408/491-6029  
Address: NORTH END OF STEINER CREEK RD  
City, State, Zip: SAN LUIS OBISPO, CA 93401  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Handler transports wastes, but commercial status is unknown  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAT080024292  
Facility Name: PACIFIC BELL  
Contact: ENVIRONMENTAL MANAGER 408/491-6029  
Address: CAL STATE POLY  
City, State, Zip: SAN LUIS OBISPO, CA 93401  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Handler transports wastes, but commercial status is unknown  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAT080031016  
Facility Name: AMER TELE & TELE CO SAN LUIS OBISPO  
Contact: ENVIRONMENTAL MANAGER 415/442-2970  
Address: LOS OSO RD .5 MI W OF FOOTHILL  
City, State, Zip: SAN LUIS OBISPO, CA 93401  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

RCRA FACILITY DATA CONTINUED

Facility ID: CA7211890481  
Facility Name: CALIFORNIA NATIONAL GUARD  
Address: BLDG 1328 CAMP  
City, State, Zip: SAN LUIS OBISPO, CA 93403  
Date of Existence: N/A

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

Facility ID: CA8572890095  
Facility Name: USNG CA CAMP SAN LUIS OBISPO  
Contact: ENVIRONMENTAL MANAGER 916/973-3340  
Address: HIGHWAY 1  
City, State, Zip: SAN LUIS OBISPO, CA 93403  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Small Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

Facility ID: CAD981369143  
Facility Name: CAMP SAN LUIS OBISPO  
Contact: ENVIRONMENTAL MANAGER 916/920-6505  
Address: HWY-1  
City, State, Zip: SAN LUIS OBISPO, CA 93403  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Small Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

RCRA FACILITY DATA CONTINUED

Facility ID: CAD981370539  
Facility Name: DIAMOND OIL SERV  
Contact: ENVIRONMENTAL MANAGER 805/543-4977  
Address: P.O. BOX 4417  
City, State, Zip: SAN LUIS OBISPO, CA 93403  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Handler transports wastes, but commercial status is unknown  
Generator: Not a generator, verified.  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAD982016784  
Facility Name: CUESTA USD CUESTA COLLEGE  
Address: HWY 1  
City, State, Zip: SAN LUIS OBISPO, CA 93403  
Date of Existence: N/A

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

Facility ID: CAD981978067  
Facility Name: MORRO BAY CITY OF  
Contact: ENVIRONMENTAL MANAGER 805/772-1214  
Address: CHORRO CREEK RD  
City, State, Zip: MORRO BAY, CA 93442  
Date of Existence: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Small Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:

Unknown - no verification flags are set.

This handler has violations outstanding for:

No violations reported.

RCRA FACILITY DATA CONTINUED

Facility ID: CAD982016636  
Facility Name: ATASCADERO USD CARRISA PLAINS ELEM  
Address: STAR ROUTE BOX 88A  
City, State, Zip: SANTA MARGARITA, CA 93453  
Date of Existance: N/A

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

Facility ID: CAD982040784  
Facility Name: CALTRANS DISTRICT 05  
Contact: ENVIRONMENTAL MANAGER 805/475-2260  
Address: STAR ROUTE  
City, State, Zip: SANTA MARGARITA, CA 93453  
Date of Existance: N/A

The following data was derived from Notification.

Transporter: Unverified  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

Facility ID: CAT080024193  
Facility Name: PACIFIC BELL  
Contact: ENVIRONMENTAL MANAGER 408/491-6029  
Address: TASSAJARA CREEK  
City, State, Zip: CUESTA SIDING, CA 93453  
Date of Existance: N/A

The following data was derived from Notification.

Transporter: Handler transports wastes, but commercial status is unknown  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

This handler has been verified as:  
Unknown - no verification flags are set.

This handler has violations outstanding for:  
No violations reported.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

RCRA FACILITY DATA CONTINUED

Facility ID: CAT080027154  
Facility Name: PACIFIC BELL  
Contact: ENVIRONMENTAL MANAGER 408/491-6029  
Address: 9315 ENCINA AVENUE  
City, State, Zip: SANTA MARGARITA, CA 93453  
Date of Existance: N/A

**The following data was derived from Notification.**

Transporter: Handler transports wastes, but commercial status is unknown  
Generator: Large Quantity Generator  
Burner/Blender: Unverified  
TSD: Unverified

**This handler has been verified as:**

Unknown - no verification flags are set.

**This handler has violations outstanding for:**

No violations reported.

## LUST

### LEAKING UNDERGROUND STORAGE TANKS

The information in this report is the current list prepared by the California Water Resources Control Board as of January, 1995.

The State of California Water Resources Control Board (WRCB) in Sacramento provides a list of all leaks of hazardous substances from underground tanks. This database provides information on contamination case types. Additional sources of information are provided by the nine local offices of the WRCB in California.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

#### FACILITY DATA

Case No.: 91  
 Site: CALIFORNIA MEN'S COLONY  
 Address: HWY 1  
 City,State,Zip: SAN LUIS OBISPO CA 93401  
 Substance: 12034  
                   :DIESEL  
 Report Date: 19880714  
 Revision Date: 19890215  
 Date pollution characterization began:19880809  
 Date closure letter issued (site closed):  
 Case Type: The type of resources affected or extent of the resources affected are not known.  
 Status: Signed off, remedial action completed or deemed unnecessary.

Case No.: 397  
 Site: CUESTA COLLEGE  
 Address: HIGHWAY 1 PO BOX J  
 City,State,Zip: SAN LUIS OBISPO CA 93403  
 Substance: 13  
                   :SOLVENTS  
 Report Date: 19870310  
 Revision Date: 19880120  
 Date pollution characterization began:19870619  
 Date remediation plan was submitted:19870827  
 Date closure letter issued (site closed):  
 Case Type: Only Soil has been affected.  
 Status: Signed off, remedial action completed or deemed unnecessary.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

LUST FACILITY DATA CONTINUED

**Case No.:** 2232  
**Site:** SAN LUIS OBISPO COUNTY  
**Address:** 1355 KANSAS AVE  
**City,State,Zip:** SAN LUIS OBISPO CA 93405  
**Substance:** 12035  
:WASTE OIL  
**Lead Agency:** Regional  
**Report Date:** 19910731  
**Revision Date:** 19930316  
**Date closure letter issued (site closed):**  
**Case Type:** Other resources are affected.  
**Status:** Signed off, remedial action completed or deemed unnecessary.

## CORTESE

### STATE OF CALIFORNIA OFFICE OF PLANNING AND RESEARCH

The information contained in this report is compiled by the State of California's Governors Office and is current as of November, 1990.

This is a listing of potential and confirmed hazardous waste and substance sites throughout California. The information in this list was consolidated within the State Office of Planning and Research. The data for the list was received from the State Water Resources Control Board (WRCB), The California Waste Management Board (CWMB), and the Department of Health Services (DHS).

This database is no longer in production and is provided as a convenience only.

DHS: Records that have been compiled by the Toxic Substances Control Division of the Department of Health Services. This code indicates an abandoned hazardous waste site.

DHS5: Sites pursuant to Section 25356 of the Health and Safety Codes (sites included under the Hazardous Substance Cleanup Bond Act).

DHS2: Records that have been compiled by the Environmental Health Division of the Department of Health Services. This code indicates public water drinking wells that serve less than 200 connections ("small wells").

WRCB: Records compiled by the Water Resources Control Board. These are sites of reported leaks that have been investigated by the WRCB. Leak sites do not necessarily lie within incorporated boundaries of listed cities.

DHS3: Records that have been compiled by the Environmental Health Division of the Department of Health Services and consist of public water drinking wells that serve more than 200 connections ("large wells").

CWMB: Records compiled by the California Waste Management Board. These are solid waste disposal facilities from which there is a known migration of hazardous waste.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

#### FACILITY DATA

Source: WRCB  
Site Name: CALIFORNIA MEN'S COLONY  
Location: HIGHWAY 1  
City and zip: SAN LUIS OBISPO 93401

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

CORTESE FACILITY DATA CONTINUED

Source: DHS1  
Site Name: CAMP SAN LUIS OBISPO - NATIONAL GUA  
Location: HIGHWAY 1 WEST OF HIGHWAY 101  
City and zip: SAN LUIS OBISPO 93401

Source: WRCB  
Site Name: CAMP SAN LUIS OBISPO  
Location: CAMP SAN LUIS OBISPO  
City and zip: SAN LUIS OBISPO 93403

Source: CWMB  
Site Name: LOS OSOS LANDFILL  
Location: TURRI RD  
City and zip: LOS OSOS 93405

## **BEP**

### **BOND EXPENDITURE PLAN**

The information in this report is the current list prepared by the California Department of Health Services as of January, 1990.

Under the California Hazardous Substance Bond Act of 1984, the California Department of Health Services has developed a listing of those hazardous waste sites subject to develop a site specific expenditure plan for an appropriation of funds for cleanup under the Bond Expenditure Plan.

This database was incorporated into the CAL-SITES database. It is no longer in production and is provided as a convenience only.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

The NATEC database listing as of this date indicates no locations within a 4.0 mile radius of the subject property.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

## CAL-SITES

The information contained in this report is the current database provided by the E.P.A. as of August, 1994.

The CDHS compiled this database pursuant to Section 253596 of the California Health and Safety Code. The list contains information on potential hazardous waste sites that have been identified by the Historical Abandoned Site Survey Program. The CDHS researched a major portion of the various state environmental agencies that could possibly help identify potential hazardous waste sites. Once sites are confirmed as hazardous sites they may be merged into the database of the CORTESE List and/or the Bond Expenditure Program (BEP) List. Names may remain on this list even though a determination has been made that no leak had occurred and the DHS is requiring no further action to protect the environment or public health.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

---

### FACILITY DATA

Facility No.: 40-91-0001  
Facility Name: CAMP SAN LUIS OBISPO - NATIONAL GUARD  
Address: HIGHWAY 1 WEST OF HIGHWAY 101  
City and zip: SAN LUIS OBISPO 93401  
Status: PEA Required, Medium Priority  
DTSC has judged the site to pose a medium pulic health or environmental threat.  
Status Date: 05/01/84

Facility No.: 40-36-0009  
Facility Name: HART ACOUSTICS  
Address: STAR ROUTE BOX 238  
City and zip: SANTA MARGARITA 93453  
Status: No Further Action for DTSC  
DTSC has judged the site to require no further departmental action based on available information concerning the site's potential to threaten public health and/or the environment.  
Status Date: 03/23/83

## WDS

### **WASTE DISCHARGE SYSTEMS**

The information in this report is produced by the State of California Environmental Affairs Agency Office of Hazardous Material Data Management.

This data base contains information on sites which have been issued waste discharge requirements. Under State and Federal regulations, generators are allowed to discharge to publicly owned treatment works (POTW's) specified levels of waste water toxins. (Some of these industries have categorical pretreatment standards for their discharges; other companies may fall under locally developed limits.) The current information was compiled from the agency published list as of August, 1994.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

---

### FACILITY DATA

WDS FACILITY DATA CONTINUED

Distance: 3.8 mile Southeast

Site Information

ID: 3 401055001  
Site: LAUREATE SCHOOL  
Address: 880 LAUREATE LANE  
City and Zip: SAN LUIS OBISPO  
Phone: 805-544-2141  
Contact: MS. SCHMID

Operator Data

Operator: LAUREATE CHILD & FAMILY CENTER  
Address: 1534 LIZZIE STREET  
City and Zip: SAN LUIS OBISPO ,CA 93401  
Phone: 805-544-2141  
Contact:

Facility Characteristics

Status: Active  
NPDES No.:  
Operator type: Private  
Facility type: Municipal  
Standard Industrial Classification Codes  
Primary: 8351  
Secondary: 8211

Waste types:

Designated Domestic Sewage  
Domestic Sewage

Design Flow: 0.0001 Million Gallons per Day  
Baseline Flow: 0.0001 Million Gallons per Day

Self Monitoring

Report Frequency: No reporting requirements  
Threat: Minor

Reclamation

Requirements: Unknown  
Pretreatment: This facility is not a POTW  
Complexity: Other

WDS FACILITY DATA CONTINUED

Site Information

ID: 3 400307001  
Site: LOS OSOS LANDFILL CLOSURE  
Address: 2295 TURRI RD  
City and Zip: SAN LUIS OBISPO 93405  
Phone: 805-528-1752  
Contact:

Operator Data

Operator: SAN LUIS OBISPO COUNTY  
Address: COUNTY GOVERNMENT BUILDING  
City and Zip: SAN LUIS OBISPO ,CA 93408  
Phone: 805-528-1752  
Contact: CARMEN FOJO

Facility Characteristics

Status: Active  
NPDES No.:  
Operator type: County  
Facility type: Solid Waste Site - Class III  
Standard Industrial Classification Codes  
Primary: 4953  
Secondary:  
Waste types:  
Nonhazardous Solid Waste Solid Wastes  
Solid Wastes  
Design Flow: 0.0001 Million Gallons per Day  
Baseline Flow: 0.0001 Million Gallons per Day  
Self Monitoring  
Report Frequency: Quarterly  
Threat: Moderate  
Reclamation  
Requirements: Unknown  
Pretreatment: This facility is not a POTW  
Complexity:  
Facility having physical, chemical or biological waste treatment system, class II or III disposal sites or facilities without treatment system that are complex

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WDS FACILITY DATA CONTINUED

Site Information

ID: 3 400108001  
Site: MEN'S COLONY  
Address: CAMP SAN LUIS OBISPO  
City and Zip: SAN LUIS OBISPO  
Phone: 805-544-2375  
Contact: MICHAEL VALVERDE

Operator Data

Operator: CA DEPT OF CORRECTIONS  
Address: P. O. BOX 8101  
City and Zip: SAN LUIS OBISPO ,CA 93409  
Phone: 805-544-2375  
Contact: MICHAEL VALVERDE

Facility Characteristics

Status: Active  
NPDES No.: CA0047856  
Operator type: State  
Facility type: Municipal  
Standard Industrial Classification Codes

Primary: 9223

Secondary:

Waste types:

Designated Domestic Sewage with Ind. Waste  
Domestic Sewage with Ind. Waste

Design Flow: 1.2000 Million Gallons per Day

Baseline Flow: 0.5000 Million Gallons per Day

Self Monitoring

Report Frequency: Monthly

Threat: Moderate

Reclamation

Requirements: Producer

Pretreatment: POTW does not have an approved pretreatment program

Complexity:

Major NPDES facility, non-NPDES facility that would be  
major is discharge was made to surface or ground waters  
or Class I disposal site

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WDS FACILITY DATA CONTINUED

**Site Information**

ID: 3 401023001  
Site: FIERO LANE WATER COMPANY, INC.  
Address:  
City and Zip: SAN LUIS OBISPO  
Phone: None  
Contact:

**Operator Data**

Operator: FIERO LANE WATER COMPANY, INC.  
Address: P.O. BOX 14704  
City and Zip: SAN LUIS OBISPO ,CA 93406  
Phone: None  
Contact: CHRIS ARNDT, ARNDT ELECTRONICS

**Facility Characteristics**

Status: Active  
NPDES No.:  
Operator type: Private  
Facility type: Municipal  
Standard Industrial Classification Codes  
Primary: 4952  
Secondary: 4941

**Waste types:**

Designated Domestic Sewage  
Domestic Sewage

Design Flow: 0.0100 Million Gallons per Day  
Baseline Flow: 0.0017 Million Gallons per Day

**Self Monitoring**

Report Frequency: Quarterly  
Threat: Minor

**Reclamation**

Requirements: Unknown  
Pretreatment: This facility is not a POTW

**Complexity:**

Facility having physical, chemical or biological waste treatment system, class II or III disposal sites or facilities without treatment system that are complex

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WDS FACILITY DATA CONTINUED

**Site Information**

ID: 3 400301001  
Site: CAMP SAN LUIS SOLID WASTE SITE  
Address: 500 FT W OF O'CONNORWAY ENTRNC  
City and Zip: SAN LUIS OBISPO  
Phone: 805-549-3810  
Contact: GEORGE KESSLER, SARGEANT

**Operator Data**

Operator: MILITARY DEPT / STATE OF CALIF  
Address: P.O. BOX 8104  
City and Zip: SAN LUIS OBISPO ,CA 934038104  
Phone: 805-549-3810  
Contact: GEORGE KESSLER, SARGEANT

**Facility Characteristics**

Status: Active  
NPDES No.:  
Operator type: State  
Facility type: Solid Waste Site - Class III  
Standard Industrial Classification Codes  
Primary: 9711  
Secondary:  
Waste types:  
Nonhazardous Solid Waste Solid Wastes  
Solid Wastes  
Design Flow: 0.0000 Million Gallons per Day  
Baseline Flow: 0.0000 Million Gallons per Day  
Self Monitoring  
Report Frequency: Quarterly  
Threat: Minor  
Reclamation  
Requirements: Unknown  
Pretreatment: This facility is not a POTW  
Complexity:

Facility having physical, chemical or biological waste treatment system, class II or III disposal sites or facilities without treatment system that are complex

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WDS FACILITY DATA CONTINUED

Site Information

ID: 5D401000001  
Site: CLASS II SWDS  
Address:  
City and Zip:  
Phone: None  
Contact:

Operator Data

Operator: SANTA FE ENERGY RESOURCES, INC  
Address: 5201 TRUXTUN AVENUE  
City and Zip: BAKERSFIELD ,CA 93309  
Phone: None  
Contact: PEGGY VEAL

Facility Characteristics

Status: Active  
NPDES No.:  
Operator type: Private  
Facility type: Solid Waste Site - Class II  
Standard Industrial Classification Codes  
Primary: 4953  
Secondary:  
Waste types:  
Designated Solid Wastes  
Solid Wastes  
Design Flow: 0.0000 Million Gallons per Day  
Baseline Flow: 0.0000 Million Gallons per Day  
Self Monitoring  
Report Frequency: Annual  
Threat: Minor  
Reclamation  
Requirements: Unknown  
Pretreatment: This facility is not a POTW  
Complexity:

Facility having physical, chemical or biological waste treatment system, class II or III disposal sites or facilities without treatment system that are complex

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

## SARA TITLE III

### TOXIC CHEMICAL RELEASE INVENTORY

Section 313 of the Emergency Planning and Community Right to Know Act (Title III of the Superfund Amendments and Re-authorization Act of 1986) requires certain facilities to file an annual toxic chemical release inventory form with the United States Environmental Protection Agency and the California Environmental Affairs Agency. Facilities are required to report releases to air, water, and land. The current information was compiled from the agency published list as of August, 1993.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

The NATEC database listing as of this date indicates no locations within a 4.0 mile radius of the subject property.

## WMUDS

### WASTE MANAGEMENT UNIT DATABASE SYSTEM

This report lists sites tracked by the State of California Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units.

WMUDS is intended as an enhancement to WDS (Waste Discharger System); it does not duplicate any information in WDS. In addition, WMUDS contains information regarding SWAT (Solid Waste Assessment Test program) and TPCA (Toxic Pits) programs. The current information was compiled from the agency published list as of January, 1995.

\* Distance coordinates are provided as a convenience only. Estimated distance is based on the mapping information provided by the U.S. Government Tiger files and may vary from local street guide maps. Elevation data is based on U.S. Geological Survey data and is limited in scope and accuracy to this source. Sites that are not provided with coordinates are generally the result of inaccurate or incomplete information provided by Federal and State government record lists.

#### FACILITY DATA

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 3 400301001  
NPDES #:  
Name: CAMP SAN LUIS SOLID WASTE SITE  
Contact: GEORGE KESSLER, SARGEANT Department:  
Phone: 8055493810  
Address: 500 FT W OF O'CONNORWAY ENTRNC  
City, State, Zip: SAN LUIS OBISPO ,CA93401

Landowner Data

Name: STATE OF CALIF MILITARY DEPART  
Contact: Department:  
Phone: 9163229900  
Address: P.O. BOX 214405  
City, State, Zip: SACRAMENTO, CA 95821

Agency Data

Name: MILITARY DEPT / STATE OF CALIF  
Contact: GEORGE KESSLER, SARGEANT Department: CAMP SAN LUIS OBISPO  
Phone: 8055493822  
Address: P.O. BOX 8104  
City, State, Zip: SAN LUIS OBISPO ,CA934038104  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 9711 - unknown  
Waste Type 1: Solid Wastes  
Nonhazardous Solid Wastes - Influent or solid wastes that contain nonhazardous waste.

Facility Complexity:

(B) - Facility having physical, chemical or biological waste treatment system, Class II or III disposal sites or facilities without treatment systems that are complex.

Facility Status:

Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements. Those facilities that are not under Waste Discharge Requirements (NURDs) are coded as ACTIVE when: 1) there is an active enforcement order for the facility, 2) there is a significant violation that has not been resolved to the satisfaction of the Regional Board, 3) after an inspection further action is required to mitigate a problem at the facility, or 4) there is some problem that the Regional Board considers significant enough to warrant classification as an ACTIVE facility.

Threat to Water Quality :

Minor threat to water quality

This facility is classified: SWAT WDS .  
WMU ID: 3 400301001-01  
WMU type: LANDFILL  
Liner type 1: SYNTHETIC  
Liner Comments:

WMUDS FACILITY DATA CONTINUED

Monitoring: Surface Water Ground Water  
Township: 30S,11E,13  
WMU Name: CAMP SAN LUIS OBISPO LANDFILL  
Type of WMU operation: TRENCH  
WMU classification (post 1984):III  
WMU classification (pre 1984): III  
WMU status: OPERATING  
Type of waste (post 1984):NON-HAZARD  
Type of waste (pre 1984): NON-HAZARD  
Year WMU will reach capacity: 2002  
Nearest fault name: UNKNOWN  
Distance to nearest fault (Feet): U  
WMU Size in (Acres) :5.2  
Average annual precipitation (Inches): 22  
Ground water depth (Feet): 20  
General comments:  
MAY HAVE RECEIVED WASTE PRIOR TO THE 70'S. ORDER 94-79 PROHIBITS  
WASTE DISPOSAL AT THE SITE. (NO WASTE DISPOSED FOR 2 YEARS)  
Formation name: HOLOCENE CLAY INTBD W/ SAND & GRAVEL  
type: QUAR ALLUVIUM  
permiability: LOW  
comments:  
SITE IS UNDERLAIN BY CROPLEY CLAYS. GW FLOWS NORTH WITH GRADIENT OF  
.25 FOOT/FOOT  
Statistics used to analyze water quality:Y  
WMU Monitoring status:VERIFICATION  
LCRS are not present.  
Will not withstand maximum probable/credible earthquake.  
Regional Board doesn't considers Vadose monitoring feasible.  
Water quality protection standard is set to background.  
Water quality protection standards haven't been exceeded.  
This facility accepts Asbestos.  
This facility accepts Sewage Sludge.  
SWIS ID: 40-AA-0009  
SWAT rank: 5  
SWAT status: EXEMPTED BY QUEST  
SWAT report review percent complete:  
SWAT listing was last edited on 08/19/94  
SWAT workplan status: EXEMPTED BY QUEST  
Non-Hazardous waste isn't above active level outside WMU in ground water.  
Non-Hazardous waste isn't above active level outside WMU in vadose zone.  
Non-Hazardous waste isn't below active level outside WMU in surface water.  
Non-Hazardous waste isn't below active level outside WMU in ground water.  
Non-Hazardous waste isn't below active level outside WMU in vadose zone.  
Ground water monitoring is inadequate.  
Hazardous waste isn't outside WMU in ground water.  
Non-Hazardous waste isn't above active level outside WMU in surface water.  
Surface water monitoring network isn't adequate.  
Hazardous waste isn't outside WMU in vadose zone.  
Four quarters of monitoring data isn't submitted.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WMUDS FACILITY DATA CONTINUED

Vadose zone monitoring network isn't adequate.  
Hazardous waste isn't outside WMU in surface water.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 3 400307001  
NPDES #:  
Name: LOS OSOS LANDFILL CLOSURE  
Contact: Department:  
Phone: 8055281752  
Address: 2295 TURRI ROAD  
City, State, Zip: SAN LUIS OBISPO ,CA93401

Landowner Data

Name: GEORGE SOUSA  
Contact: Department:  
Phone: 8055447225  
Address: P.O. BOX 1324  
City, State, Zip: SAN LUIS OBISPO, CA 93406

Agency Data

Name: SAN LUIS OBISPO COUNTY  
Contact: CARMEN FOJO Department:ENGINEERING DEPARTMENT  
Phone: 8057815252  
Address: COUNTY GOVERNMENT BUILDING  
City, State, Zip: SAN LUIS OBISPO ,CA93408  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 4953 - unknown  
Waste Type 1: Solid Wastes  
Nonhazardous Solid Wastes - Influent or solid wastes that contain nonhazardous waste.

Facility Complexity:

(B) - Facility having physical, chemical or biological waste treatment system, Class II or III disposal sites or facilities without treatment systems that are complex.

Facility Status:

Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements. Those facilities that are not under Waste Discharge Requirements (NURDs) are coded as ACTIVE when: 1) there is an active enforcement order for the facility, 2) there is a significant violation that has not been resolved to the satisfaction of the Regional Board, 3) after an inspection further action is required to mitigate a problem at the facility, or 4) there is some problem that the Regional Board considers significant enough to warrant classification as an ACTIVE facility.

Threat to Water Quality :

Moderate threat to water quality

This facility is classified: SWAT WDS .  
WMU ID: 3 400307001-01  
WMU type: LANDFILL  
Liner Comments:  
Monitoring: Surface Water Ground Water

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Township:

WMU Name: LOS OSOS LANDFILL

Type of WMU operation:

WMU classification (post 1984):III

WMU classification (pre 1984): III

WMU status: POST-CLOSURE

Type of waste (post 1984):NON-HAZARD

Type of waste (pre 1984): NON-HAZARD

Year WMU will reach capacity:

Nearest fault name: UNKNOWN

Distance to nearest fault (Feet):

WMU Size in (Acres) :25

Average annual precipitation (Inches): 16

Ground water depth (Feet): 70

Formation name: FRANCISCAN

type: WTHRD BEDROCK

permiability: UNKNOWN

comments:

SITE IS UNDERLAIN BY A THIN LAYER OF UNCONSOLIDATED SAND & CLAYEY SANDS.

Statistics used to analyze water quality:U

WMU Monitoring status:VERIFICATION

LCRS are not present.

Will not withstand maximum probable/credible earthquake.

Regional Board doesn't consider Vadose monitoring feasible.

Water quality protection standard isn't set to background.

Water quality protection standards haven't been exceeded.

SWIS ID: 40-AA-0007

SWAT rank: 3

SWAT status: REPORT APPROVED

SWAT report review percent complete:

SWAT listing was last edited on 07/08/93

SWAT workplan status: RPT PREP W/O WKPL

Non-Hazardous waste is above active level outside WMU in ground water.

Non-Hazardous waste isn't above active level outside WMU in vadose zone.

Non-Hazardous waste is below active level outside WMU in surface water.

Non-Hazardous waste is below active level outside WMU in ground water.

Non-Hazardous waste isn't below active level outside WMU in vadose zone.

Ground water monitoring is adequate.

Hazardous waste isn't outside WMU in ground water.

Non-Hazardous waste is above active level outside WMU in surface water.

Surface water monitoring network is adequate.

Hazardous waste isn't outside WMU in vadose zone.

Four quarters of monitoring data isn't submitted.

Vadose zone monitoring network isn't adequate.

Hazardous waste isn't outside WMU in surface water.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 3 400000N09  
NPDES #:  
Name: OLIVERO PROPERTY  
Contact: Department:  
Phone:  
Address: NONE  
City, State, Zip: SAN LUIS OBISPO ,CA93401

Landowner Data

Name:  
Contact: Department:  
Phone:  
Address:  
City, State, Zip: ,

Agency Data

Name: AMERICAN SANITATION  
Contact: Department:  
Phone:  
Address: NONE  
City, State, Zip: SAN LUIS OBISPO ,CA93401  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 9999 - unknown  
Waste Type 1: Domestic sewage.  
Nonhazardous Solid Wastes - Influent or solid wastes that contain nonhazardous waste.

Facility Complexity:

ANY FACILITY THAT IS NOT TYPE A OR TYPE B

A) Major NPDES facility, non-NPDES facility that would be major if discharge was made to surface or ground waters or Class I disposal sites.

B) Facility having physical, chemical or biological waste treatment system, Class II or III disposal sites or facilities without treatment systems that are complex.

Facility Status:

Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire. Those facilities that are not under Waste Discharge Requirements (NURDs) may be set to HISTORY when the Regional Board considers regular enforcement, monitoring or compliance activities unnecessary at the facility any unregulated discharger with a pending application.

Threat to Water Quality :

Minor threat to water quality

This facility is classified: WDS .  
WMU ID: 3 400000N09-01  
WMU type:  
Liner Comments:

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WMUDS FACILITY DATA CONTINUED

Township:

WMU Name: OLIVERO PROPERTY

Type of WMU operation:

WMU classification (post 1984):

WMU classification (pre 1984):

WMU status:

Type of waste (post 1984):

Type of waste (pre 1984):

Year WMU will reach capacity:

Nearest fault name:

Distance to nearest fault (Feet):

WMU Size in (Acres) :

Average annual precipitation (Inches): 0

Ground water depth (Feet): 0

Formation name:

type:

permiability:

Statistics used to analyze water quality:

WMU Monitoring status:

LCRS are not present.

Will not withstand maximum probable/credible earthquake.

Regional Board doesn't consider Vadose monitoring feasible.

Water quality protection standard isn't set to background.

Water quality protection standards haven't been exceeded.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 3 402003006  
NPDES #:  
Name: MORRO BAY OIL SLUDGE CLOSURE  
Contact: Department:  
Phone: 8057722741  
Address: P. O. BOX 1617  
City, State, Zip: MORRO BAY ,CA93442

Landowner Data

Name:  
Contact: Department:  
Phone:  
Address:  
City, State, Zip: ,

Agency Data

Name: PACIFIC GAS & ELECTRIC COMPANY  
Contact: Department:  
Phone: 4159727000  
Address: P. O. BOX 7640  
City, State, Zip: SAN FRANCISCO ,CA94120  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 4911 - unknown  
Waste Type 1: Contaminated Soil  
Hazardous - Influent or solid wastes that contain toxic, corrosive, ignitable or reactive substances and must be managed according to applicable DOHS standards.

Facility Complexity:

(A) - Major NPDES facility, non-NPDES facility that would be major if discharge was made to surface or ground waters or Class I disposal sites.

Facility Status:

Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire. Those facilities that are not under Waste Discharge Requirements (NURDs) may be set to HISTORY when the Regional Board considers regular enforcement, monitoring or compliance activities unnecessary at the facility any unregulated discharger with a pending application.

Threat to Water Quality :

Moderate threat to water quality

This facility is classified: RCRA TPCA WDS .

WMU ID: 3 402003006-01

WMU type: SURF. IMP.

Liner Comments:

Township:

WMU Name: MORRO BAY OIL SLUDGE CLOSURE

Type of WMU operation:

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WMUDS FACILITY DATA CONTINUED

WMU classification (post 1984):  
WMU classification (pre 1984):  
WMU status:  
Type of waste (post 1984):  
Type of waste (pre 1984):  
Year WMU will reach capacity:  
Nearest fault name: UNKNOWN  
Distance to nearest fault (Feet):  
WMU Size in (Acres) :  
Average annual precipitation (Inches): 0  
Ground water depth (Feet): 0  
Formation name: UNKNOWN  
type: UNKNOWN  
permeability: UNKNOWN  
Statistics used to analyze water quality:U  
WMU Monitoring status:CORRECTIVE ACTION  
LCRS are not present.  
Will not withstand maximum probable/credible earthquake.  
TPCA Task #: 03006  
TPCA Status: B  
HAR Status: 6  
HAR Due Date: / /  
HAR approval date: 12/04/87  
TPCA requirements notification date: / /  
Surface impoundment is being retrofitted.  
TPCA Exemptions:  
Half mile exemption  
Liner exemption  
Power plant exemption  
Surface impoundment leak is present.  
Surface impoundment is within half mile of potential drinking water.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 3 400000N03  
NPDES #:  
Name: WALTER RANCH  
Contact: Department:  
Phone:  
Address: HIGHWAY ONE  
City, State, Zip: SAN LUIS OBISPO ,CA

Landowner Data

Name:  
Contact: Department:  
Phone:  
Address:  
City, State, Zip: .

Agency Data

Name: CALIF POLYTECHNICAL UNIVERSITY  
Contact: DOUG GERARD Department:  
Phone:  
Address: CAL STATE POLY UNIVERSITY  
City, State, Zip: SAN LUIS OBISPO ,CA93401  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 8221 - unknown  
Waste Type 1: Stormwater Runoff  
Nonhazardous Solid Wastes - Influent or solid wastes that contain nonhazardous waste.

Facility Complexity:

ANY FACILITY THAT IS NOT TYPE A OR TYPE B

A) Major NPDES facility, non-NPDES facility that would be major if discharge was made to surface or ground waters or Class I disposal sites.

B) Facility having physical, chemical or biological waste treatment system, Class II or III disposal sites or facilities without treatment systems that are complex.

Facility Status:

Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire. Those facilities that are not under Waste Discharge Requirements (WDRs) may be set to HISTORY when the Regional Board considers regular enforcement, monitoring or compliance activities unnecessary at the facility any unregulated discharger with a pending application.

Threat to Water Quality :

Minor threat to water quality

This facility is classified: WDS .

WMU ID: 3 400000N03-01

WMU type:

Liner Comments:

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

---

WMUDS FACILITY DATA CONTINUED

Township:  
WMU Name: WALTER RANCH  
Type of WMU operation:  
WMU classification (post 1984):  
WMU classification (pre 1984):  
WMU status:  
Type of waste (post 1984):  
Type of waste (pre 1984):  
Year WMU will reach capacity:  
Nearest fault name:  
Distance to nearest fault (Feet):  
WMU Size in (Acres) :  
Average annual precipitation (Inches): 0  
Ground water depth (Feet): 0  
Formation name:  
type:  
permeability:  
Statistics used to analyze water quality:  
WMU Monitoring status:  
LCRS are not present.  
Will not withstand maximum probable/credible earthquake.  
Regional Board doesn't consider Vadose monitoring feasible.  
Water quality protection standard isn't set to background.  
Water quality protection standards haven't been exceeded.

SUBJECT PROPERTY:

P.O. BOX 8104  
SAN LUIS OBISPO  
04/06/95 MR95137

WMUDS FACILITY DATA CONTINUED

Site Information

WDS ID: 5D401000001  
NPDES #:  
Name: CLASS II SWDS  
Contact: Department:  
Phone:  
Address:  
City, State, Zip: ,CA

Landowner Data

Name:  
Contact: Department:  
Phone:  
Address:  
City, State, Zip: ,

Agency Data

Name: SANTA FE ENERGY RESOURCES, INC  
Contact: PEGGY VEAL Department:  
Phone: 8053223922  
Address: 5201 TRUXTUN AVENUE  
City, State, Zip: BAKERSFIELD ,CA93309  
Comments:

Additional Information

This facility is CLOSED to the public.

SIC code 1: 4953 - unknown  
Waste Type 1: Solid Wastes

Designated - Influent or solid wastes that contain nonhazardous wastes that pose a significant threat to water quality because of their high concentration. "Manageable" hazardous wastes (eg. inorganic salts and heavy metals) are included in this category.

Facility Complexity:

(B) - Facility having physical, chemical or biological waste treatment system, Class II or III disposal sites or facilities without treatment systems that are complex.

Facility Status:

Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements. Those facilities that are not under Waste Discharge Requirements (NURDs) are coded as ACTIVE when: 1) there is an active enforcement order for the facility, 2) there is a significant violation that has not been resolved to the satisfaction of the Regional Board, 3) after an inspection further action is required to mitigate a problem at the facility, or 4) there is some problem that the Regional Board considers significant enough to warrant classification as an ACTIVE facility.

Threat to Water Quality :

Minor threat to water quality

This facility is classified:

WDS .

WMU ID: 5D401000001-01

WMU type: LANDFILL

**DRAFT FINAL**

# Site Inspection Report Former Camp San Luis Obispo

San Luis Obispo, California

**U.S. Army Corps of Engineers  
Southwest IMA Region**

**FUDS Project No. J09CA203105**

**Contract: W912DY-04-D-0005**

**Task Order: 0009**



*Prepared For:*  
U.S. Army Corps of Engineers, Los Angeles District  
915 Wilshire Blvd., Suite 15018  
Los Angeles, California 90017-3401  
and  
South Pacific Division Range Support Center

*Prepared By:*  
**PARSONS**

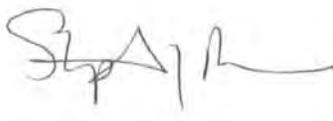
5390 Triangle Parkway, Suite 100  
Norcross, Georgia 30092

August 2007

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

**CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW**

Parsons has completed the Draft Final Site Inspection report for Camp San Luis Obispo, San Luis Obispo, California. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

 *Stephen M. Kan* *Kan Bulware* *Joni Jorgensen-Risk*

Study/Design Team Leader and Team Members

August 14, 2007

 *Paara Kelley* *Jebbi Chapman*

August 14, 2007

---

Independent Technical Review Team Leader

Significant concerns and the explanation of the resolution are as follows:

None

As noted above, all concerns resulting from independent technical review of the project have been considered.

 *Paara Kelley*

August 14, 2007

---

Parsons Program Manager(s)

August 14, 2007

U.S. Army Corps of Engineers, Los Angeles District  
ATTN: CESPL-PM-M (Mr. Lloyd Godard)  
915 Wilshire Blvd., Suite 15018  
Los Angeles, CA 90017-3401  
(213) 452-4014

Subject: Contract W912DY-04-D-0005, Delivery Order 0009  
MMRP SI for SW IMA Region – Draft Final SI Report  
Camp San Luis Obispo, San Luis Obispo, California

Dear Mr. Godard:

Parsons has prepared this Draft Final Site Inspection (SI) Report in accordance with the Performance Work Statement (PWS) to include the completed Munitions Response Site Prioritization Protocol (MRSP). In addition, copies of previous reports are included as appendices. A copy has been provided for your review and comment. Four additional copies have been provided for your distribution to the regulators (DTSC), and other key project stakeholders. We have simultaneously forwarded single copies of the document to Monique Ostermann, HTRW CX and MM CX. Electronic copies have also been provided.

If you have any questions or comments, please contact me at (678) 969-2384 or (404) 606-0346 (cell) or the Project Manager (Ms. Laura Kelley) at (678) 969-2437.

Sincerely,

**PARSONS**



Don Silkebakken, P.E.  
MMRP SI Project/Program Manager

cc: SPD Monique Ostermann –1 copy/1 CDs  
MM CX Betina Johnson / Deborah Walker – 1 copy/1 CD  
MM CX Heidi Novotny – 1 CD  
Laura Kelley (Parsons DPM - Project File 744653.30000)





**U.S. Army Corps of Engineers**  
**Southwest IMA Region**

***DRAFT FINAL***

**Site Inspection Report**  
**Former Camp San Luis Obispo**  
**San Luis Obispo, California**

FUDS Project No. J09CA203105

August 2007

*In Support of*  
**FUDS MMRP Site Inspections Project**

*Prepared by*

**PARSONS**

5390 Triangle Parkway, Suite 100  
Norcross, Georgia 30092

*Prepared for*

U.S. Army Corps of Engineers, Los Angeles District  
915 Wilshire Blvd., Suite 15018  
Los Angeles, California 90017-3401

*and*

U.S. Army Corps of Engineers  
South Pacific Division Range Support Center

Contract No. W912DY-04-D-0005

Task Order 0009

Project No. 744653

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

TABLE OF CONTENTS

	Page
TABLE OF CONTENTS.....	i
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
LIST OF ACRONYMS.....	xi
GLOSSARY OF TERMS.....	xv
EXECUTIVE SUMMARY.....	ES-1
CHAPTER 1 INTRODUCTION.....	1-1
1.1 Background.....	1-1
1.2 Project Objectives.....	1-2
1.3 Project Scope.....	1-3
CHAPTER 2 PROPERTY DESCRIPTION AND HISTORY.....	2-1
2.1 Site Description.....	2-1
2.2 Site Location and Setting.....	2-1
2.2.1 Topography and Vegetation.....	2-1
2.2.2 Soils.....	2-3
2.2.3 Climate.....	2-3
2.2.4 Significant Structures.....	2-4
2.2.5 Demographics.....	2-4
2.2.6 Current and Future Land Use.....	2-4
2.3 Site Ownership and History.....	2-5
2.4 Site Operations and Waste Characteristics.....	2-7
2.4.1 MRA/MRS-Specific Descriptions/Operations.....	2-7
2.4.2 Regulatory Compliance.....	2-13
2.5 Previous Investigations.....	2-13
2.5.1 1945-1946 Ordnance Clearing/Dedudding Efforts.....	2-13
2.5.2 1986 and 1993 Preliminary Assessments.....	2-14
2.5.3 1994 Archives Search Report.....	2-14
2.5.4 2004 Archives Search Report Supplement.....	2-14
2.5.5 2006 Draft Preliminary Historical Records Review.....	2-15
2.5.6 2007 Informal Department of Toxic Substances Control Site Visit.....	2-18
2.5.7 March 2007 CEMVS Additional Data Collection.....	2-19

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
CHAPTER 3 SITE INSPECTIONS TASKS.....	3-1
3.1 Historical Record Review.....	3-1
3.2 Technical Project Planning.....	3-1
3.3 Non-Measurement Data Collection .....	3-4
3.4 Site-Specific Work Plan .....	3-6
3.5 Departures from Planning Documents.....	3-7
 CHAPTER 4 MUNITIONS AND EXPLOSIVES OF CONCERN FINDINGS .....	 4-1
4.1 General Information .....	4-1
4.1.1 Qualitative Reconnaissance .....	4-1
4.1.2 Data Quality Objectives .....	4-5
4.1.2.1 MEC DQO.....	4-5
4.1.2.2 MC DQO .....	4-6
4.1.2.3 MRSPP DQO .....	4-6
4.1.2.4 HRS DQO.....	4-6
4.2 Grenade Court, Range #25 .....	4-6
4.2.1 Historical MEC Information .....	4-6
4.2.2 Inspection Activities.....	4-7
4.3 Grenade Court, Range #26 .....	4-7
4.3.1 Historical MEC Information .....	4-7
4.3.2 Inspection Activities.....	4-7
4.4 Grenade Court, Range #27 .....	4-8
4.4.1 Historical MEC Information .....	4-8
4.4.2 Inspection Activities.....	4-8
4.5 Grenade Court, Range #17 .....	4-8
4.5.1 Historical MEC Information .....	4-8
4.5.2 Inspection Activities.....	4-9
4.6 Range Complex .....	4-9
4.6.1 Historical MEC Information .....	4-9
4.6.2 Inspection Activities.....	4-10
4.7 Rifle Grenade Range (1952).....	4-10
4.7.1 Historical MEC Information .....	4-10
4.7.2 Inspection Activities.....	4-11
 CHAPTER 5 MIGRATION/EXPOSURE PATHWAYS AND TARGETS .....	 5-1
5.1 General Information.....	5-1
5.1.1 Regional Geologic Setting.....	5-1
5.1.2 Regional Hydrogeologic Setting .....	5-2
5.1.3 Regional Groundwater Use .....	5-3

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
5.1.4 Regional Hydrologic Setting .....	5-6
5.1.5 Regional Sensitive Ecological Resources .....	5-6
5.1.6 Sample Locations/Methods .....	5-9
5.1.7 Background Concentrations .....	5-10
5.1.8 Source Evaluation.....	5-11
5.2 MRS 01-Grenade Court, Range #25 and MRS 02-Grenade Court, range #26 .....	5-11
5.2.1 Historical MC Information.....	5-12
5.2.2 Groundwater Migration Pathway .....	5-12
5.2.2.1 Geologic and Hydrogeologic Setting .....	5-12
5.2.2.2 Releases and Potential Releases to Groundwater .....	5-12
5.2.2.3 Groundwater Migration Pathways Receptors.....	5-12
5.2.2.4 Groundwater Sample Locations/Methodologies .....	5-13
5.2.2.5 Groundwater Migration Pathway Analytical Results .....	5-13
5.2.2.6 Groundwater Migration Pathway Conclusions.....	5-13
5.2.3 Surface Water and Sediment Migration Pathway.....	5-13
5.2.3.1 Hydrologic Setting .....	5-13
5.2.3.2 Releases and Potential Releases to Surface Water and Sediment .....	5-13
5.2.3.3 Surface Water and Sediment Migration Pathways Receptors.....	5-13
5.2.3.4 Sample Locations/Methods .....	5-13
5.2.3.5 Surface Water and Sediment Migration Pathway Analytical Results.....	5-13
5.2.3.6 Surface Water and Sediment Migration Pathway Conclusions .....	5-14
5.2.4 Soil Exposure Pathway.....	5-14
5.2.4.1 Physical Source Access Conditions.....	5-14
5.2.4.2 Actual or Potential Contamination Areas .....	5-14
5.2.4.3 Soil Exposure Pathway Receptors.....	5-14
5.2.4.4 Sample Locations/Methodologies .....	5-15
5.2.4.5 Soil Analytical Results .....	5-15
5.2.4.6 Soil Exposure Pathway Conclusions .....	5-15
5.2.5 Air Migration Pathway .....	5-16
5.2.6 Climate .....	5-18
5.2.6.1 Releases and Potential Releases to Air.....	5-18
5.2.6.2 Air Migration Pathway Receptors .....	5-18

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
5.2.6.3	Sample/Monitoring Locations/Methodologies ..... 5-18
5.2.6.4	Air Analytical Results ..... 5-18
5.2.6.5	Air Migration Pathway Conclusions ..... 5-18
5.3	MRS 03-Grenade Court, Range #27 ..... 5-21
5.3.1	Historical MC Information ..... 5-21
5.3.2	Groundwater Migration Pathway ..... 5-21
5.3.2.1	Geologic and Hydrogeologic Setting ..... 5-21
5.3.2.2	Releases and Potential Releases to Groundwater ..... 5-21
5.3.2.3	Groundwater Migration Pathways Receptors ..... 5-22
5.3.2.4	Groundwater Sample Locations/Methodologies ..... 5-22
5.3.2.5	Groundwater Analytical Results ..... 5-22
5.3.2.6	Groundwater Migration Pathway Conclusions ..... 5-22
5.3.3	Surface Water and Sediment Migration Pathway ..... 5-22
5.3.3.1	Hydrologic Setting ..... 5-22
5.3.3.2	Releases and Potential Releases to Surface Water and Sediment ..... 5-24
5.3.3.3	Surface Water and Sediment Migration Pathways Receptors ..... 5-24
5.3.3.4	Sample Locations/Methodologies ..... 5-24
5.3.3.5	Surface Water and Sediment Analytical Results ..... 5-24
5.3.3.6	Surface Water and Sediment Migration Pathway Conclusions ..... 5-24
5.3.4	Soil Exposure Pathway ..... 5-24
5.3.4.1	Physical Source Access Conditions ..... 5-24
5.3.4.2	Actual or Potential Contamination Areas ..... 5-25
5.3.4.3	Soil Exposure Pathways and Receptors ..... 5-25
5.3.4.4	Sample Locations/Methodologies ..... 5-25
5.3.4.5	Soil Analytical Results ..... 5-26
5.3.4.6	Soil Exposure Pathway Conclusions ..... 5-26
5.3.5	Air Migration Pathway ..... 5-26
5.3.6	Climate ..... 5-26
5.3.6.1	Releases and Potential Releases to Air ..... 5-26
5.3.6.2	Air Migration Pathways and Receptors ..... 5-26
5.3.6.3	Sample/Monitoring Locations/Methodologies ..... 5-26
5.3.6.4	Air Analytical Results ..... 5-26
5.3.6.5	Air Migration Pathway Conclusions ..... 5-27
5.4	MRS 04 Grenade Court, Range #17 ..... 5-27
5.4.1	Historical MC Information ..... 5-27

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
5.4.2 Groundwater Migration Pathway .....	5-27
5.4.2.1 Geologic and Hydrogeologic Setting .....	5-27
5.4.2.2 Releases and Potential Releases to Groundwater .....	5-27
5.4.2.3 Groundwater Migration Pathways Receptors .....	5-28
5.4.2.4 Groundwater Sample Locations/Methodologies .....	5-28
5.4.2.5 Groundwater Analytical Results.....	5-29
5.4.2.6 Groundwater Migration Pathway Conclusions.....	5-29
5.4.3 Surface Water and Sediment Migration Pathway.....	5-29
5.4.3.1 Hydrologic Setting .....	5-29
5.4.3.2 Releases and Potential Releases to Surface Water and Sediment .....	5-31
5.4.3.3 Surface Water and Sediment Migration Pathway Receptors .....	5-31
5.4.3.4 Sample Locations/Methodologies .....	5-31
5.4.3.5 Surface Water and Sediment Analytical Results .....	5-31
5.4.3.6 Surface Water and Sediment Migration Pathway Conclusions .....	5-32
5.4.4 Soil Exposure Pathway.....	5-32
5.4.4.1 Physical Source Access Conditions.....	5-32
5.4.4.2 Actual or Potential Contamination Areas.....	5-32
5.4.4.3 Sample Locations/Methodologies .....	5-33
5.4.4.4 Soil Analytical Results .....	5-33
5.4.4.5 Soil Exposure Pathway Conclusions .....	5-35
5.4.5 Air Migration Pathway .....	5-35
5.4.6 Climate .....	5-35
5.4.6.1 Releases and Potential Releases to Air.....	5-35
5.4.6.2 Air Migration Pathways and Receptors.....	5-35
5.4.6.3 Sample/Monitoring Locations/Methodologies .....	5-35
5.4.6.4 Air Analytical Results .....	5-35
5.4.6.5 Air Migration Pathway Conclusions .....	5-35
5.5 MRS 05-Range Complex.....	5-36
5.5.1 Historical MC Information.....	5-36
5.5.2 Groundwater Migration Pathway .....	5-36
5.5.2.1 Geologic and Hydrogeologic Setting .....	5-36
5.5.2.2 Releases and Potential Releases to Groundwater .....	5-36
5.5.2.3 Groundwater Migration Pathways Receptors.....	5-36
5.5.2.4 Groundwater Sample Locations/Methodologies .....	5-37
5.5.2.5 Groundwater Analytical Results.....	5-38

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
5.5.2.6	Groundwater Migration Pathway Conclusions.....5-38
5.5.3	Surface Water and Sediment Migration Pathway.....5-38
5.5.3.1	Hydrologic Setting .....5-38
5.5.3.2	Releases and Potential Releases to Surface Water and Sediment .....5-38
5.5.3.3	Surface Water and Sediment Migration Pathways Receptors.....5-38
5.5.3.4	Sample Locations/Methodologies .....5-38
5.5.3.5	Surface Water and Sediment Analytical Results .....5-38
5.5.3.6	Surface Water and Sediment Migration Pathway Conclusions .....5-39
5.5.4	Soil Exposure Pathway.....5-40
5.5.4.1	Physical Source Access Conditions.....5-40
5.5.4.2	Actual or Potential Contamination Areas.....5-40
5.5.4.3	Soil Exposure Pathways and Receptors.....5-40
5.5.4.4	Sample Locations/Methodologies .....5-40
5.5.4.5	Soil Analytical Results .....5-41
5.5.4.6	Soil Exposure Pathway Conclusions .....5-42
5.5.5	Air Migration Pathway .....5-42
5.5.6	Climate .....5-42
5.5.6.1	Releases and Potential Releases to Air.....5-42
5.5.6.2	Air Migration Pathways Receptors .....5-42
5.5.6.3	Sample/Monitoring Locations/Methodologies .....5-42
5.5.6.4	Air Analytical Results .....5-42
5.5.6.5	Air Migration Pathway Conclusions .....5-42
CHAPTER 6	SCREENING-LEVEL RISK ASSESSMENT.....6-1
6.1	MUNITIONS AND EXPLOSIVES OF CONCERN SCREENING-LEVEL RISK ASSESSMENT.....6-1
6.1.1	Introduction .....6-1
6.1.2	Definition of Risk Evaluation Factors, Categories, and Subcategories.....6-1
6.1.2.1	Presence of Munitions and Explosives of Concern Factors.....6-2
6.1.2.2	Site Characteristics Factors .....6-3
6.1.2.3	Human Factors .....6-4
6.1.3	Munitions and Explosives of Concern Risk Assessment .....6-5
6.1.4	Hazards Assessment.....6-9

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
6.1.5 Munitions and Explosives of Concern Risk Summary.....	6-10
6.2 MC HUMAN HEALTH SCREENING LEVEL RISK ASSESSMENT .....	6-13
6.2.1 Conceptual Site Model .....	6-13
6.2.2 Affected Media.....	6-13
6.2.3 Screening Values .....	6-14
6.2.4 Risk Characterization .....	6-14
6.2.4.1 Grenade Court Range #25 MRS 01 and Grenade Court Range #26 MRS 02 .....	6-14
6.2.4.2 Grenade Court, Range #17 MRS 04.....	6-14
6.2.4.3 Range Complex MRS 05.....	6-14
6.2.5 Discussion .....	6-15
6.3 MC ECOLOGICAL SCREENING LEVEL RISK ASSESSMENT .....	6-15
6.3.1 Conceptual Site Model .....	6-16
6.3.2 Risk Characterization .....	6-16
6.3.2.1 Grenade Court Range #25 MRS 01 and Grenade Court Range #26 MRS 02 .....	6-16
6.3.2.2 Range Complex MRS 05.....	6-17
6.3.3 Management Goals.....	6-17
CHAPTER 7 SUMMARY AND CONCLUSIONS.....	7-1
7.1 SUMMARY.....	7-1
7.1.1 MRS 01 – Grenade Court, Range #25.....	7-2
7.1.2 MRS 02 – Grenade Court, Range #26.....	7-2
7.1.3 MRS 03 – Grenade Court, Range #27.....	7-2
7.1.4 MRS 04 – Grenade Court, Range #17.....	7-2
7.1.5 MRS 05 – Range Complex.....	7-2
7.1.6 Rifle Grenade Range (1952) .....	7-3
7.2 Conclusion Regarding Potential Exposure Pathways.....	7-3
CHAPTER 8 RECOMMENDATIONS.....	8-1
CHAPTER 9 REFERENCES .....	9-1

**TABLE OF CONTENTS  
(CONTINUED)**

	<b>Page</b>
APPENDIX A PERFORMANCE WORK STATEMENT	
APPENDIX B TECHNICAL PROJECT PLANNING (TPP) SESSION DOCUMENTATION/MEETING MINUTES	
APPENDIX C INTERVIEW DOCUMENTS	
APPENDIX D FIELD NOTES AND FIELD FORMS	
APPENDIX E PHOTO-DOCUMENTATION LOG	
APPENDIX F ANALYTICAL DATA	
APPENDIX G ANALYTICAL DATA QA/QC REPORT AND USACE-PREPARED CHEMICAL DATA QUALITY ASSURANCE REPORT	
APPENDIX H GEOGRAPHIC INFORMATION SYSTEMS DATA	
APPENDIX I GEOPHYSICAL DATA	
APPENDIX J CONCEPTUAL SITE MODELS	
APPENDIX K MUNITIONS RESPONSE SITE PRIORITIZATION PROTOCOL EVALUATIONS	
APPENDIX L REFERENCE COPIES	

**LIST OF TABLES**

<b>No.</b>	<b>Title</b>	<b>Page</b>
ES.1	Summary of Results .....	ES-2
1.1	Camp San Luis Obispo MRSs .....	1-2
1.2	1993 ASR Area Assessments .....	1-3
2.1	Ranges and Suspect Past DoD Activities .....	2-7
2.2	1945-1946 Ordnance Clearance Findings .....	2-13
2.3	Draft HRR MEC Items Identified with Camp San Luis Obispo and Baywood Park Training Area .....	2-17
3.1	Sampling Rationale .....	3-8
4.1	Chemical Composition of MEC and Potential Munitions Constituents .....	4-3
4.2	Site Inspection Summary.....	4-12
5.1	Groundwater Wells in the Vicinity of the Camp San Luis Obispo .....	5-5
5.2	Population Information in the Vicinity of the Camp San Luis Obispo .....	5-6
5.3	Federally-Listed Species Within the Former Camp San Luis Obispo.....	5-8
5.4	Summary Of Validated Analytical Results For Camp San Louis Obispo Soil Samples Collected In April And May 2007 .....	5-17
5.5	Camp San Luis Obispo Soil Background Concentrations.....	5-18
5.6	MRS No. 1-Grenade Court, Range #25 and MRS No. 2-Grenade Court, Range #26 Soil Source Evaluation .....	5-20
5.7	MRS 03-Grenade Court, Range #27 Soil Source Evaluation.....	5-23
5.8	Groundwater Wells in the Vicinity of Grenade Court, Range #17 MRS 04 .....	5-28
5.9	Summary Of Validated Analytical Results For Camp San Louis Obispo Groundwater Samples Collected In May 2007 .....	5-30
5.10	MRS No. 4-Grenade Court, Range #17 Groundwater Source Evaluation .....	5-32
5.11	MRS No. 4-Grenade Court, Range #17 Soil Source Evaluation.....	5-34
5.12	Groundwater Wells in the Vicinity of Range Complex MRS 05 .....	5-37
5.13	MRS No. 5-Grenade Court, Range Complex Groundwater Source Evaluation .....	5-39
5.14	MRS No. 5-Range Complex Soil Source Evaluation.....	5-43
6.1	MEC Type Subcategories.....	6-2
6.2	MEC Sensitivity Subcategories.....	6-3
6.3	Site Accessibility Subcategories.....	6-4
6.4	Site Stability Subcategories.....	6-4
6.5	MEC Contact Probability Levels.....	6-5
6.6	Suspected or Known Munitions Used, Former Camp Louis Obispo, California .....	6-7
6.7	SI MEC Risk Evaluation .....	6-12

6.8 MRS No. 1-Grenade Court, Range #25 and MRS No. 2-Grenade Court,  
Range #26 Soil Human Health Screening Risk Assessment ..... 6-17

6.9 MRS No. 4-Grenade Court, Range #17 Groundwater Human Health  
Screening Risk Assessment ..... 6-18

6.10 MRS No. 5-Range Complex Soil Human Health Screening Risk  
Assessment..... 6-18

6.11 MRS No. 5-Grenade Court, Range Complex Groundwater Human Health  
Screening Risk Assessment ..... 6-19

6.12 MRS No. 1-Grenade Court, Range #25 and MRS No. 2-Grenade Court,  
Range #26 Soil Ecological Screening Risk Assessment..... 6-19

6.13 MRS No. 5-Range Complex Soil Ecological Screening Risk Assessment ..... 6-20

8.1 Recommendations Camp San Luis Obispo..... 8-2

**LIST OF FIGURES**

<b>No.</b>	<b>Title</b>	<b>Page</b>
1.1	Site Location, Camp San Luis Obispo .....	1-6
1.2	Site Location, Camp San Luis Obispo .....	1-7
1.3	Site Setting and MRS Designations .....	1-8
4.1	Qualitative Reconnaissance and Sample Locations Map.....	4-13
4.2	Qualitative Reconnaissance and Sample Locations Map.....	4-14
4.3	Qualitative Reconnaissance and DTSC Observations (2007) .....	4-15
4.4	Qualitative Reconnaissance and DTSC Observations (2007) .....	4-16
5.1	2000 Census Data.....	5-44
5.2	Water Well Locations (figure held for receipt of data from Dept. of Water Resources) .....	5-45

**LIST OF ACRONYMS**

AHA	Activity Hazard Analysis
ARC	Annual Report to Congress
ASR	Archives Search Report
bgs	Below Ground Surface
Cal Poly	California Polytechnic State University
CDF&G	California Department of Fish and Game
CDHS	California Department of Health Services
CEHNC	Huntsville U.S. Army Engineering and Support Center
CEMVR	U.S. Army Corps of Engineers, Rock Island District
CEMVS	U.S. Army Corps of Engineers, St. Louis District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESPL	U.S. Army Corps of Engineers, Los Angeles District
CFR	Code of Federal Regulations
CHE	Chemical Warfare Material Hazard Evaluation
CMC	California Men's Colony
CNDDB	California Natural Diversity Database
CNG	California National Guard
COC	Contaminants of Concern
CRREL	Cold Regions Research and Engineering Laboratory
CRWQCB	California Regional Water Quality Control Board
CSEM	Conceptual Site Exposure Model
CSM	Conceptual Site Model
CSLO	Camp San Luis Obispo
CW	Chemical Warfare
CX	Center of Expertise
CZMP	Costal Zone Management Program
DC	Design Center
DEP	Defense Environmental Programs
DERP	Defense Environmental Response Program
DoD	Department of Defense
DQO	Data Quality Objective
DTSC	California Department of Toxic Substances Control
DWSAP	Drinking Water Source Assessment and Protection Program
EHE	Explosive Hazard Evaluation
EOD	Explosive Ordnance Disposal
EPP	Environmental Protection Plan

ER	Engineering Regulation
ERA	Ecological Risk Assessments
ERFPP	Emergency Response and Fire Prevention Plan
ESV	Ecological Screening Values
FDE	Findings and Determination of Eligibility
FSP	Field Sampling Plan
FTL	Field Team Leader
FUDS	Formerly Used Defense Site
FUDSMIS	Formerly Used Defense Site Management Information System
GIS	Geographic Information System
GPS	Global Positioning System
GSA	General Services Administration
GW1	Groundwater Well 1
HC	Hazard Quotient
HE	High Explosive
HHE	Health Hazard Evaluation
HHRA	Human Health Risk Assessment
HQ	hazard quotient
HRR	Historical Records Review
HRS	Hazard Ranking System
HTRW	Hazardous, Toxic and Radioactive Waste
HTW	Hazardous and Toxic Waste
IDW	Investigative Derived Waste
IMA	Southeast and Pacific Installation Management Agency
INPR	Inventory Project Report
lb	pound
LC	Liquid Chromatography
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MC	Munitions Constituents
MCL	Maximum Concentration Level
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mm	millimeter
MM	Military Munitions
MMR	Military Munitions Response
MMRP	Military Munitions Response Program

MRA	Munitions Response Area
MRDS	Mineral Resources Data System
MRS	Munitions Response Site
MRSPP	Military Response Site Prioritization Protocol
MTBE	Methyl tertiary-butyl ether
NAD	North American Datum
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDAI	No DoD Action Indicated
NGVD	Net Geodetic Vertical Datum
NHA	National Heritage Areas
NHL	National Historic Landmarks
NO <sub>3</sub>	Nitrate
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRIS	National Register Information System
NRHD	National Register of Historic District
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Units
NWI	National Wetlands Inventory
NWRS	National Wildlife Refuge System
OEW	Ordnance and Explosive Waste
OHP	Office of Historic Preservation
PA	Preliminary Assessment
PAPP	Programmatic Accident Prevention Plan
Parsons	Parsons Corporation
PCL	Protective Concentration Limit
PDA	Personal Digital Assistant
PETN	Pentaerythritol Tetranitrate
PFSP	Programmatic Field Sampling Plan
PM	Project Manager
POP	Period of Performance
ppb	Parts per billion
PRG	Preliminary Remediation Goal
PSAP	Programmatic Sampling and Analysis Plan
PWP	Programmatic Work Plan
PWS	Performance Work Statement
QA	Quality Assurance
QAPP	Quality Assurance Project Plan

QC	Quality Control
QR	Qualitative Reconnaissance
RA	Removal Action
RAC	Risk Assessment Code
RI/FS	Remedial Investigation / Feasibility Study
RMIS	Risk Management Information System
ROE	Right-of-Entry
RWQCB	Regional Water Quality Control Board
SAP	Sampling & Analysis Plan
SI	Site Inspection
SPD RSC	South Pacific Division Range Support Center
SLERA	Screening Level Ecological Risk Assessment
SLO	San Luis Obispo
SLRA	Screening Level Risk Assessment
SOP	Standard Operating Procedure
SSL	Soil Screening Level
SS-WP	Site-Specific Work Plan
SVT	Site Visit Team
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
TCRA	Time Critical Removal Action
TDS	Total Dissolved Solids
T&E	Threatened and Endangered
TESS	Threatened and Endangered Species System
TPP	Technical Project Planning
USACE	U.S. Army Corps of Engineers
USAESCH	Engineering and Support Center, Huntsville
USC	U.S. Code
USEPA	United States Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WPA	Water Plan Area

**GLOSSARY OF TERMS**

<b>anomaly</b>	Any item that deviates from the expected subsurface ferrous and non-ferrous material at a site (i.e., pipes, power lines, etc.).
<b>Inhabited structure</b>	Permanent or temporary structure, other than military munitions-related structures, routinely occupied by one or more persons for any portion of a day.
<b>magnetometer</b>	An instrument for measuring the strength of a magnetic field; used to detect buried iron and other metal objects.
<b>military munitions</b>	All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the Department of Defense, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.
<b>munitions and explosives of concern (MEC)</b>	Military munitions that may pose unique explosives safety risks, including UXO, discarded military munitions, or munitions constituents present in high enough concentrations to pose an explosive or other health hazard.
<b>munitions constituents (MC)</b>	Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.
<b>munitions debris</b>	Remnants of munitions (e.g., penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.
<b>munitions response</b>	Response actions, including investigation, removal actions, and remedial actions, to address the explosive safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents, or to support a determination that no removal or remedial action is required.

<b>munitions response area (MRA)</b>	Any area on a defense site that is known or suspected to contain UXO, discarded military munitions, or MC. Examples include former ranges and munitions burial areas. A munitions response area is comprised of one or more munitions response sites.
<b>munitions response site (MRS)</b>	A discrete location within an MRA that is known to require a munitions response.
<b>projectile</b>	Object projected by an applied force and continuing in motion by its own inertia. This includes bullets, bombs, shells, grenades, guided missiles, and rockets.
<b>unexploded ordnance (UXO)</b>	Military munitions that have been primed, fuzed, armed, or otherwise prepared for action; that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and that remain unexploded whether by malfunction, design, or any other cause.

## **EXECUTIVE SUMMARY**

ES-1 Camp San Luis Obispo was established in 1928 by California as a National Guard Camp and used for infantry division training during World War II and signal corps training during the Korean War. Munitions and explosives of concern (MEC) activities associated with the former Camp San Luis Obispo (CSLO) included small arms training and qualification firing at multiple small arms ranges of various types. The facility also supported hand grenade ranges, rifle grenade ranges, and anti-tank rocket ranges in addition to several courses and ranges that authorized the use of multiple types of weapons. There were originally 27 World War II era ranges and thirteen training areas. The ranges and training areas were occasionally used for combined arms live fire maneuvers. A site inspection (SI), documented in this report, was conducted to determine whether munitions response sites (MRSs) identified within CSLO warrant subsequent characterization as part of a remedial investigation/feasibility study (RI/FS) or no Department of Defense (DoD) action indicated (NDAI). The SI was performed to evaluate evidence for the presence of munitions and explosives of concern (MEC) and munitions constituents (MC) within each of the five MRSs. To accomplish this objective, qualitative reconnaissance (QR) and MC sampling were performed.

ES-2 The technical project planning (TPP) process identified that, in addition to QR, the collection of eleven surface soil samples and two groundwater samples (plus associated quality assurance/quality control samples) would be sufficient to meet the SI project objectives.

ES-3 The SI evaluation included the conduct of approximately 35 miles of pedestrian QR as well as the collection of twelve surface soil samples and two groundwater samples. Although only eleven surface soil samples were planned, an additional discretionary sample was collected by the Site Visit Team (SVT) based on field observations. All but two surface soil samples (ambient) were collected from areas that, according to the TPP Team consensus, represented the highest likelihood for the presence of MEC or MC contamination.

ES-4 TestAmerica (formerly Severn Trent Laboratories) located in Arvada, Colorado analyzed the surface soil samples for explosives and total metals. The groundwater samples were analyzed by TestAmerica for explosives, perchlorate, and metals. Metals were not analyzed for in the groundwater sample collected near the active firing range due to the potential for non-DoD source metals. Two surface soil samples also included analysis for white phosphorus which was completed by DataChem in Salt Lake City, Utah. The analytical results from the surface soil sampling were evaluated for human health concerns using the U.S. Environmental Protection Agency (USEPA)

Region 9 Residential Preliminary Remediation Goals (PRGs) and California-Modified USEPA Region 9 PRGs, as agreed upon during the TPP Meeting. USEPA ecological soil screening levels (SSLs) were used as comparison criteria for the Screening Level Ecological Risk Assessment (SLERA). The analytical results for the groundwater samples were evaluated using the DoD’s policy level of concern for perchlorate at 24 micrograms per liter (µg/L), as well as California Department of Health Services notification level of 6.0 µg/L. Perchlorate was detected in both of the groundwater samples; however, well below the established screening criteria. No explosive compounds were detected in any of the surface soil samples collected from within any of the five MRSs. White phosphorus was also not detected in the surface soil samples collected at the site. No metals were detected at levels exceeding human health screening criteria. Copper detected in surface soil at MRS 01/MRS 02, and antimony and copper detected in surface soil collected from MRS 05, are at concentrations that would not pose an unacceptable potential for risk to the health of ecological receptors.

ES-5 One MEC item was observed in an area of potential concern identified in the original Archives Search Report but not retained as an MRS as documented in the 2004 ASR Supplement. The area was designated as the Rifle Grenade Range (1952). QR and MC sampling was conducted within this non-MRS area based on request from the California Department of Toxic Substances and Control (and subsequent concurrence by the TPP Team. Several munitions-related features observed within MRS 02, MRS 04, MRS 05, and the Rifle Grenade Range (1952) non-MRS included berms, an armored tank, grenade foxholes, grenade throwing stations, and a possible crater.

**Table ES.1  
Summary of Site Inspection Results**

<b>MRS</b>	<b>MEC Found</b>	<b>MD Found</b>	<b>MC Contamination</b>	<b>Recommendation</b>
Grenade Court, Range #25 MRS 01	No	No	No	RI/FS based on historical findings, no further MC sampling.
Grenade Court, Range #26 MRS 02	No	No	No	RI/FS based on historical findings, no further MC sampling.
Grenade Court, Range #27 MRS 03	No	No	No	NDAI
Grenade Court, Range #17 MRS 04	No	No	No	NDAI
Range Complex MRS 05	No	Yes	Yes	TCRA (Institutional Controls) and RI/FS. Further environmental sampling recommended for all media.

ES-6 Munitions were used at the CSLO site from 1928 to the 1960s. Historical records indicate that a variety of military munitions were used at the various ranges that

## DRAFT FINAL

included general small arms, fragmentation hand grenades (MK II), anti-tank rifle grenades (M9A1), practice hand grenades (M62), 60mm mortars, 81mm mortars, 3.5-inch rockets, high explosive 105mm and 155 mm shells, 2.36-inch rockets and boosters (M20). ***Both MEC and MD was identified at the Rifle Grenade Range (1952) non-MRS. Munitions debris (indicative of potential presence of MEC) was also observed throughout MRS 05. In addition, MEC and MD has been reported in MRS 05 over the years. MEC was most recently reported at MRS 05 in January/February 2007 during an informal field visit by DTSC. No MEC or MD was identified during the SI at MRS 01 or MRS 02; however, MD has been reported at both of these MRSs in the past. No MEC or MD was identified during the SI or any other prior site evaluation at MRS 03 or MRS 04.***

ES-7 It is recommended that MRS 03 and 04 at the CSLO site each proceed to NDAI based on the absence of MEC and MC during the SI and prior site visits. Although no MEC or MD was observed during the SI, MRS 01 and 02 are recommended to proceed to RI/FS based on circumstantial documentation of a limited historical removal action and reports of continued MD presence. No MC above screening levels were detected; therefore, additional sampling during the RI/FS is not recommended.

ES-8 It is recommended that MRS 05 proceed to RI/FS due to the presence of both MEC and MC. Further MC sampling is recommended to properly characterize the MRS. It is also recommended that all media be investigated further in the RI/FS.

## CHAPTER 1 INTRODUCTION

### 1.1 BACKGROUND

1.1.1 Parsons Corporation (Parsons) received Contract No. W912DY-04-D-0005, Task Order No. 0009, from the United States Army Corps of Engineers (USACE), Engineering and Support Center, Huntsville (USAESCH) to perform a Site Inspection (SI) at the former Camp San Luis Obispo Formerly (CSLO) Used Defense Site (FUDS) located in San Luis Obispo, California. The former Camp San Luis Obispo was established in 1928 by California as the National Guard Camp. Designated originally as Camp Merriam, CSLO was originally established on 5,800 acres. Additional lands were annexed in the early 1940s bringing the final total acreage of the facility to 14,959.16 acres. During World War II, Camp San Luis Obispo was used by the U.S. Army from 1943 to 1946 for infantry division training. The types of training supported at CSLO included artillery, small arms, mortar, rocket, and grenade training. According to the Historical Records Review (HRR), there were a total 27 ranges and thirteen other training areas located within Camp San Luis Obispo during World War II. During the Korean War, the Southwest Signal Corps Training Center was the primary unit assigned to the Camp. The ranges on the installation in 1952 were associated with individual and squad weapons (small arms, hand and rifle grenades, and anti-tank rockets). During this time, training exercises were primarily for replacement personnel rather than unit training, and focused on individual weapons (rifles and hand grenades). Construction at the Camp included typical dwellings, garages, latrines, target houses, repair shops, and miscellaneous range structures. Property acquisitions and reacquisitions in support of various missions into the early 1960s resulted in a comprehensive FUDS-eligible acreage totaling only 2,101 acres, as depicted on Figure 1.1. As such, the former Camp San Luis Obispo has been assigned FUDS Project #J09CA203105.

1.1.2 For the purposes of this SI Report, five parcels comprising former training areas have been identified as Munitions Response Sites (MRSs) for further evaluation during the SI. Figure 1.1 and 1.2 depict the MRS and FUDS boundaries for the CSLO. The coordinates for the center point of each MRS are listed in Table 1.1. The coordinates are in meters [Universal Transverse Mercator (UTM) Zone 11 North American Datum (NAD) 83]. Figure 1.3 depicts the MRS designations.



**Table 1.1 Former Camp San Luis Obispo MRSs**

<b>MRS</b>	<b>MRS Acreage*</b>	<b>X-Coordinate (meters)</b>	<b>Y-Coordinate (meters)</b>
MRS 01 – Grenade Court, Range #25	10 acres	706544.00 E	3911917.00 N
MRS 02 – Grenade Court, Range #26	16 acres	706590.00 E	3912046.00 N
MRS 03 – Grenade Court, Range #27	24 acres	704993.00 E	3911792.00 N
MRS 04 – Grenade Court, Range #17	2 acres	703043.00 E	3913858.00 N
MRS 05 – Range Complex	2,049 acres	706338.00 E	3914841.00 N

\*- Acreage based on review of Annual Report to Congress (ARC), Archives Search Report (ASR) Supplement, and the FUDS Management Information System (FUDSMIS).

**1.2 PROJECT OBJECTIVES**

1.2.1 The Department of Defense (DoD) has established the Military Munitions Response Program (MMRP) to address DoD sites suspected of containing munitions and explosives of concern (MEC) or munitions constituents (MC). Under the MMRP, the USACE is conducting environmental response activities at FUDS for the Army, DoD’s Executive Agent for the FUDS program.

1.2.2 Pursuant to USACE’s Engineer Regulation (ER) 200-3-1 (USACE, 2004) and the Management Guidance for the Defense Environmental Response Program (DERP) (Office of the Deputy Under Secretary of Defense [Installations and Environment], September 2001), USACE is conducting FUDS response activities in accordance with the DERP statute (10 United States Code [USC] 2701 et seq.), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 USC §9620), Executive Orders 12580 and 13016, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Part 300). As such, USACE is conducting remedial SIs, as set forth in the NCP, to evaluate hazardous substance releases or threatened releases from eligible FUDS and eligible MRSs within FUDS.

1.2.3 While not all MEC/MC constitute CERCLA hazardous substances, pollutants or contaminants, the DERP statute provides DoD the authority to respond to releases of MEC/MC, and DoD policy states that such responses shall be conducted in accordance with CERCLA and the NCP.

1.2.4 The primary objective of the MMRP SI is to determine whether a FUDS project warrants further response action under CERCLA or not. The SI collects a

sufficient amount of information necessary to make this determination. Additionally, it (i) determines the potential need for a removal action (ii) collects or develops additional data, as appropriate, for Hazard Ranking System (HRS) scoring by the U.S. Environmental Protection Agency (USEPA); and (iii) collects data, as appropriate, to characterize the release for initiation of the RI/FS. An additional objective of the MMRP SI is to collect the additional data necessary to complete the Munitions Response Site Prioritization Protocol (MRSPP).

1.2.5 The SI was performed as a result of the potential for MEC/MC contamination at the five MRSs. All work adhered to the DERP for FUDS and relevant U.S. Army regulations and guidance for MMRP programs. As specified in the task order, this report is prepared to summarize the SI sampling events for the Camp San Luis Obispo site and presents an accounting of the MEC/MC contamination identified on-site.

**1.3 PROJECT SCOPE**

1.3.1 During the 1993 field visit in support of the ASR the team observed munitions debris (MD) limited only to a single expended hand grenade fuze. There were no MEC observations or additional observations of MD (CEMVR, 1994). The ASR documented numerous historical accounts of MEC and MD found over the years (detailed in Chapter 2). The ASR team assessed seven areas of potential concern within the former Camp San Luis Obispo site (inclusive of the five MRSs). Table 1.2 below summarizes the ASR conclusions.

**Table 1.2 1993 ASR Area Assessments  
Former Camp San Luis Obispo**

<b>Area</b>	<b>Conclusion</b>
<b>Area A</b> – Range/Impact Area (includes MRSs 04 and 05)	<b><i>Confirmed ordnance contamination</i></b> based on historical records, artillery fragments gathered and stored at Cal Poly, grenade on San Luis Obispo County School property, artillery items on Vollmer property, 1983 ordnance found at Cuesta College, small arms casings and fin assemblies on California Department of Fish and Game (CDF&G) property.
<b>Area B</b> – Down Range & Buffer Area (outer fringes of current Camp San Luis Obispo ranges/includes portions of MRS 05 and Remaining Lands)	<b><i>Potentially contaminated with ordnance</i></b> because of its proximity to the extremely active ranges in Area G.
<b>Area C</b> – Hospital Area (current California Men’s Colony Prison)	Uncontaminated with ordnance.

**Table 1.2 1993 ASR Area Assessments  
Former Camp San Luis Obispo**

Area	Conclusion
Area D – Administration Area	Uncontaminated with ordnance.
Area E – Grenade Court ( <i>current MRS 03</i> )	Uncontaminated with ordnance.
Area F – Grenade Courts ( <i>current MRS 01 and 02</i> )	<b>Confirmed ordnance contamination</b> based on discovered expended grenade fuzes and grenade fragments discovered in the late-1980s during an ordnance sweep by IT Corporation. Expended grenade fuze discovered during field visit in support of 1993 ASR.
Area G – Range/Impact Area/Administrative ( <i>current California Army National Guard training facility</i> )	<b>Ineligible for the FUDS Program</b> due to current ongoing training activities.

1.3.2 The findings of the ASR are recorded in Subchapter 2.5 of this SI Report. Along with historical reports of MEC and MD (USACE, 1994), there has also been a recent report of MEC during the informal site visit by Department of Toxic Substances Control (DTSC) in January/February 2007. As a result, the Technical Project Planning (TPP) Project Team concurred that the SI would proceed in a manner to support an RI/FS for the MRSs. The SI for CSLO evaluated the potential presence of MEC (to include unfired small arms) and MC in each MRS as well as in a non-MRS area of potential concern known as the former Rifle Grenade Range (1952) located south of MRS 04. The rationale for evaluating the Rifle Grenade Range (1952) was based on concerns raised by individuals of the TPP Project Team. Additionally, the informal site visit conducted by DTSC observed some rifle grenade debris (MD) in this former range.

1.3.3 The USACE Los Angeles District (CESPL) facilitated a TPP Meeting on 7 February 2006 that included representatives of CESPL; Parsons; DTSC; California Polytechnic State University (Cal Poly); CDF&G; Los Padres National Forest; San Luis Obispo (SLO) County Parks; and SLO County Office of Education. The TPP Team discussed and refined the initial Technical Approach (limited to the Korean War era use of the facility) during the course of the TPP Meeting yielding a Final TPP Memorandum (Parsons, 2006b). The TPP Team agreed that additional data needed to be obtained covering the use of the site during World War II. The Technical Approach was further discussed and refined on a conference call with the TPP Team on 13 September 2006, which included the additional World War II era data obtained. Unanimous TPP Team concurrence with the revised Technical Approach presented in the Final TPP Memorandum issued 12 October 2006 was achieved (Appendix B) including the locations of the 11 surface soil samples and two groundwater samples (with associated

## DRAFT FINAL

duplicate samples), sampling methods, and laboratory analyses for explosives, metals constituents, perchlorate, and white phosphorus. The TPP Project Team concurred that human health comparison criterion for surface soil sample results would be the USEPA Region 9 Residential Preliminary Remediation Goals (PRGs) and California Modified USEPA Region 9 PRGs. The screening criteria for the water samples, the TPP Project Team agreed would be the DoD's policy level of concern for perchlorate at 24.0 micrograms/liter ( $\mu\text{g/L}$ ), California Department of Health Services notification level for perchlorate of 6  $\mu\text{g/L}$ , as well as USEPA Region 9 Human Health Screening Values for Tap Water PRGs. Ecological screening levels were developed and reviewed by the TPP Project Team as part of the development of the SS-WP Addendum.

1.3.4 The TPP Project Team concurred that the SI data collection efforts would focus on screening for MC contamination in surface soil and groundwater. A total of 11 surface soil samples and two groundwater samples; with an optional third groundwater sample if an additional groundwater source could be located, along with the appropriate Quality Assurance/Quality Control (QA/QC) samples and field duplicates were planned for CSLO at the five associated MRSs. One surface soil sample was collected from each Grenade Court Range #25 MRS 01 and Grenade Court Range #26 MRS 02; one surface soil sample was collected from Grenade Court Range #27 MRS 03; one surface soil sample was collected from Grenade Court Range #17 MRS 04; five surface soil samples were collected in Range Complex MRS 05; and one surface soil sample was collected in the non-MRS area of potential concern designated as Rifle Grenade Range (1952). An additional discretionary surface soil sample was collected in Range Complex MRS 05 (as provided in the Site Specific Work Plan [SS-WP] Addendum) based on field observations. Two surface soil samples were collected in undeveloped areas in the extreme eastern portion and the southwest portion of the CSLO to provide "ambient" data.

1.3.5 The primary project planning documents used to perform the SI include the SS-WP Addendum for the Camp San Luis Obispo (Parsons, 2007), the USACE South Pacific Division Range Support Center (SPD RSC) Programmatic Work Plan (PWP) (Parsons, 2005), the Programmatic Sampling and Analysis Plan (PSAP) (USACE, 2005), and the PSAP Addendum (Parsons, 2006a). The performance work statement for this project is included in Appendix A.

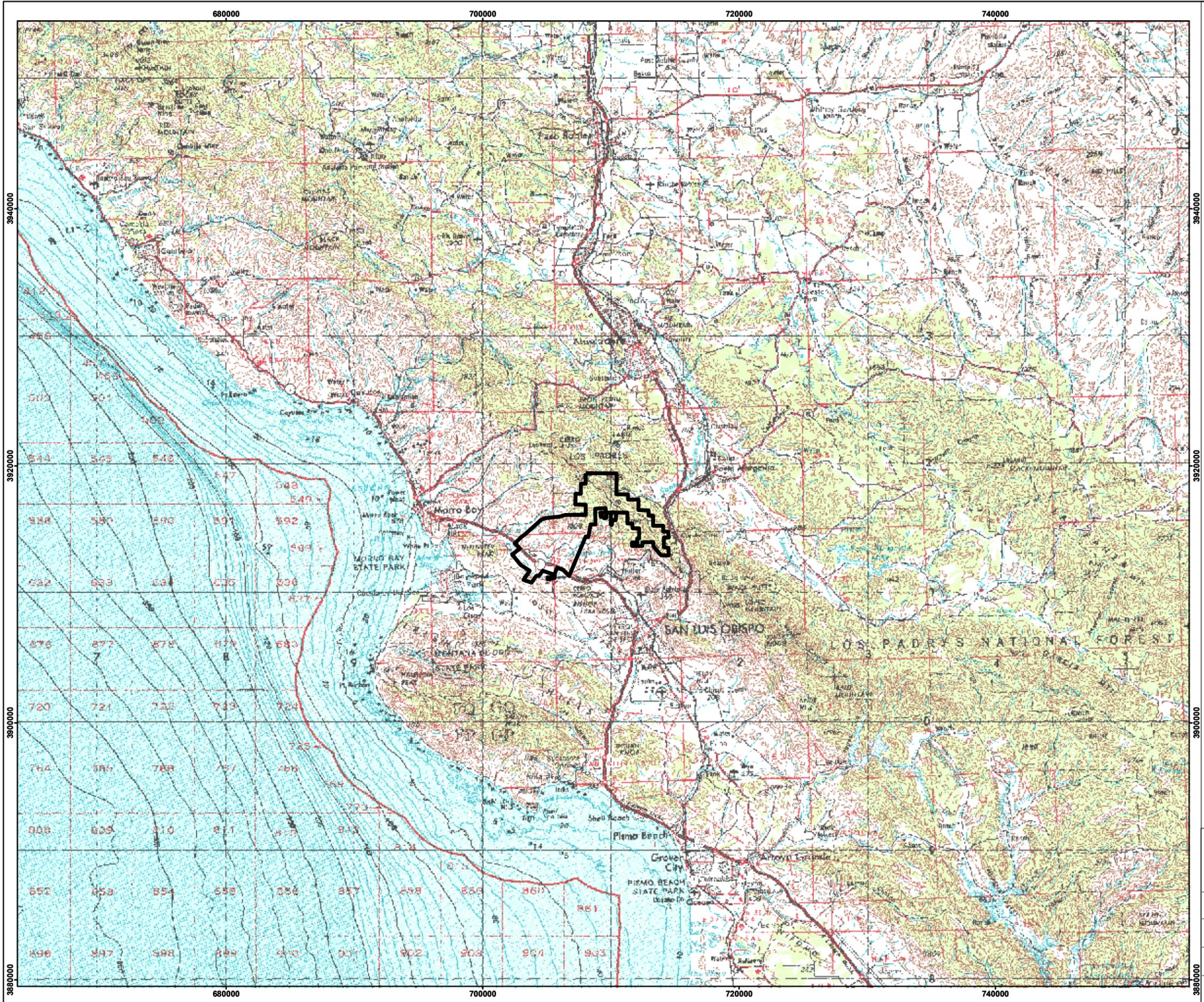


Figure 1.1  
**Site Location**  
**Camp San Luis Obispo**  
**FUDS Project No. J09CA203105**

San Luis Obispo, California

**Legend**

— Approximate Property Boundary



Image Source: USGS Topo, 1956  
 Projection: UTM Zone 10 NAD83, Units in Meters



PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER
---------	--

DESIGNED BY: BT	<b>Site Location</b>	
DRAWN BY: BT		
CHECKED BY: JJ	SCALE: As Shown	PROJECT NUMBER: 744653.30000
SUBMITTED BY: DS	DATE: August 2007	PAGE NUMBER: 1-6
	FILE: X:\GIS\Site_inspections_sw\Maps\Camarillo_ca\Fig1_1.mxd	



Figure 1.2  
**Site Location**  
**Camp San Luis Obispo**  
**FUDS Project No. J09CA203105**  
 San Luis Obispo, California

**Legend**  
 — Approximate Property Boundary



Image Source: 2006 Orthophotos  
 Projection: UTM Zone 10 NAD83, Units in Meters



PARSONS	U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER
---------	---

DESIGNED BY: BT	<b>Site Location</b>	
DRAWN BY: BT		
CHECKED BY: JJ	SCALE: As Shown	PROJECT NUMBER: 744653.30000
SUBMITTED BY: DS	DATE: August 2007	PAGE NUMBER: 1-7
	FILE: X:\GIS\Site_inspection_sw\Maps\CampSanLuisObispo_ca\Fig1_2.mxd	

Figure 1.3  
**Site Setting and MRS Designations**  
**Camp San Luis Obispo**  
**FUDS Project No. J09CA203105**

San Luis Obispo, California

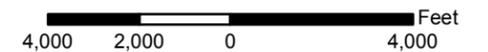
**Legend**

-  Hand and Rifle Grenades
-  Rocket
-  Small Arms
-  Approximate Property Boundary
-  Approximate 1945 Range Boundary
-  MRS

MRS 01 Grenade Court, Range No. 25  
MRS 02 Grenade Court, Range No. 26  
MRS 03 Grenade Court, Range No. 27  
MRS 04 Grenade Court, Range No. 17  
MRS 05 Range Complex (Footprint approximated from FUDSMIS)



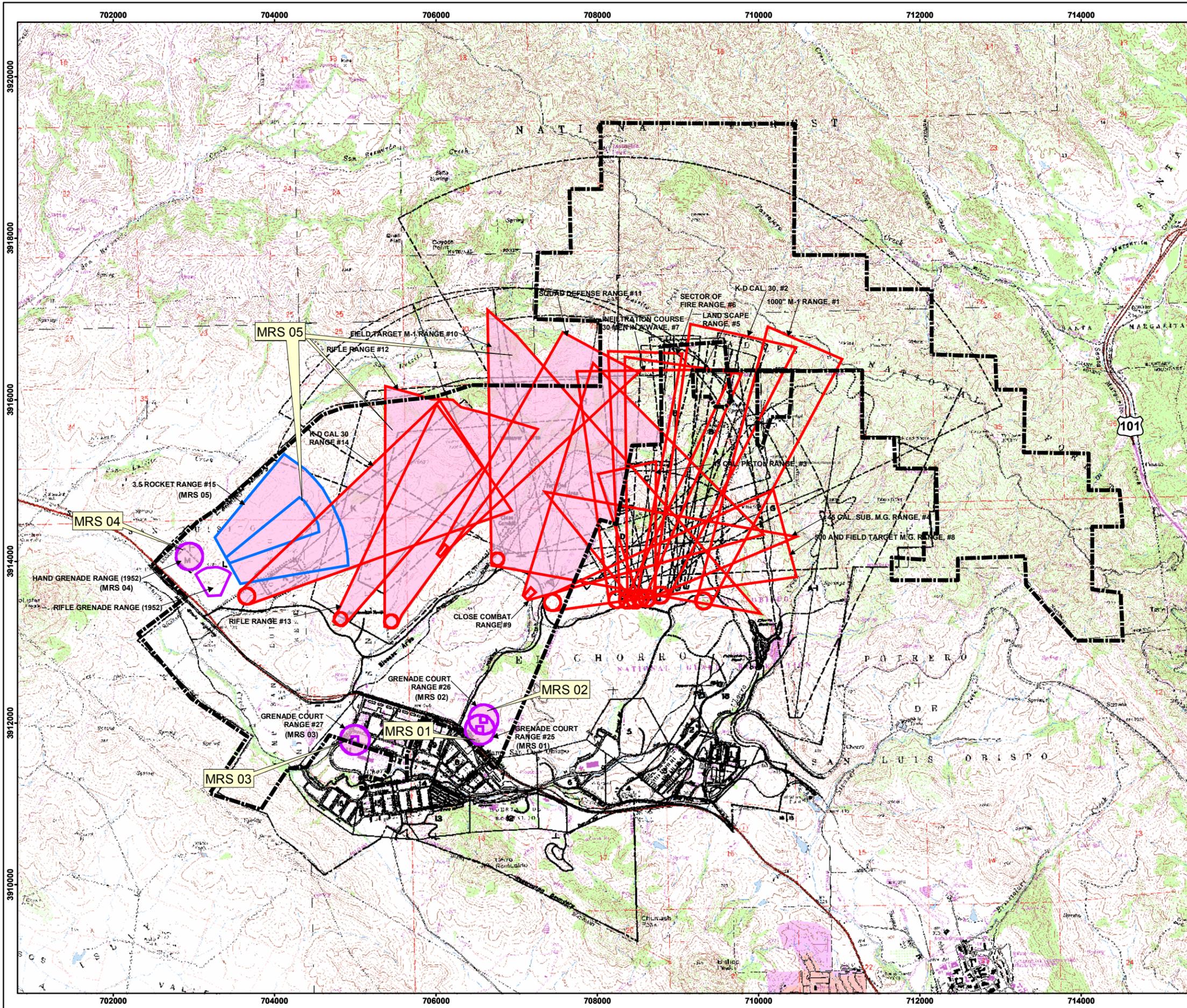
Image: USGS 7.5' Topo Quadrangles, 1967  
Projection: UTM Zone 10 NAD83, Units in Meters



PARSONS

U.S. ARMY SOUTH  
PACIFIC DIVISION  
RANGE SUPPORT CENTER

DESIGNED BY: BT	<b>Site Setting and MRS Designation</b>		PROJECT NUMBER: 744653.30000
DRAWN BY: BT			SCALE: As Shown
CHECKED BY: IN	DATE: August 2007	PAGE NUMBER: 1-8	
SUBMITTED BY: DS	FILE: X:\GIS\Site_Inspections_sw\Maps\CampSanLuisObispo_cali_Fig1_3.mxd		



**U.S. ARMY CORPS OF ENGINEERS**  
**Los Angeles District**



**REMEDIAL INVESTIGATION /  
FEASIBILITY STUDY**  
**Camp San Luis Obispo, California**  
**FUDS Project Number – J09CA203105**  
**Contract No. W912PL-09-D-0005**  
**Task Order 0003**

**REMEDIAL INVESTIGATION /  
FEASIBILITY STUDY**  
**WORK PLAN**  
**FINAL**  
**AUGUST 2011**

**Prepared By:**

**Bristol Environmental Remediation Services, LLC**  
**111 W. 16<sup>th</sup> Avenue, Third Floor**  
**Anchorage, Alaska 99501-5109**  
**Phone (907) 563-0013**  
**Fax (907) 563-6713**



## TABLE OF CONTENTS

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
ACRONYMS AND ABBREVIATIONS .....	ix
1.0 INTRODUCTION .....	1-1
1.1 Project Authorization .....	1-1
1.2 Identification of Guidance, Regulations, or Other Policy .....	1-2
1.2.1 Assessment of Applicable or Relevant and Appropriate Requirements .....	1-3
1.3 Work Plan .....	1-11
1.3.1 Organization .....	1-11
1.4 Project Location .....	1-14
1.5 Site Description .....	1-14
1.5.1 Topography .....	1-14
1.5.2 Vegetation .....	1-15
1.5.3 Climate .....	1-15
1.5.4 Soil .....	1-16
1.5.5 Site Geology .....	1-16
1.5.6 Surface water/Groundwater .....	1-17
1.6 Site History .....	1-18
1.7 Current and Projected Land Use .....	1-19
1.8 Previous Investigation of the Site .....	1-20
1.8.1 Preliminary Assessments .....	1-21
1.8.2 Time-Critical Removal Action, 1992 .....	1-21
1.8.3 Archive Search Report .....	1-22
1.8.4 Draft Preliminary Historical Records Review .....	1-22
1.8.5 Site Investigation in 2007 .....	1-23
1.8.6 ESTCP Wide Area Assessment .....	1-25
1.8.7 Time-Critical Removal Action, 2010 .....	1-25
1.8.8 Non-Investigation Related Munitions Finds .....	1-26
1.9 Summary of MEC Hazard .....	1-28
1.9.1 Munitions and Explosives of Concern Hazard Assessment .....	1-28
1.9.2 Munitions Response Sites Prioritization Protocol .....	1-29
1.9.3 Nature of Potential Threats .....	1-29

2.0	TECHNICAL MANAGEMENT PLAN.....	2-1
2.1	Project Objectives .....	2-1
2.2	Project Organization .....	2-1
2.2.1	U.S. Army Corps of Engineers, Los Angeles District .....	2-1
2.2.2	Bristol Environmental Remediation Services, LLC .....	2-2
2.2.3	InDepth Corporation .....	2-2
2.3	Project Personnel .....	2-2
2.3.1	Project Manager .....	2-3
2.3.2	Program Manager.....	2-3
2.3.3	Contracts/Procurement Manager .....	2-3
2.3.4	Quality Control Manager .....	2-4
2.3.5	Health and Safety Manager.....	2-4
2.3.6	Senior UXO Supervisor .....	2-4
2.3.7	UXO Quality Control Officer .....	2-5
2.3.8	UXO Safety Officer .....	2-6
2.3.9	Geophysical Manager .....	2-7
2.3.10	Field Geophysicists.....	2-7
2.3.11	Project Scientist .....	2-8
2.3.12	GIS Manager .....	2-8
2.3.13	UXO Technician III .....	2-8
2.3.14	UXO Technician II .....	2-9
2.4	Project Communications and Reporting .....	2-9
2.5	Project Deliverables .....	2-10
2.6	Project Schedule.....	2-10
2.7	Periodic Reporting .....	2-10
2.8	Project community Relations Support .....	2-10
2.9	Subcontractor Management .....	2-11
2.10	Management of Field Operations.....	2-12
2.11	Organizational Chart.....	2-14
2.12	Identification of Guidance, Regulations, or Other Policy.....	2-15
2.13	Recovered Chemical Warfare Materiel .....	2-16
2.14	Procedures for Recovered MEC .....	2-16
2.15	Technical Scope of MEC Investigation .....	2-16

2.16	Changed Site Conditions.....	2-16
2.17	Mobilization Plans .....	2-16
2.18	Site Preparation and Activities.....	2-17
2.19	Statistical Sampling.....	2-17
2.20	MEC Reporting and Disposition.....	2-17
3.0	FIELD INVESTIGATION PLAN .....	3-1
3.1	Overall Approach to the RI/FS .....	3-1
3.1.1	Site Characterization Goals.....	3-2
3.1.2	Data Quality Objectives .....	3-5
3.1.3	Data Incorporation into the RI/FS Report.....	3-8
3.1.4	MEC/MC Exposure Analysis.....	3-10
3.1.5	Use of TCRA .....	3-10
3.1.6	Follow on Activities.....	3-11
3.2	Identification of Areas of Concern.....	3-11
3.3	Remedial Investigation Tasks .....	3-12
3.3.1	Location Surveys and Mapping .....	3-12
3.3.2	Digital Data .....	3-14
3.3.3	Items and Data.....	3-14
3.4	Surface Preparation .....	3-15
3.5	Geophysical System Verification Plan.....	3-15
3.6	Geophysical Investigation Plan.....	3-15
3.6.1	Site Description.....	3-16
3.6.2	Geophysical Investigation Plan.....	3-18
3.6.3	Geophysical Investigation Performance Goals .....	3-38
3.6.4	Geophysical Mapping Data.....	3-40
3.7	Intrusive Investigation.....	3-41
3.7.1	General Methodology.....	3-41
3.7.2	Accountability and MEC Records Management.....	3-42
3.7.3	UXO Personnel Qualifications.....	3-42
3.7.4	MEC Intrusive Investigation Locations .....	3-42
3.7.5	MEC Intrusive Investigation Procedures .....	3-43
3.7.6	Munitions with the Greatest Fragmentation Distance.....	3-46
3.7.7	Minimum Separation Distances .....	3-46

3.7.8	MEC Identification .....	3-46
3.7.9	MEC Removal .....	3-47
3.7.10	MEC Storage.....	3-47
3.7.11	MEC Disposal.....	3-48
3.7.12	Disposal Alternatives .....	3-54
3.8	Investigative Derived Waste .....	3-55
3.9	Risk Assessment and Analysis.....	3-55
3.9.1	Munitions and Explosives Hazard Assessment .....	3-55
3.9.2	Munitions Response Sites Prioritization Protocol .....	3-57
3.10	Analysis of Institutional Controls .....	3-57
3.11	Recurring Review Plan .....	3-57
4.0	QUALITY CONTROL PLAN .....	4-1
4.1	Introduction.....	4-1
4.2	Site Specific Quality Control Plan.....	4-1
4.3	Quality Control Organization .....	4-1
4.3.1	Responsibilities and Authority.....	4-1
4.3.2	Personnel Qualifications and Training.....	4-4
4.4	Quality Management Systems .....	4-4
4.4.1	QC Management .....	4-4
4.4.2	Phase Control Process.....	4-5
4.4.3	Quality Reporting.....	4-12
4.5	Equipment Maintenance and Response Check .....	4-14
4.5.1	Maintenance.....	4-14
4.5.2	Response Check Log.....	4-15
4.5.3	Maintenance Records.....	4-15
4.5.4	Equipment Spare Parts.....	4-16
4.5.5	Equipment Checkout and Receiving Inspections .....	4-16
4.5.6	Contractor Acquired Property or Government Furnished Property.....	4-16
4.6	Field Change Control.....	4-17
4.6.1	Responsibilities .....	4-17
4.6.2	Procedure .....	4-17
4.6.3	Records .....	4-19
4.7	Audits.....	4-19

4.7.1	Objectives.....	4-19
4.7.2	Responsibilities .....	4-20
4.7.3	Audit Procedure .....	4-20
4.7.4	Pass/Fail Criteria .....	4-21
4.7.5	Records.....	4-21
4.8	Nonconformance/Corrective Actions.....	4-21
4.8.1	Nonconformance Procedures .....	4-22
4.8.2	Corrective Actions .....	4-22
4.8.3	QC Records .....	4-23
4.9	Lessons Learned.....	4-23
5.0	EXPLOSIVES MANAGEMENT .....	5-1
5.1	Explosives Management .....	5-1
5.1.1	Acquisition .....	5-1
5.1.2	Initial Receipt.....	5-2
5.1.3	Receipt Procedure .....	5-3
5.1.4	Storage.....	5-3
5.1.5	Transportation .....	5-4
5.1.6	Lost/Stolen or Unauthorized Use of Explosives/MEC .....	5-5
5.1.7	Return of Unused Explosives.....	5-5
5.1.8	Procedures for Disposal of Unused Explosives .....	5-5
6.0	ENVIRONMENTAL PROTECTION PLAN.....	6-1
6.1	Wetlands.....	6-1
6.2	Coastal Zones .....	6-3
6.3	Cultural and Historical Resources.....	6-3
6.3.1	Existing Waste Disposal Sites Within the Project Site .....	6-3
6.3.2	Cultural, Archeological, and Water Resources .....	6-4
6.4	Biological Resources.....	6-8
6.4.1	Plant Resources .....	6-8
6.4.2	Animal Resources .....	6-8
6.4.3	Special Status Species .....	6-10
6.5	Mitigation.....	6-16
6.5.1	Manifestation, Transportation, and Disposal of Wastes .....	6-16
6.5.2	Burning Activities .....	6-16

6.5.3	Dust and Emission Control .....	6-17
6.5.4	Spill Control and Prevention.....	6-17
6.5.5	Storage Areas and Temporary Facilities.....	6-17
6.5.6	Access Routes .....	6-18
6.5.7	Trees and Shrubs Protection and Restoration .....	6-18
6.5.8	Water Run-on and Run-off .....	6-18
6.5.9	Decontamination and Disposal of Equipment .....	6-18
6.5.10	Minimizing Areas of Disturbance.....	6-19
6.5.11	Post-activity Cleanup .....	6-19
6.5.12	Air Monitoring Programs.....	6-19
7.0	PROPERTY MANAGEMENT PLAN.....	7-1
8.0	INTERIM HOLDING FACILITY SITING PLAN FOR RCWM PROJECTS .....	8-1
9.0	PHYSICAL SECURITY PLAN FOR RCWM PROJECT SITES .....	9-1
10.0	REFERENCES .....	10-3

### TABLES AND FIGURES

Table 1-1	Chemical-Specific ARARS
Table 1-2	Location-Specific ARARS
Table 1-3	Action-Specific ARARS
Table 1-4	2010 TCRA, MEC Items
Figure 2-1	Project Organization Chart
Figure 2-2	CSLO RI/FS Schedule
Figure 3-1	RI/FS Decision Logic Flow Chart
Figure 3-2	Data Management Flow Diagram
Table 3-1	VSP Calculation Table
Table 3-2	Geophysical Survey MQOs, Metrics and Measurements
Table 4-1	Definable Features of Work/QC Actions
Table 6-1	Federally Threatened and Endangered Species List for CSLO
Table 6-2	Possible Mitigation Strategies for Biological Resources

## **APPENDICES**

- Appendix A Performance Work Statement
- Appendix B Site Maps
- Appendix C Points of Contact
- Appendix D Accident Prevention Plan
- Appendix E Munitions Constituents Sampling and Analysis Plan
- Appendix F Contractor Forms
- Appendix G Geophysical System Verification Plan
- Appendix H Contractor Personnel Qualification and Certification Letter
- Appendix I Technical Project Planning Memorandum (On CD Only)
- Appendix J Project Data Quality Objectives and Conceptual Exposure Site Models
- Appendix K Standard Operating Procedures
- Appendix L Fragmentation Database Worksheets

(Intentionally blank)

## ACRONYMS AND ABBREVIATIONS

APA	Aerial Photo Analysis
APP	Accident Prevention Plan
ARAR	Applicable or Relevant and Appropriate Requirement
ASR	Archive Search Report
ATF	Alcohol, Tobacco, and Firearms
BATFE	Bureau of Alcohol, Tobacco, Firearms and Explosives
bgs	below ground surface
BIP	Blow-in-place
Bristol	Bristol Environmental Remediation Services, LLC
BSP	Blind Seeding Program
CAA	Clean Air Act
Cal EPA	California Environmental Protection Agency
Cal Poly	California Polytechnic State University
CAP	contractor-acquired property
CDFG	California Department of Fish and Game
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHHSL	California Human Health Screening Level
CNG	California National Guard
CO	Contracting Officer
Contractor	Bristol Environmental Remediation Services, LLC
COR	Contracting Officer's Representative
CESM	conceptual exposure site model
CSLO	Camp San Luis Obispo
CWA	Clean Water Act
DD	Decision Document
DDESB	Department of Defense Explosive Safety Board
DERP	Defense Environmental Restoration Program
DFW	definable features of work
DGM	digital geophysical mapping

### ACRONYMS AND ABBREVIATIONS (continued)

DGPS	Differential Global Positioning System
DID	Data Item Description
DMM	Demilitarized Military Munitions
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DQO	data quality objective
DTSC	Department of Toxic Substances Control
EDigS	Electronic Dig Sheet
EM	Engineer Manual
EOD	explosive ordnance disposal
EP	Engineering Pamphlet
ESP	Explosives Site Plan
ESRI	Environmental Systems Research Institute
ESTCP	Environmental Security Technology Certification Program
EZ	exclusion zone
FCR	Field Change Request
FS	Feasibility Study
FUDS	Formerly Used Defense Site
gdb	Geosoft database
GFP	government-furnished property
GIS	Geographic Information System
gpm	gallons per minute
GPS	Global Positioning System
GSA	General Services Administration
GSV	Geophysical System Verification
HA	hazard assessment
HE	High Explosive
HFD	hazardous fragment distance
HRR	Historical Records Review
HTRW	Hazardous, Toxic, and Radioactive Waste
IDW	Investigative-Derived Waste

### ACRONYMS AND ABBREVIATIONS (continued)

InDepth	InDepth Corporation
ISO	industry standard object
IVS	instrument verification strip
MC	munitions constituents
MD	munitions debris
MEC	munitions and explosives of concern
MMR	Military Munitions Rule
MMRP	Military Munitions Response Program
MPPEH	Material Potentially Presenting an Explosive Hazard
MQO	measured quality objectives
MRS	Munitions Response Site
MRSPP	MRS Prioritization Protocol
MSD	minimum separation distance
mV	millivolts
NAD	North American Datum
NARA-CP	National Archives and Records Administration at College Park, Maryland
NAVD	North American Vertical Datum
NDAI	No DoD Actions Indicated
NEW	net explosive weight
NHPA	National Historic Preservation Act
OESS	Ordnance and Explosive Safety Specialist
OSHA	Occupational Safety and Health Administration
OSIC	On-Scene Incident Commander
PA	Preliminary Assessment
PAL	Project Action Levels
PAO	Public Affairs Office
PM	Project Manager
PPE	personal protective equipment
POTW	publicly owned treatment works
PWS	Performance Work Statement
QA	quality assurance

### **ACRONYMS AND ABBREVIATIONS (continued)**

QAPP	Quality Assurance Project Plan
QC	quality control
QCP	Quality Control Plan
RA	Removal Action
RCRA	Resource Conservation and Recovery Act
RCWM	Recovered Chemical Warfare Materiel
RI	Remedial Investigation
RTK	Real Time Kinematic
SAP	Sampling and Analysis Plan
SDSFIE	Spatial Data Standards for Facilities, Infrastructure, and Environment
SDWA	Safe Drinking Water Act
SI	Site Inspection
SOP	Standard Operating Procedure
SSHP	Site Safety and Health Plan
SUXOS	Senior UXO Supervisor
TBC	To Be Considered
TCRA	Time-Critical Removal Action
TOI	target of interest
TPP	Technical Project Planning
USC	United States Code
USEPA	U.S. Environmental Protection Agency
UFP	Uniform Federal Policy
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
UXOQC	UXO Quality Control (Officer)
UXOSO	UXO Safety Officer
VMS	Visual Marking System
WAA	wide area assessment
WP	Work Plan

## **1.0 INTRODUCTION**

### **1.1 PROJECT AUTHORIZATION**

This work plan (WP) has been prepared in compliance with the Performance Work Statement (PWS) identified in Contract W912PL-09-D-0005, Task Order 0003, with the U.S. Army Corps of Engineers (USACE), Los Angeles District. USACE, Los Angeles District, has administrative control and is managing all aspects of this project. A copy of the PWS dated 07 January 2010 has been provided as Appendix A of this WP. The work required under this PWS is authorized under the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS) J09CA203105 at Camp San Luis Obispo (CSLO), San Luis Obispo, California.

Bristol Environmental Remediation Services, LLC (Bristol), under this contract, was tasked to execute a Remedial Investigation/Feasibility Study (RI/FS) to define target areas at Munitions Response Sites (MRS): MRS-01, MRS-02, and MRS-05 at CSLO. Bristol will furnish all labor, management, supervision, tools, materials, equipment, mobilization, demobilization, and transportation required to accomplish the RI/FS tasks. Bristol will provide competent, trained, and qualified personnel as necessary to meet project objectives.

This project WP has been prepared to summarize the activities performed in completion of field work from the RI tasks:

- Create a project WP, including a Sampling and Analysis Plan (SAP) and Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP) in accordance with Department of Defense (DoD) Data Item Description (DID) Military Munitions Response Program (MMRP)-09-001, and additional guidance specified in the PWS;
- Perform geophysical survey at three MRSs;
- Perform reacquisition and subsurface investigation of up to 4,399 targets on approximately 2,549 acres. The RI will consist of Digital Geophysical Mapping (DGM) of the area, target definition, target re-acquisition, intrusive investigation, and removal;
- Properly dispose of all unexploded ordnance (UXO)/munitions and explosives of concern (MEC) and demilitarized military munitions (DMM) encountered during the investigation;

- Conduct background metals survey and munitions constituent (MC) sampling as specified in the Data Quality Objectives (DQOs);
- Prepare and manage project Geographic Information System (GIS) in accordance with current CEHNC-CX-MM-DID; and
- Create a RI/FS report.

## **1.2 IDENTIFICATION OF GUIDANCE, REGULATIONS, OR OTHER POLICY**

The DoD established the MMRP to investigate DoD sites suspected of containing MEC or MC. Under the MMRP, the USACE is conducting environmental response activities at FUDS for the Army, the DoD's Executive branch for the FUDS Program.

The purpose of this RI/FS is to address UXO, DMM, and MC, adequately characterize target areas associated with three MRS, and allow for the evaluation of remedial alternatives. This information is to be used to prepare and obtain stakeholder concurrence on a Decision Document (DD).

At the conclusion of the RI/FS, Bristol, in coordination with the USACE, will develop an RI/FS report that documents the results of the investigation, evaluate the findings of those activities in association with the proposed MEC alternatives, and recommend further remedial actions, a risk management process, or No DoD Actions Indicated (NDAI) for the areas investigated. The format of the RI/FS report will be consistent with USACE guidance documents, including the following: USACE Huntsville (Environmental and Munitions Center for Expertise) DID MMRP-09-001, USACE Engineering Manual (EM) 1110-1-4009, and EM 385-1-1 as appropriate.

USACE will oversee the implementation of the activities outlined in this WP. The technical and community involvement coordinators for the project are:

Lloyd Godard  
FUDS Program Manager  
USACE, Los Angeles District, CESPLPM-M  
915 Wilshire Blvd, Suite 15011  
Los Angeles, CA 90017-3401  
213-452-3990  
[lloyd.e.godard@usace.army.mil](mailto:lloyd.e.godard@usace.army.mil)

B.J. Allen  
Ordnance and Explosive Safety Specialist (OESS)  
USACE, Los Angeles District  
SPD/SWD Range Support Center  
Carlsbad Field Office  
6010 Hidden Valley Rd., Suite 105  
Carlsbad, CA 92011  
951-316-1495  
[Billy.J.Allen@usace.army.mil](mailto:Billy.J.Allen@usace.army.mil)

Jay Field  
Public Affairs Officer  
USACE, Los Angeles District, CESPLPA  
915 Wilshire Blvd, Suite 15011  
Los Angeles, CA 90017-3401  
213-452-3920  
[thomas.j.field@usace.army.mil](mailto:thomas.j.field@usace.army.mil)

### **1.2.1 Assessment of Applicable or Relevant and Appropriate Requirements**

This section presents an initial assessment of Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBC) guidance for the RI/FS. Throughout the investigation processes at CSLO, the ARARs/TBC lists will be updated if additional ARARs and guidance are identified. Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that site cleanups comply with federal ARARs, or state ARARs in cases where these requirements are more stringent than federal requirements. ARARs and TBC guidance are derived from both federal and state laws and guidance. Under CERCLA Section 121(d) (2), the federal ARARs/TBCs for remedial action could include requirements under any of the federal environmental laws (i.e., Clean Air Act [CAA], Clean Water Act [CWA], and Safe Drinking Water Act

[SDWA]). State ARARs (e.g., California Human Health Screening Levels [CHHSL]) include promulgated requirements under state environmental or facility siting laws that are more stringent than federal ARARs and that have been identified in a timely manner, according to 40 Code of Federal Regulations (CFR) Part 300.400(g)(4). A requirement may be either “applicable” or “relevant and appropriate,” or “TBC.”

Applicable requirements are defined as those cleanup or control standards, or other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state laws. Applicable requirements are identified on a site-specific basis by determining whether the jurisdictional prerequisites of a requirement fully address the circumstances at the site or the proposed remedial activity. All pertinent jurisdictional prerequisites must be met for the requirement to be applicable. These jurisdictional prerequisites are as follows:

- The party must be subject to the law;
- The substances or activities must fall under the authority of the law;
- The law must be in effect at the time the activities occur; and
- The statute or regulation requires, limits, or protects the types of activities.

A requirement is applicable if the specific terms (or jurisdictional prerequisites) of the statute or regulation directly address the circumstances at the site.

If not applicable, a requirement may be relevant and appropriate if circumstances at the site are sufficiently similar to the problems or situations regulated by the requirement. “Relevant and appropriate” refers to those cleanup standards, or other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that, while not necessarily applicable, address problems or situations sufficiently similar to those encountered at the CERCLA site, and whose use is well suited to the particular site. The relevance and appropriateness of a requirement can be judged by comparing a number of factors, including the characteristics of the remedial action, the items in question, or the physical circumstances of the site, with those addressed in the requirement. If there is sufficient similarity between the requirements and circumstances at the site, determination of the requirement as relevant and appropriate may be made.

Determining whether a requirement is both relevant and appropriate is a two-step process. First, to determine relevance, a comparison is made between the response action, location, or chemicals covered by the requirement and related conditions at the site, release, or potential remedy. A requirement is relevant if it generally pertains to these conditions. Second, to determine whether the requirement is appropriate, the comparison is further refined by focusing on the nature of the items, the characteristics of the site, the circumstances of the release, and the proposed response action. The requirement is appropriate if based on such comparison, its use is well suited to the particular site. The facility must comply with requirements that are determined to be both relevant and appropriate.

In addition to ARARs, non-promulgated advisories or guidance referred to as TBC materials may also apply to the conditions found at a site. TBCs are not legally binding. There are certain circumstances under which ARARs may be waived. CERCLA Section 121(d) allows the selection of alternatives that will not attain ARAR status if any of six conditions for a waiver of ARARs exists. However, the selected alternative must be protective even if an ARAR is waived. Only five of the conditions for a waiver may apply to a DoD site. The conditions for a waiver are as follows:

- The clearance action selected is only part of a total response action that will attain such level or standard of control when completed;
- Compliance with such a requirement at a particular site will result in greater hazard to human safety and the environment (i.e., worker safety) than alternative options;
- Compliance is technically impracticable from an engineering perspective;
- The clearance action selected will result in a standard of performance that is equivalent to an applicable requirement through the use of another method or approach;
- A state requirement has not been equitably applied in similar circumstances on other clearance actions within the state; and
- A fund-financed clearance action does not provide a balance between available monies and the need for protection of public safety and the environment at sites where the need is more immediate (not applicable to DOD sites).

ARARs that govern actions at CERCLA sites fall into three broad categories based on the chemical contaminants present, site characteristics, and alternatives proposed for cleanup.

These three categories (chemical-specific, location-specific, and action-specific) are described in the following subsections.

**1.2.1.1 Chemical-Specific ARARs**

Chemical-specific ARARs include those environmental laws and regulations that regulate the release to the environment of materials with certain chemical or physical characteristics or that contain specified chemical compounds. There are no chemical-specific ARARs for MEC; however, chemical-specific ARARs associated with MC were developed. These requirements generally set health- or risk-based concentration limits or discharge limits for specific hazardous substances by media. Chemical-specific ARARs are triggered by the specific chemical contaminants found at a particular site. USEPA currently considers standards developed under the Resource Conservation and Recovery Act (RCRA), the SDWA, the CWA, and federal Ambient Water Quality Criteria for the protection of aquatic life as potential ARARs. A more stringent standard, requirement, criterion, or limitation promulgated pursuant to a state environmental statute is also a potential ARAR.

**Table 1-1 Potential Chemical-Specific ARARs and TBC Guidance**

Prerequisite	Law/Regulation	Description	ARAR/TBC Status
Impacted soil	CHHSLs, Cal EPA	Provides screening levels of hazardous chemicals in soil or soil gas that the Cal EPA considers to be below thresholds of concern for risks to human health.	TBC: May be applicable to soil left in place at the MRSs

Notes:

- ARARs = Applicable or Relevant and Appropriate Requirements
- Cal EPA = California Environmental Protection Agency
- CHHSLs = California Human Health Screening Levels
- MRS = munitions response site
- TBC = To be considered

**1.2.1.2 Location-Specific ARARs**

Location-specific ARARs govern activities in certain environmentally sensitive areas. These requirements are triggered by the particular location and the proposed activity at the site. Actions may be restricted or precluded based on proximity to wetland or floodplains or the presence of natural or cultural resources. Discussions of ARARs applicable to threatened and endangered species, migratory birds, wetlands, and cultural resources are further discussed specific to the MRSs discussed in Sections 6.2 and 6.3.

**Table 1-2 Potential Location-Specific ARARs and TBC Guidance**

Location	Law/Regulation	Description	ARAR/TBC Status
Critical habitat upon which threatened or endangered species may depend	RCRA 16 USC Section 1531; 16 USC 1536(a)		
	50 CFR 81, 225, 402	Action to conserve endangered species or threatened species, including consultation with the U.S. Department of the Interior. Reasonable mitigation and enhancement measures must be taken, including live propagation, transplantation, and habitat acquisition and improvement.	ARAR: Substantive requirements are potentially relevant and appropriate if threatened and endangered species are present on site.
Migratory bird area	RCRA 16 USC Section 703		
		Protects almost all species of native birds in the United States from unregulated "take."	ARAR: Substantive requirements are relevant and appropriate

Notes:

- |      |   |  |       |   |                                      |
|------|---|--|-------|---|--------------------------------------|
| ARAR | = | Applicable or Relevant and Appropriate Requirement | TBC   | = | To be considered                     |
| CCR  | = | California Code of Regulations                     | USC   | = | United States Code                   |
| CFR  | = | Code of Federal Regulations                        | USEPA | = | U.S. Environmental Protection Agency |
| RCRA | = | Resource Conservation and Recovery Act             |       |   |                                      |

**1.2.1.3 Action-Specific ARARs**

Action-specific ARARs are restrictions that define acceptable treatment and disposal procedures for hazardous substances. These ARARs generally set performance, design, or other similar action-specific controls or restrictions on particular kinds of activities. An example might be a state Air Quality Management Authority that sets limitations on fugitive dust generated during grading and excavation activities during a clearance action.

**Table 1-3 Potential Action-Specific ARARs and TBC Guidance**

Location	Law/Regulation	Description	ARAR/TBC Status
Discharges to surface water	Clean Water Act 33 USC Section 1317		
	Water Code §§13241, 13243, 13263(a), and 13360	<p>CWA requirements ensure that stormwater discharges from surface disturbances &gt; 1 acre do not violate surface water quality standard.</p> <p>Establishes standards for permit compliance, system operations and maintenance, monitoring and record keeping, and reporting.</p> <p>Authorizes the State and Regional Water Boards to establish in Water Quality Control Plans beneficial uses and numerical and narrative standards to protect both surface and ground water quality.</p> <p>Authorizes Regional Water Boards to issue permits for discharges to land or surface water or groundwater that could affect water quality, including NPDES permits, and to take enforcement action to protect water quality.</p>	ARAR: Applicable to the substantive requirements of the permit program for stormwater discharge during intrusive investigation if > 1 acre of land is disturbed.
Indirect discharges to POTW	Clean Water Act (33 USC Section 1317)		
	40 CFR 403	Establishes list of toxic pollutants and promulgates pretreatment standards for discharge to POTWs.	ARAR: Applicable if discharge of decontamination water to a POTW is proposed.
Munitions and MEC identification	RCRA (42 U.S.C. §§ 6901–6991[i])		
	DoD Policy to Implement the USEPA Military Munitions Rule (MMR)	DoD policy to implement the MMR outlines DoD procedures for the identification of and response to munitions residues.	TBC for MEC discovered during RI/FS activities
Solid waste	RCRA (42 U.S.C. §§ 6901–6991[i])		
Container storage	Title 22 CCR § 66264.171, .172, .173	<p>Containers of RCRA hazardous waste must be:</p> <ul style="list-style-type: none"> <li>• maintained in good condition,</li> <li>• compatible with hazardous waste to be stored, and</li> <li>• closed during storage except to add or remove waste.</li> </ul>	ARAR: Substantive requirements are potentially relevant and appropriate if waste generated during the RI is hazardous waste that is containerized prior to disposal.
	Title 22 CCR § 66264.174	Inspect container storage areas weekly for deterioration.	

**Table 1-3 Potential Action-Specific ARARs and TBC Guidance (continued)**

Location	Law/Regulation	Description	ARAR/TBC Status
Solid Waste	RCRA (42 U.S.C. §§ 6901–6991[i])		
Container storage	Title 22 CCR § 66264.175(a) and (b)	Place containers on a sloped, crack-free base and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.	
	Title 22 CCR § 66264.176	Keep containers of ignitable or reactive waste at least 50 feet from the facility property line.	
	Title 22 CCR § 66264.177	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.	
	Title 22 CCR § 66264.178	At closure, remove all hazardous waste and residues from the containment system and decontaminate or remove all containers and liners.	
Placement of waste in land disposal units	Title 22 CCR § 66268.40	Requirements for placement of RCRA hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, or underground mine or cave. Movement of excavated materials to new location and placement in or on land will trigger LDRs for the excavated waste or closure requirements for the unit in which the waste is being placed.	ARAR: Substantive requirements are potentially relevant and appropriate if hazardous IDW soil would be disposed of at off-site landfill.
Waste pile, use and closure	Title 22 CCR § 66264.251 (except 251[j], 251[e][11])	Regulations for RCRA hazardous waste, noncontainerized accumulation of solid, nonflammable hazardous waste that is used for treatment or storage. Use a single liner and leachate collection system. Waste put into waste pile is subject to land ban regulations.	ARAR: Substantive requirements are potentially relevant and appropriate if soil excavated during RI is hazardous and stored on site in stockpiles prior to disposal.
	Title 22 CCR § 66264.553(b), (d), (e), and (f)	Alternative requirements that are protective of human health or the environment may replace design, operating, or closure standards for temporary tanks and container storage areas.	

**Table 1-3 Potential Action-Specific ARARs and TBC Guidance (continued)**

Location	Law/Regulation	Description	ARAR/TBC Status
Solid Waste	RCRA (42 U.S.C. §§ 6901–6991[i])		
	40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2), (e), (f), (h), (i), (j), and (k)	Hazardous remediation waste temporarily stored in piles: Allows generators to accumulate solid remediation waste in a USEPA-designated pile for storage only, up to 2 years, during remedial operations without triggering LDRs.	
	Title 22 CCR § 66264.221(c), (e), (h); § 66264.251(c), (d), (f), (g), (h), (k); § 66264.273(c), (d), (j)(1); § 66264.301(c), (d), (f), (g)	RCRA hazardous waste treated, stored, or disposed after the effective date of the requirements: Prevent run-on and control and collect runoff from a 24-hour, 25-year storm (waste piles, land treatment facilities, landfills). Prevent overtopping of surface impoundments.	
Air Emissions	Clean Air Act (CAA) 40 USC 7401 et seq.		
	SBAPCD Rule 303	The CAA specifies acceptable emission levels. Prohibits discharge from any source whatsoever such quantities of air contaminants or other material in violation of Section 41700 of the Health and Safety Code which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety or any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property	ARAR: Potentially applicable to fugitive dust emissions RI.

**Table 1-3 Potential Action-Specific ARARs and TBC Guidance (continued)**

Location	Law/Regulation	Description	ARAR/TBC Status
Air Emissions	<b>Clean Air Act (CAA) 40 USC 7401 et seq.</b>		
	SBAPCD Rule 302 (b)	Visible emissions standard that states a person shall not discharge any air contaminant into the atmosphere from any single source of emission for a period or periods aggregating more than 3 minutes in a 60-minute period, which is (a) as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, or (b) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (a).	ARAR: Potentially applicable to fugitive dust emissions during RI.

Notes:

ARAR	=	Applicable or Relevant and Appropriate Requirement	MMR	=	Military Munitions Rule
CAA	=	Clean Air Act	NPDES	=	National Pollutant Discharge Elimination System
CCR	=	California Code of Regulations	POTW	=	publicly owned treatment works
CFR	=	Code of Federal Regulations	RCRA	=	Resource Conservation and Recovery Act
CWA	=	Clean Water Act	RI	=	remedial investigation
DoD	=	U.S. Department of Defense	TBC	=	To be considered
FS	=	feasibility study	SBAPCD	=	Santa Barbara County Air Pollution Control District
IDW	=	Investigative-derived waste	USC	=	United States Code
LDRs	=	Land Disposal Restrictions	USEPA	=	U.S. Environmental Protection Agency
MEC	=	munitions and explosives of concern			

### 1.3 WORK PLAN

#### 1.3.1 Organization

This WP is organized to provide the plan components or procedures and the site-specific characterization plan required to successfully complete the RI/FS activities. For ease of use, this document is divided into chapters and appendices in accordance with USACE DID MMRP-09-001:

- Chapter 1 – Introduction. This chapter presents the project purpose and scope, site description and history, current and projected land use, previous investigations of the site, and an initial summary of hazard from MEC;
- Chapter 2 – Technical Management Plan. This chapter presents the project objectives as well as the project organization and lines of communication. This chapter outlines the project deliverables and reporting and presents the project schedule;

- Chapter 3 – Field Investigation Plan. This chapter provides details about the site characterization goals, DQOs, data incorporated into the RI/FS report, MEC exposure analysis and the use of Time-Critical Removal Actions (TCRAs) during the project;
- Chapter 4 – Quality Control Plan (QCP). This chapter provides details of the approach, methods, and operational procedures to be used to ensure quality throughout the duration of the project. This chapter includes procedures for audits, corrective/preventive actions, data management, digital geophysical operations, anomaly acquisition and reacquisition, field operations, equipment calibration/maintenance requirements, pass/fail criteria for all quality audits, records generated, lessons learned and a process/training plan for all on-site personnel to ensure each employee meets qualification requirements as defined in the contract;
- Chapter 5 – Explosive Management Plan. This chapter provides information about the management of explosives for specific munitions responses in accordance with local, state, and federal regulations and contains a copy of the contractor’s explosive license. It also presents the procedures for the acquisition, initial receipt, storage, transportation, and inventory of explosives that are required to support the project, as well as procedures in the event of loss, stolen or unauthorized use of such explosives;
- Chapter 6 – Environmental Protection Plan. This chapter provides information about the approach, methods, and operational procedures to be employed to protect the natural environment during performance of all tasks related to the project. The plan is site specific and describes procedures and methods during site activities to minimize pollution, protect and conserve cultural and natural resources, restore any damage, and control noise and dusts within reasonable limits. Procedures are also provided that detail methods to protect and/or mitigate damages to the resource/sites of all known endangered/threatened species, wetlands, cultural/archeological/water resources, trees/shrubs that may be removed and existing waste disposal sites (if applicable);
- Chapter 7 – Property Management Plan. Not required or included in this WP;
- Chapter 8 – Interim Holding Facility Siting Plan for Recovered Chemical Warfare Materiel (RCWM) Project Sites. Not required or included in this WP;
- Chapter 9 – Physical Security Plan for RCWM Project Sites. Not required or included in this WP;
- Chapter 10 – References. This chapter lists all guidance, regulations and policy under which the work will be done;
- Appendix A –Performance Work Statement. This appendix contains the PWS specifying the RI/FS tasks;
- Appendix B – Site Maps. This appendix contains maps associated with this WP;
- Appendix C – Points of Contact. This appendix contains contact information for the project team including regulators, stakeholders, vendors, and law enforcement/fire control for use during the project. This appendix will be reviewed and updated as necessary throughout the project;

- Appendix D – Accident Prevention Plan (APP). The APP, in conjunction with Bristol’s Injury, Illness, Prevention Plan and the Site Safety and Health Plan (SSHP) establishes the safety and health policy program for the project. The plan describes the specific responsibilities of all project personnel to ensure the project is conducted with safety as the focus for all project activities;
- Appendix E – Munitions Constituents Sampling and Analysis Plan (SAP). This appendix contains the MC SAP that describes procedures used for the results of MC sampling and analysis, quality assurance (QA) / quality control (QC), laboratory qualification, data acquisition/data reporting, and chain-of-custody when environmental samples are required for the project. One of the key attachments of the SAP is the UFP-QAPP;
- Appendix F – Contractor Forms. This appendix contains all forms referenced throughout this WP for use on the project;
- Appendix G – Geophysical System Verification (GSV) Plan. This appendix provides details on procedures used to evaluate DGM instruments, determine the standard response of selected instruments, evaluate instrument configurations, deployment techniques, and provide operator certification for instrument use;
- Appendix H – Contractor Personnel Qualification and Certification Letter. This appendix contains certification letter and resumes of key personnel performing RI/FS activities for CSLO;
- Appendix I – Technical Project Planning (TPP) Memorandum (on CD only);
- Appendix J – Project Data Quality Objectives and Conceptual Exposure Site Models. This appendix contains the project DQOs and the CSLO conceptual exposure site model (CESM). The CESM is a living document that is updated as new information is obtained;
- Appendix K – Standard Operating Procedures (SOP). This appendix provides details on procedures used for most field activities; and
- Appendix L – Fragmentation Database Worksheets. This appendix provides fragmentation database worksheets for potential MEC items of concern.

This WP outlines the investigation approach that will be used on all MRSs on the project site. Supporting documents, such as site maps, points of contact, project forms and resumes, are included in the appendices. Additionally, stand-alone plans and reports, such as the APP, MC SAP, and GSV Plan, are included as appendices to this WP.

- Under no circumstances will any change to this WP be executed unless specifically approved by both the USACE PM and the Bristol PM. USACE will be responsible for notifying state agencies and stakeholders of any significant changes;
- The Bristol PM will provide a description of the circumstances and factors surrounding the need to change the plan using the Field Change Request (FCR) Form

included in Appendix F, recommend a course of action, and identify the impact the change will have on the project. Initial notifications will be made verbally within 48 hours and followed up within 7 days with the submittal of the FCR Form;

- If the circumstances requiring the change involve safety or quality, the Bristol PM will suspend all work affected by the unforeseen condition or activity until the cause is investigated and approved written procedures are in place; and,
- Approved changes will be briefed to site personnel prior to implementation.

#### **1.4 PROJECT LOCATION**

CSLO is located along Highway 1, approximately 8 miles east of the Pacific Ocean (at Morro Bay) and approximately 5 miles northwest of San Luis Obispo, California, between the cities of San Luis Obispo and Morro Bay on the western slopes of the Santa Lucia Range. CSLO is located in San Luis Obispo County, as shown in Appendix B, Site Location Map. The former CSLO occupied approximately 14,959 acres.

Three MRSs, identified during the Archive Search Report (ASR) and Site Inspection (SI) processes will be investigated during the RI/FS. The CSLO MRSs encompass approximately 2,549 acres (approximately 4 square miles) of rolling hills and canyons. These sites are MRS-01 (formerly Grenade Court, Range #25), MRS-02 (formerly Grenade Court, Range #26) and MRS-05 (formerly a Range Complex). MRS-05 is 2,523 acres, and MRS-01 and MRS-02 combined are 26 acres. The MRS locations are shown in Appendix B, MRS Location Map.

#### **1.5 SITE DESCRIPTION**

The following sections include site background information, such as topography, climate, vegetation, and geology gathered from state and federal resources, as well as observations made during site visits of the area, previous investigations, and the 1992 and 2010 TCRA at CSLO.

##### **1.5.1 Topography**

The CSLO site consists mainly of rolling hills and canyons classified as grassland, wooded grassland, woodland, or brush. A major portion of the site is identified as grassland and is used primarily for agricultural purposes (i.e., grazing). Los Padres National Forest is located at the north-northeastern portion of the site. During the hot and dry summer and fall months, the intermittent areas of brush occurring throughout the site become a critical fire hazard.

Appendix B, Site Topography, shows the varied site terrain. Land use in general supports the agricultural (grazing), recreational, and educational/institutional uses.

### **1.5.2 Vegetation**

Vegetation type communities include central oak woodland, annual grassland, mixed evergreen woodland coastal sage scrub, and central maritime chaparral. The coastal sage scrub vegetation type of California exists along the coast from about San Francisco down through about San Diego and inland as far as Riverside in southern California. Lichens and blue-green algae are important components of the coastal sage scrub plant community. In sandy soils near the coast, these plants stabilize the loose soils and capture nitrogen for the plant community. These plants, along with naturally non-compacted, fluffy soils (created by the plants and microorganisms in cooperation), are indicators of a healthy site (Parsons, 2007).

Under the term oak woodland are three variations observed in the vicinity of CSLO: oak woodlands, where the oaks and pines were fairly close together mixed in with tall and short shrubs, and openings of wildflowers, forbs and few grasses; oak savanna, where the trees are a good distance apart, mostly few to no shrubs, and between is mostly forbs with little grass. The woods were thickets in some places. There are oak forests where the oaks and pines are touching and there are several layers of understory, from tall shrubs to short shrubs to perennial and annual forbs, with a very small amount of grass (USACE, 2007).

### **1.5.3 Climate**

The weather at CSLO is generally pleasant and considered Mediterranean. Within the foothills of the former camp, the winters are somewhat cooler and wetter, and the summers are warmer and drier. Average rainfall of 16 inches generally occurs between November and March. As the clouds move inland from the coastline and rise over the mountains, rainfall totals can average from 30 to 45 inches along the ridge-tops. The wind generally comes in from the west-southwest and blows to the north-northwest (CEMVR, 1994).

#### **1.5.4 Soil**

The underlying bedrock within the CSLO site area is intensely folded, fractured, and faulted. The site is underlain by a mixture of metamorphic, igneous, and sedimentary rocks less than 200 million years old. Scattered throughout the site are areas of fluvial sediments overlaying metamorphosed material known as Franciscan mélangé. These areas are intruded by plugs of volcanic material that comprise a chain of former volcanoes extending from the southwest portion of the site to the coast. Due to its proximity to the tectonic interaction of the North American and Pacific crustal plates, the area is seismically active (CEMVR, 1994).

A large portion of the site consists of rolling hills and mountains with three categories of soils occurring within: alluvial plains and fans; terrace soils; and hill/mountain soils. Occurring mainly adjacent to stream channels are the soils associated with the alluvial plains and fans. Near the main CSLO, the slope is nearly level to moderately sloping and the elevation ranges from 300 to 1,500 feet. The surface layer is coarse sandy loam to shaley loam. The hill/mountain soils are strongly sloping to very steep. The elevation ranges from 600 to 3,400 feet. Soil types are shown in Appendix B, Soil Types.

#### **1.5.5 Site Geology**

CSLO lies among the intermontane basins in the coastal mountains of California. These basins, formed as a result of folding and faulting, are depressions or structural troughs that parallel the coastline. These folds and faults primarily trend northwestward and result from the deformation of older rocks from the intense pressures of colliding continental plates. The rocks underlying the basins and form the surrounding mountains are primarily marine sediments and igneous and metamorphic rocks, all of Mesozoic age but locally include rocks of Cenozoic age (U.S. Geological Survey [USGS], 1995).

The basins are partially filled with unconsolidated and semi-consolidated marine sedimentary rocks deposited during periodic encroachment of the sea and with unconsolidated continental deposits that consists of sedimentary rock and weathered igneous material transported into the basins primarily by mountain streams. These continental deposits and marine sediments are tens of thousands of feet thick in some basins. In most basins, almost all of the permeable

material consists of unconsolidated continental deposits (primarily sand and gravel) (USGS, 1995).

### **1.5.6 Surface water/Groundwater**

The regional direction of groundwater flow in Chorro Valley follows the topography in general. Near Chorro Creek and its tributaries, the direction of flow is generally downstream (Carollo Engineers, 2003).

Both the city of San Luis Obispo and San Luis Obispo County extract groundwater from the San Luis Obispo Valley Groundwater Basin, which underlies the San Luis and Edna Valleys and is bounded on the southwest by the San Luis Range, on the northeast by the Santa Lucia Range, and on all other sides by contact with impermeable Miocene and Franciscan Group rocks. The southeastern part of the valley is drained by tributaries of Pismo and Davenport Creeks. The northwestern part of the valley is drained by San Luis Obispo, Stenner, and Prefumo Creeks (State of California, 2004).

Groundwater is found in Pleistocene to Holocene age terrestrial deposits. Holocene age alluvium consists of unconsolidated gravel, sand, silt, and clay of fluvial origin, reaching a maximum thickness of approximately 50 feet. In the area of the basin that underlies the San Luis Obispo Creek watershed, the valley floor is covered with this alluvium and is the main source of groundwater. Groundwater wells in this region generally yield from 20 to 300 gallons per minute (gpm). The Pleistocene age alluvium terrace deposits are as thick as 50 feet; wells completed in these deposits yield about 20 gpm (State of California, 2004). The California Regional Water Quality Control Board reports that the depths of the municipal/irrigation wells range to 210 feet below ground surface (bgs) and average of 90 feet bgs. The depths of the domestic wells are unknown (State of California, 2004).

The Edna fault is the main geologic structure in the basin, but it does not appear to affect the quality or movement of groundwater. Basin recharge is from applied irrigation water, stream-flow, and infiltration of precipitation on the valley (State of California, 2004).

The CSLO site is located in the Mesozoic Franciscan Formation, which includes ultramafic rocks not generally recognized as water-bearing formations. The main drainage at the site is

Chorro Creek. Surface drainage is generally to the west. The Chorro Creek and its tributaries are intermittent and flow only when precipitation is sufficient. The Los Osos, Chorro, Walters, Chumash, Pennington and Morro Creeks provide drainage to the Los Osos Valley drainage basin, where water bearing formations are found. Groundwater in the Los Osos Valley is found at depths from 10 to 50 feet bgs. The water bearing zone is estimated to extend to a depth of 200 feet bgs and is drained by Chorro Creek and Los Osos Creek. Sediment debris is transported by these creeks into Morro Bay during hydrologic events (CEMVR, 1994).

The Surface Water Map is included in Appendix B.

## **1.6 SITE HISTORY**

CSLO was established in 1928 by the state of California as a National Guard Camp. Identified at that time as Camp Merriam, it originally consisted of 5,800 acres. Additional lands were added in the early 1940s until the total acreage reached 14,959. During World War II, CSLO was used by the U.S. Army from 1943 to 1946 for infantry division training. Uses of the camp included artillery, small arms ranges, mortar, rocket, and grenade practice ranges. According to the Preliminary Historical Records Review (HRR), a total of 27 ranges and 13 training areas were located on CSLO during World War II.

Following the end of World War II, a small portion of the former camp land was returned to its former private owners. The U.S. Army was making arrangements to relinquish the rest of CSLO to the state of California and other government agencies when the conflict in Korea started in 1950. The camp was reactivated at that time.

The U.S. Army used the former camp during the Korean War from 1951 through 1953 where the Southwest Signal Center was established for the purpose of signal corps training. The HRR identified 18 ranges and 16 training areas present at CSLO during the Korean War. A limited number of these ranges and training areas were used previously during World War II. Following the Korean War, the camp was maintained in inactive status until it was relinquished by the U.S. Army in the 1960s and 1970s. Approximately 4,685 acres were relinquished to the General Services Administration (GSA) in 1965. GSA then transferred the property to other agencies and individuals beginning in the late 1960s through the 1980s;

most of which was transferred for educational purposes (e.g., California Polytechnic State University (Cal Poly) and Cuesta College, etc.). A large portion of CSLO (the original 5,880 acres) has been retained by the California National Guard (CNG) and is not part of the FUDS program.

### **1.7 CURRENT AND PROJECTED LAND USE**

The area is served by a state highway (State Highway 1 that intersects the site) and numerous secondary roads. Occupied structures located within the MRSs include support facilities associated with California Department of Fish and Game (CDFG), Cal Poly Agricultural School, and Cuesta College. The primary range complex (MRS-05) is located north of Highway 1 and west of El Chorro Regional Park. The remaining MRSs (MRS-01 and MRS-02) are located in the general vicinity and parallel to and north of State Highway 1 and occupy areas used as recreational facilities within El Chorro Regional Park. Further development is planned in the Botanical Gardens located adjacent to MRS-01 and MRS-02.

The CSLO site is currently owned by several different entities (with one exception, all are federal, state, or local government owners) and current land use is primarily for educational and agricultural purposes. The majority of the site consists of mountains and canyons. The FUDS portion of CSLO has been redeveloped and used by the following organizations:

- Cal Poly for use by its agricultural school;
- San Luis Obispo Public School District;
- El Chorro Regional Park of San Luis Obispo County; and
- CDFG, used primarily for educational purposes and recreation firearms range.

According to David Ragsdale and Mike Hall, both from Cal Poly, because portions of MRS-04 are currently a public shooting range, there can be as many as 100 visitors daily to the site (Parsons, 2007). The range also hosts 500 to 600 people at special events that include the Annual John Wayne Shoot-Out and the National Championships. Portions of MRS-05 (primarily the 3.5" Rocket Range #15) are used for hosting campers and recreational vehicles during these special events that occur five to seven times a year; Mr. Ragsdale considered that there are probably 100 to 250 campers for each of these events.

The land use under these various government entities would not have contributed MC or MEC-related contamination, although the current recreational firearms range operated by CDFG is in the general vicinity of MRS-04 and the area of potential concern Rifle Grenade Range. According to the ASR, the military also used the range for small arms training. Future land use is anticipated to remain the same and development for similar purposes will likely continue. There is a potential for residential development in the area, especially with the planned water project (Nacimiento Water Project), currently in the development stage to deliver supplemental water from Lake Nacimiento to San Luis Obispo County, including the city of San Luis Obispo (Parsons, 2007).

Access to the site is restricted and inaccessible to the general public in some areas, while other areas are unrestricted and accessible by foot as well as by several secondary roads including, but not limited to, Gilardi Road, Pennington Creek Road, Watson Drive, Dairy Creek Road, and Highway 1 (Cabrillo Highway). Warning signs regarding the potential presence of ordnance are posted in a few areas just outside of El Chorro Regional Park (north of the park and associated with fenced areas).

Potential ecological receptors are documented in Section 6, Environmental Protection Plan. Four special status listed taxa are present or may be present on the MRS-05 project site, which include those found in Table 6-4. Three of the species are present or may be present on the site, including the Chorro Creek bog thistle (*Cirsium fontinale*), California red-legged frog (*Rana draytonii*), and the southern steelhead (*Oncorhynchus mykiss*).

## **1.8 PREVIOUS INVESTIGATION OF THE SITE**

MEC activities associated with the former CSLO include small arms training and qualification firing at multiple small arms ranges of various types. The facility also supported hand grenade ranges, rifle grenade ranges, and antitank rocket ranges in addition to several courses and ranges that authorized the use of multiple types of weapons. The original 27 World War II era ranges and 13 training areas were occasionally used for combined arms live fire maneuvers (Historical Range Map, Appendix B). An historical document review for the CSLO revealed the following investigations have been conducted to date:

- Preliminary Assessments (PA) in 1986 and 1993;

- A TCRA at El Chorro Regional Park in 1992;
- An ASR in 1994;
- A supplement to the ASR in 2004;
- A Draft Preliminary HRR in 2006;
- A USACE Site Investigation in 2007;
- An Environmental Security Technology Certification Program (ESTCP) Wide Area Assessment (WAA) Technical Validation in 2008;
- An ESTCP WAA in 2009; and
- A TCRA in 2010 on a portion of MRS-05.

A brief summary of previous investigations is included in the following sections.

### **1.8.1 Preliminary Assessments**

The USACE, Los Angeles District, prepared multiple PAs in 1986 for individual portions of the CSLO. The individual PAs were superseded by a more comprehensive PA that included the entire CSLO acreage prepared in 1993 by USACE, Los Angeles District. The 1993 PA was the impetus for the 1994 ASR.

The 1993 PA determined that the site was used for various military activities (e.g., artillery and small arms training, including mortar, rocket, and grenade ranges) that included MEC and MC and could constitute a public safety hazard.

### **1.8.2 Time-Critical Removal Action, 1992**

USACE, Huntsville Division, completed a UXO removal project at the former CSLO, in the current El Chorro Regional Park. The site was composed of four distinct areas, totaling approximately 95 acres. Three of the areas were suspected impact zones for field artillery and small arms practice. The remaining area was identified as a hand grenade practice range (adjacent to and/or overlapping the current MRS-01/MRS-02 sites). Of eight UXO items discovered during the TCRA (six Mk II fragmentation grenades (live), one Mk II grenade body (practice), and one 40 mm anti-aircraft projectile), seven were detonated in place and the remaining item (practice grenade) was removed for disposal to the closest Defense Reutilization and Marketing Office.

### 1.8.3 Archive Search Report

The ASR was completed by USACE, Rock Island District, in September 1994 (CEMVR, 1994). The ASR presented its findings of an historical records search and SI for ordnance and explosive waste at CSLO that included confirmed ordnance presence based on available records, as well as an evaluation of potential ordnance contamination based on site ordnance components and site information. The ASR reported that 9,159 acres of the CSLO were eligible for the DERP-FUDS. The CNG was active (and remains so) on 5,800 acres of the former camp and for that reason, those 5,800 acres were ineligible for DERP-FUDS. Included in Appendix E (E14) of the ASR is a 1992 reference to an UXO removal action (RA) to be completed by IT Corporation, under contract to USACE. There is no record of this RA being completed at El Chorro Regional Park.

The ASR Supplement was completed by USACE, Rock Island District, in 2004 (CEMVR, 2004) and summarized the information from the 1994 ASR and other associated investigations. The ASR Supplement provided a summary of the retained MRSs, the acreage for each MRS, and other pertinent information. The ASR Supplement provided a breakdown for each MRS with the standard range configuration based on the use of each MRS. The MRSs identified in the ASR Supplement for CSLO, their suspected acreage, and types of munitions include:

- **MRS-01 – Grenade Court, Range #25** – 10 acres; MK II, Hand Grenade, Frag; M21, Practice Hand Grenade; M9A1, Rifle Grenade, Anti-Tank;
- **MRS-02 - Grenade Court, Range #26** – 16 acres; MK II, Hand Grenade, Frag; M21, Practice Hand Grenade; M9A1, Rifle Grenade, Anti-Tank;
- **MRS-03 - Grenade Court, Range #27** – 24 acres; M21, Practice Hand Grenade; M62, Practice Hand Grenade;
- **MRS-04 - Grenade Court, Range #17** – 2 acres; MK II, Hand Grenade, Frag; M21, Practice Hand Grenade; M9A1, Rifle Grenade, Anti-Tank; and
- **MRS-05 – Range Complex**; 2049 acres; Small Arms, General; M28, Rocket, HEAT, 3.5-inch.

### 1.8.4 Draft Preliminary Historical Records Review

In July 2006, a Draft Preliminary HRR was completed for CSLO and Baywood Park Training Area by USACE, St. Louis District, for the USACE, Los Angeles District (CEMVS, 2006).

The HRR supplements the original ASRs and compiles data obtained through additional historical research. The HRR was primarily focused on identifying historical activities that might potentially generate the presence of hazardous substances with an emphasis on establishing the types, quantities, and areas of MEC and chemical warfare activities. The report concentrated on verifying findings of previous studies and supplementing them, if possible, with particular emphasis on filling “data gaps.” As noted in the Draft Preliminary HRR, Section 9.4, “The investigation does not represent a comprehensive research effort regarding the subject sites as it was limited by time and funds. Research was essentially limited to a single repository: National Archives and Records Administration at College Park, Maryland (NARA-CP) and only limited records were reviewed there. Research efforts at NARA-CP focused on division training records for the divisions using CSLO during World War II and Signal Corps school records for the signal school located on the installation during the Korean War.” The report notes that the investigation team only reviewed roughly a quarter to a third of the research of available records expected to contain information on CSLO and Baywood Park Training Area.

#### **1.8.5 Site Investigation in 2007**

The SI was performed to evaluate evidence for the presence of MEC and MC at CSLO. The SI, conducted in 2007, was to determine whether MRSs identified within CSLO warranted subsequent characterization as part of a RI/FS, NDAI, or a TCRA. To accomplish this objective, qualitative reconnaissance and MC sampling were performed. Five MRSs were initially developed, based on target information provided in the “Archive Search Report findings Former Camp San Luis Obispo, CA, FUDS Property Number J09CA203105, September 1994” and the “Preliminary Historical Records Review Camp San Luis Obispo and Baywood Park Training Area, San Luis Obispo, CA FUDS Property Numbers J09CA203105 and J09CA203106, June 2007.” Based on the result of the ASR, the HRR, and the SI, three MRSs (MRS-01, MRS-02, and MRS-05) were identified for further investigation and are included in this RI/FS. The remaining MRSs (MRS-03 and MRS-04) were recommended for NDAI.

The three MRSs included in this RI/FS are shown in Appendix B, and summarized in the following sections.

### **1.8.5.1 MRS-01 and MRS-02 – Grenade Ranges**

Grenade Range #25 and #26 consist of approximately 26 combined acres. The historical records do not distinguish between these MRSs, and for that reason, they are described together in this WP. The MRSs were 5-acre parcels located adjacent to one another, and with the danger zone applied to each range, they now overlap. The acreage assigned to MRS-01, including the danger zone, is 10 acres; MRS-02, also including the danger zone, is 16 acres. The Grenade Courts are located in the far southeast portion of the facility, directly north of State Highway 1. The ASR reported two 5-acre grenade courts (MRS-01 and MRS-02) located on property owned by San Luis Obispo County (the El Chorro Park). Reportedly, this area was swept for military munitions by the USACE (late 1980s) where hand grenade fragments and expended fuzes were found. The ASR SI team found one expended hand grenade fuze north of the baseball fields. The following types of munitions are suspected or known to have been used in MRS-01 and MRS-02:

- Grenade, Rifle;
- Grenade, Hand Practice; and,
- Grenade, Hand.

### **1.8.5.2 MRS-05 – Range Complex**

The Range Complex consists of 2,523 acres situated north of State Highway 1 and spanning from the western boundary to the eastern boundary, with all ranges facing north to northeast. Multiple use ranges associated with this MRS include, but are not limited to:

- 3.5” Rocket Range, Range #15; 410 acres;
- Known Distance 30 Cal, Range #14; 709 acres;
- Rifle Range, Range #13; 407 acres;
- Rifle Range, Range #12; 711 acres;
- Squad Defense Range, Range #11; 434 acres;
- Field Target M-1 Range, Range #10; 440 acres; and,
- Close Combat Range, Range #9; 474 acres.

The following types of munitions are suspected or known to have been used in MRS-05:

- Projectile, 105-mm High Explosive;
- Projectile, 105-mm Smoke;
- Projectile, 75-mm Shrapnel;
- Projectile, 37-mm High Explosive;
- Rocket, 5-inch High Explosive;
- Rocket, 2.36-inch High Explosive Anti-Tank;
- Rocket, 2.36-inch Practice;
- Mortar, 81-mm High Explosive;
- Mortar, 81-mm White Phosphorous; and,
- Mortar, 60-mm High Explosive.

#### **1.8.6 ESTCP Wide Area Assessment**

During an ESTCP UXO classification pilot study in August 2009, ESTCP identified over 2,500 anomalies and destroyed by blow-in-place (BIP) 26 UXO items at a 10-acre test area within MRS-05. UXO that were found included 18 60-mm mortars, 4 81-mm mortars, a 37-mm projectile, a 5-inch rocket warhead, a 2.36-inch rocket, and a 3-inch stokes mortar. Four of the UXO items were found on the surface, while the remainder was found in the shallow subsurface.

#### **1.8.7 Time-Critical Removal Action, 2010**

A TCRA was conducted during the autumn of 2010 on approximately 170 acres of MRS-05. The TCRA consisted of detector aided visual surface sweeps (using 200 foot by 200 foot grids) to locate and remove munitions debris (MD) and locate UXO and MEC items. Approximately 5,500 pounds of MD were inspected, certified clear of hazardous/explosives material, and removed from the site. Twenty-three UXO/MEC items were located and disposed of on-site during the TCRA field activities. An additional task during the TCRA was to place nine warning signs indicating potential UXO hazards in the area. The signs were placed at locations identified by Cal Poly and San Luis Obispo County (Figure 2, ERRG, 2011).

The following table summarizes the MEC discovered and detonated on-site during the TCRA field activities:

**Table 1-4 2010 TCRA, MEC ITEMS**

MEC Item Identification	Quantity	Condition
M-43, 81 mm HE Mortar w/M525 PD Fuze	5	Armed
3-inch Stokes Mortar (No Fuze)	1	Unfuzed
2.36" Rocket WH	1	Unfuzed
M-49 A2, 60mm HE Mortar w/M525 PD Fuze	10	Armed
M-19 A1 WP Rifle Grenade w/M-9 A1 Fuze	1	Armed
M6A1, 2,36" HEAT Rocket	1	Armed
M-49 A2, 60 mm HE Mortar / Unfuzed	4	Unfuzed

MC samples were collected from six grids during the demolition process. Samples were collected before and after detonation. Fifteen samples were collected as part of the investigation and analyzed by TestAmerica, Inc. Analytical results for all soil samples were below stated project goals and did not indicate any MC left behind after the detonation activities.

### **1.8.8 Non-Investigation Related Munitions Finds**

Local property owners such as Cal Poly have discovered military munitions in the past during routine facility maintenance activities. The following sections summarize some of the non-investigation related munitions finds. Some of these finds are incorporated into the Previous Investigations figure in Appendix B.

#### **1.8.8.1 2006 and 2007 Informal Department of Toxic Substances Control Site Visits**

The Department of Toxic Substances Control (DTSC) conducted an informal site visits at CSLO in 2006 and 2007. During the site visits, the team encountered the following items and recorded their coordinates. Some of these finds are incorporated into the Previous Investigations figure in Appendix B.

- 3" rocket debris;
- Rifle grenade debris;

- 60mm tail fin;
- 81mm white phosphorous mortar, intact;
- 81mm high explosive mortar, intact;
- 4.2” mortar debris; and
- Various berms, bunkers, and crater features.

The San Luis Obispo County Sheriff was dispatched to dispose of the two intact mortars.

### **1.8.8.2 Cal Poly Property MEC Discoveries**

The ASR identified and reported numerous accounts of MEC and MD observed on property owned by Cal Poly (in MRS-05, etc.) over the years. Munitions that were identified include bazooka rounds, white phosphorus items, hand grenades, an 81 mm round, and an artillery round. These items were gathered over the years at Cal Poly and stored in a farm building.

### **1.8.8.3 Additional Property MEC Discoveries**

The ASR identified and reported similar discoveries on other local properties. A grenade was found on San Luis Obispo County school property, and artillery items were discovered on the Vollmer property. One mortar round was found in 1983 on the Cuesta College property, and at the time, the Fort Ord Explosive Ordnance Disposal (EOD) Team was called out to perform an ordnance sweep, which had negative results.

As reported in the ASR, explosive ordnance has been found at the El Chorro Regional Park. An impact area was reported on the National Forest System lands. Reportedly, a phosphorus grenade was found on the County schools site in 1986 and a mortar was found on the adjacent property the same year. Research of San Luis Obispo County Bomb Squad responses for 1986 revealed a removal of a hand grenade from San Luis Obispo County School property, but no 1986 response record was shown for a mortar round. Explosive ordnance has been found on Cal Poly University property. Some of these are as follows:

- Bazooka rounds;
- White phosphorus items;
- Hand grenades;
- An 81mm round; and
- An artillery round.

## **1.9 SUMMARY OF MEC HAZARD**

It is likely that MEC may be encountered during this project. MEC has been discovered in the MRS during previous investigations. It is anticipated that the MEC item presenting the greatest fragmentation distance is the M1 105mm Projectile.

The MEC Hazard Assessment (MEC HA) and the MRS Prioritization Protocol (MRSPP) will be used to address MEC hazards at the CSLO MRS.

### **1.9.1 Munitions and Explosives of Concern Hazard Assessment**

In October 2008, the Technical Working Group for Hazard Assessment, which includes representatives from the DoD, Department of the Interior, USEPA, and state regulatory officials, produced the technical reference document *Interim Munitions and Explosives of Concern Hazard Assessment Methodology*. The MEC HA was designed to be used as the CERCLA HA methodology for MRS where there is an explosive hazard from the known or suspected presence of MEC. The MEC HA is structured around three components of a potential explosive hazard incident:

- Severity, which are the potential consequences (e.g., death, severe injury, property damage, etc.) of a MEC item functioning;
- Accessibility, which is the likelihood that a receptor will be able to come in contact with a MEC item; and
- Sensitivity, which is the likelihood that a receptor will be able to interact with a MEC item such that it will detonate.

Each of these components is assessed in the MEC HA by input factors. The sum of the input factor scores falls within one of four defined ranges, called hazard levels. Each of the four hazard levels reflects site attributes that describe groups of site conditions ranging from highest to lowest hazards. The MEC HA hazards levels are:

- Hazard Level 1 – Sites with the highest potential explosive hazard. There may be instances where there is an imminent threat to human health from MEC.

- Hazard Level 2 – A site with surface MEC or intrusive activities that would encounter MEC in the subsurface and the site has moderate or greater accessibility by the public.
- Hazard Level 3 – A site that would be considered safe for the current land use without further munitions responses, although not necessarily suitable for reasonable anticipated future use. Level 3 areas generally have restricted access and low number of contact hours and typically MEC only in the subsurface.
- Hazard Level 4 – A site compatible with current and determined or reasonably anticipated future use. Level 4 typically have had a MEC cleanup performed.

The MEC HA does not directly address environmental or ecological concerns that might be associated with MEC, nor does it address the criteria of cost. The MEC HA guidance document includes an Automated Excel Workbook, which aids in the development of site scoring through standardized input and formulas. The automated workbook was used to provide the MEC HA score. Results of the HA scoring summary are provided in a summary table.

### **1.9.2 Munitions Response Sites Prioritization Protocol**

MRSP ranking will be completed for the CSLO MRSs based on information obtained during the SI and RI field sampling/survey programs. The MRSP rankings are used by the DoD to prioritize sites for further actions. In general, the lower the numerical ranking, the higher priority the site is given. In compliance with 32 CFR § 179.5, stakeholder input will be considered before finalizing the MRSP score(s) for the MRSs included in this RI. All MRSP worksheets will be included and a summary table will be provided of the MRSP priority rankings for the MRSs investigated at CSLO.

### **1.9.3 Nature of Potential Threats**

The primary safety hazards associated with MEC include blast pressure, fragmentation hazards, and thermal hazards as follows:

- Blast pressure is the instantaneous pressure increase resulting from a violent release of energy from a detonation in a gaseous medium (e.g., air);

- Fragmentation hazards result from the shattering of an explosive container or from the secondary fragmentation of items in proximity to an explosion; and,
- Thermal hazards are those resulting from heat and flame caused deflagration (a process of subsonic combustion that usually propagates through thermal conductivity) or detonation.

The primary MEC hazard associated with this site continues to be the unearthing of munitions through natural forces. Given the nature of the military munitions used during activities at CSLO, fragmentation and thermal hazards are the most likely impacts and have the potential to cause serious injury or death.

## **2.0 TECHNICAL MANAGEMENT PLAN**

### **2.1 PROJECT OBJECTIVES**

The purpose of this RI/FS is to address MEC and MC, using comprehensive sampling methodologies involving surface visual, geophysical, and intrusive investigations to collect data to locate and adequately characterize target areas associated with three MRS and allow for the evaluation of (and recommendation of) Remedial Alternatives. This information is to be used to prepare and obtain stakeholder concurrence on a DD.

### **2.2 PROJECT ORGANIZATION**

Bristol is responsible for conducting the RI/FS in compliance with all applicable policies and guidelines. USACE is responsible for providing contract oversight and QA. Bristol will conduct the data collection necessary to formulate recommendations for presentation in the RI/FS report. Prior to finalizing the report, Bristol will incorporate comments received from USACE, regulatory agencies (DTSC), stakeholders, and the public.

Bristol and its subcontractor, InDepth Corporation (InDepth) will provide the qualified personnel required to support all activities of the RI/FS. These will include, but not be limited to: UXO-qualified personnel to provide MEC safety; field supervision, data processing crews, biologists, archeologists, MEC intrusive investigation teams, geophysical investigation teams, soil sampling crews, and surveyors. The disposal of MEC found on the site during operations will be performed by a UXO-qualified team.

The following sections provide a brief description of the overall project team and responsibilities assumed by Bristol. Figure 2-1 presents a project organization chart that illustrates how specific individuals and/or organizations will interact with each other throughout the project.

#### **2.2.1 U.S. Army Corps of Engineers, Los Angeles District**

USACE, Los Angeles District, is the sponsor of the former CSLO and has final approval over the RI/FS. The following consultants are under contract to USACE during the RI/FS.

### **2.2.2 Bristol Environmental Remediation Services, LLC**

Bristol has been contracted to develop and perform the RI/FS for CSLO. The roles and responsibilities of Bristol management for this RI/FS are discussed in the following paragraphs. Prior to and during field investigations, Bristol will be responsible for the following:

- Development of this RI/FS WP and assurance that all work performed is in compliance with this approved RI/FS WP and Scope of Work;
- All aspects of the field investigations and evaluation, including MC soil sampling;
- Administration and management of all aspects of the RI/FS field investigation, along with analysis of the field data collected; and
- Generation of a RI/FS report that will evaluate the potential MEC hazard, evaluate remedial alternatives, and recommend remedial actions.

### **2.2.3 InDepth Corporation**

InDepth has been subcontracted by Bristol to assist in the development of the RI/FS for CSLO. The roles and responsibilities of InDepth for this RI/FS are discussed in the following paragraphs. Prior to and during field investigations, InDepth will be responsible for the following:

- Developing a project website for storage and retrieval of project documents;
- Assisting with the TPP Process, including attendance at TPP meetings;
- Developing and maintaining project GIS (GeoDatabase);
- Assisting with the development of Chapter 3 of this RI WP and assuring that all work performed within their scope is in compliance with this approved RI/FS WP and the project PWS;
- Providing field geophysicists and geophysics technicians necessary to set up and perform GSV procedures, perform DGM operations, post process DGM data for target re-acquisition, assist in target re-acquisition, and perform DGM data management; and
- Assisting within the preparation of all reports and documents.

## **2.3 PROJECT PERSONNEL**

Bristol's project management will consist of the PM, the Program Manager, the Contracts and/or Procurement Manager, Corporate Safety and Health Professional, and QC Manager. Site project personnel include the Senior UXO Supervisor (SUXOS), the UXO QC Officer (UXOQC), the UXO Safety Officer (UXOSO), Project Scientist, and the UXO technicians.

Project administration consists of administrative staff, who will be responsible for all of the administrative requirements pertaining to the project.

### **2.3.1 Project Manager**

The PM, who will be responsible for the day-to-day management of project activities, will interact with Bristol personnel assigned to the project through a variety of means, including meetings, electronic mail (e-mail), formal correspondence, and telephone conversations. Staff meetings were conducted at the beginning of the project to organize the project team and familiarize team members with the project scope and staff assignments. The PM will hold weekly meetings, or as required, to monitor staff performance, resolve problems, and verify that contract requirements are being met to the quality expectations of USACE.

The PM will be responsible for monitoring the project budget using Bristol's cost accounting system. Actual expenditures such as labor, other direct costs, and subcontractor costs are entered into Bristol's computer accounting system on a weekly basis. Printouts will be provided to the PM; these printouts show actual expenditures with weekly and cumulative totals. The PM will review this information and interact with the project team to keep performance on track. The PM will also inform the Program Manager on a weekly basis, or as required, of project performance, schedule, and budget. The PM will also maintain close communication with USACE to assess client satisfaction with Bristol's performance on this Contract.

### **2.3.2 Program Manager**

The Program Manager will be responsible for monitoring the overall progress of the contract, reviewing monthly progress reports, and ensuring that Bristol's resources are available to the PM. The Program Manager will also maintain close communication with USACE to assess client satisfaction with Bristol's performance on this Contract.

### **2.3.3 Contracts/Procurement Manager**

The Contracts/Procurement Manager will assist the PM and the Program Manager by coordinating expenditure documentation for the monthly progress reports, and USACE contracts and invoicing.

### **2.3.4 Quality Control Manager**

The QC Manager will be responsible for reviewing and updating the QCP, as needed and verifying compliance with the QCP. Compliance will be verified through audits (using the Standard QC Report Form in Appendix F) of the project activities by the QC Manager, who has the authority to require corrective actions and stop work (work stoppage will be coordinated with USACE), as needed, to ensure compliance with the QCP. Completed QC Report Forms will be forwarded to USACE.

### **2.3.5 Health and Safety Manager**

The Health and Safety Manager is responsible for review and coordination of the APP and addenda, as required. Other Health and Safety Manager duties include Program Administration, Safety Audits, determination of personal protective equipment (PPE) requirements, and any other responsibilities identified in the APP.

### **2.3.6 Senior UXO Supervisor**

The SUXOS meets all applicable requirements of the contract (W912PL-09-D-005), DoD Explosive Safety Board (DDESB) Technical Paper 18, and will be approved for the project by USACE. The SUXOS will ensure that field personnel conduct operations at the site in accordance with the WP and in a systematic manner using proven operating methods and techniques. All activities will be conducted under the direction, supervision, and observation of the SUXOS (or a UXO Supervisor during the UXO escort activities). Additional responsibilities of the SUXOS include, but are not limited to:

- Coordinating all on-site field activities with the PM, USACE, and other personnel at the site to preclude impacts to productivity and ensure compliance with the WP and APP;
- Implementing changes as directed by the PM;
- Tracking equipment operation, with hours worked, idle, or down for repair;
- Maintaining an up-to-date, informative, and complete daily project log describing work performed each day, including location, description, and worker(s); site conditions; visitors; or any other pertinent project occurrences ;

- Reviewing deliverables/submittals with contract reference, by whom, and action taken;
- Determining ingress/egress routes to work areas;
- Ensuring that daily/weekly deliverables are prepared and delivered on schedule;
- Checking and accepting materials received at the site with statement as to acceptability, storage, and reference to contract requirements;
- Managing the on-site manpower and equipment necessary to safely conduct the tasks associated with the field investigation;
- Stopping work, as required, to maintain personnel and environmental health and safety;
- Coordinating on-site field activities (e.g., geophysical mapping and intrusive investigations) to preclude impacts to productivity and ensure compliance with the APP;
- Ensuring that site operations are conducted in accordance with all relevant safety and health specifications, regulations, and standards;
- Certifying Material Potentially Presenting an Explosive Hazard (MPPEH) and munitions/range debris as ready for turn-in or disposal;
- Performing a final inspection of the MD and certifying it to be free of any explosive hazard;
- Authorizing initiation of demolition operations; and
- Authorizing the resumption of site operations upon completion of demolition and verification/clearance of residual hazards.

### **2.3.7 UXO Quality Control Officer**

The UXOQC meets all applicable requirements of the contract (W912PL-09-D-005) and DDESB TP18, and will be approved for the project by USACE. The UXOQC is responsible for implementing and enforcing the QCP. Additional responsibilities of the UXOQC include, but are not limited to:

- Ensuring MEC/MPPEH/MD anomaly sources have been completely removed from

all intrusive excavations;

- Conducting QC inspections of all MEC- and explosives-related operations;
- Verifying appropriate personnel are being used during all field investigation activities;
- Conducting examination of the quality of workmanship;
- Maintaining all inspection and surveillance documentation (e.g., QC reports, equipment standardization results and equipment maintenance results, nonconformance and corrective action documents);
- Performing and documenting daily inspections/surveillances of job site activities. Appropriate technical assistance will be provided to perform the inspections / surveillances, as necessary, for the specific field investigation activities being performed; and
- Verifying all required equipment calibration has been performed and that inspection and standardization results comply with contract requirements and the WP.

### **2.3.8 UXO Safety Officer**

The UXOSO meets all applicable requirements of the contract (W912PL-09-D-005) and DDESB TP18, and will be approved for the project by USACE. The UXOSO is responsible for implementing and enforcing the safety and health requirements listed in the APP and any addenda. Additional responsibilities of the UXOSO include, but are not limited to:

- Analyzing MEC and explosives operational risks, hazards, and safety requirements;
- Conducting the UXO safety portion of any visitor orientation;
- Conducting and documenting daily safety inspections and weekly safety audits;
- Developing and implementing corrective action plans to eliminate or mitigate hazards;
- Monitoring compliance with the safety measures contained in the APP and associated documents during disposal operations;
- Ensuring the proper use of PPE in accordance with the requirements of the APP;
- Establishing and ensuring compliance with site-specific safety requirements;
- Investigating and documenting injuries, illnesses, accidents, incidents, and near misses;

- Verifying that the area around the operating site is clear of all nonessential personnel and that other UXO Supervisors have been notified prior to the start of disposal activities;
- Providing the UXO safety portion of training sessions or briefings; and
- Stopping work if health and/or safety jeopardized or compromised.

### **2.3.9 Geophysical Manager**

A geophysicist whose qualifications meet those specified in USACE requirements will perform the geophysical investigation. Geophysical field investigations will be under the direction of an InDepth Senior Geophysicist with at least 15 years of field experience in designing / conducting geophysical surveys and at least 5 years of specialized experience in the detection and mapping of subsurface MEC. Duties will include but are not limited to:

- Overseeing and monitoring the entire geophysical effort, including collection, data processing, and interpretation of the geophysical data;
- Having overall responsibility for the design, implementation, and management of the geophysical investigations tasked in this WP, and will be the project geophysicist of record;
- Being present to verify the validity of the measurement methods, data consistency, and reproducibility;
- Monitoring data collection, daily logs, and field maps and comparing MEC investigation (i.e., excavation) findings with mapped geophysical anomalies to identify any anomaly locations that require further exploration;
- Reviewing results of daily QC checks and checking raw and processed data for quality issues; and
- Reviewing anomaly lists and add or remove selections based on manual review of targets before submitting as dig lists.

### **2.3.10 Field Geophysicists**

Geophysical field personnel will have documented training on the equipment to be used and possess the experience appropriate to their assigned responsibilities.

### **2.3.11 Project Scientist**

Environmental field investigations will be conducted under the direction of a Bristol Environmental Scientist with at least 10 years of field experience in designing / conducting environmental sampling plans and training in the performance of environmental sampling on surface soils and groundwater. Duties will include but are not limited to:

- Performing the environmental sampling effort, including sample collection, data analysis, and interpretation of the sampling data;
- Having overall responsibility for the design, implementation, and management of the MC sampling investigation tasked in this WP; and,
- Monitoring geophysical data collection and reacquisition activities for modification of environmental sampling plan based on field MEC findings and identifying any anomaly locations that require further exploration.

### **2.3.12 GIS Manager**

The GIS Manager will be responsible for the management and presentation of geophysical target and field investigation data. Specific duties include:

- Managing day-to-day GIS project activities, staff, and budget;
- Coordinating project GIS needs with the Program Manager, SUXOS, Project Geophysicist, and other project staff as necessary;
- Coordinating regularly with the USACE GIS Manager and other USACE personnel as required; and
- Overseeing the Database Manager and providing high-level oversight of the development of the database users, structure, and applications.

### **2.3.13 UXO Technician III**

The UXO Technician III (UXO III) supervises a UXO team. The UXO III meets all applicable requirements of the contract (W912PL-09-D-005) and DDESB TP18, and will be approved for the project by USACE. This individual will be a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Ground, Maryland; U.S. Naval EOD School, Indian Head, Maryland; or the U.S. Naval School, Eglin AFB, Florida. This individual must be qualified to perform all the functions for the following positions: UXO Sweep Personnel,

UXO Technician I, and UXO Escort. The UXO Technician III will have at least 8 years combined active duty military EOD and contractor UXO experience.

### **2.3.14 UXO Technician II**

The UXO II meets all applicable requirements of the contract (W912PL-09-D-005) and DDESB TP18, and will be approved for the project by USACE. The UXO Technician II will be a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Grounds, Maryland; the U.S. Naval EOD School, Indian Head, Maryland; or the U.S. Naval School, Eglin AFB, Florida. This individual must be qualified to perform all the functions for the following positions: UXO Sweep Personnel, UXO Technician I, and UXO Escort. The UXO Technician II may be a UXO Technician I with at least 5 years combined active duty military EOD and contractor UXO experience.

## **2.4 PROJECT COMMUNICATIONS AND REPORTING**

To ensure that the work is consistent with the objectives of the RI/FS, Bristol will use the following guidelines in managing all project activity, and in communicating and reporting project status:

- All work will be planned and budgeted to support a hierarchy of schedules based on key project events;
- Project work will not be performed until it has been properly planned and approved. In cases where immediate performance of work is required to support the contract schedule, respond to USACE direction, or otherwise serve some critical purpose, the detailed planning and approval of the work will be agreed to by Bristol and USACE;
- Cost and schedule status will be evaluated monthly to generate performance data and to provide integrated cost/schedule analysis; and
- Bristol and subcontract personnel assigned to the project will have proven capabilities within their area of technical expertise, will be available for the duration of the contract, and will have previous experience on similar types of investigations and field projects.

As part of contract management, Bristol will prepare and submit weekly field progress reports that describe the status of work that has been performed since the previous weekly report, work currently under way, and work anticipated to be conducted. The report will determine if

current work is on schedule. If the work is not on schedule, Bristol will determine what actions need to be taken in order to get back on schedule. Reports will be posted on the CSLO website to ensure stakeholders are kept updated on the project progress.

Bristol will maintain a record of telephone conversations, e-mails, and written correspondence affecting the decisions relating to the performance of this contract.

## **2.5 PROJECT DELIVERABLES**

A table of project deliverables may be found on Worksheet #16 of the attached UFP-QAPP.

## **2.6 PROJECT SCHEDULE**

Field Project Tracking (schedule) will be performed with MS Project software. A summary of the proposed project schedule may be found on Worksheet #16 of the attached UFP-QAPP. The proposed project schedule for CSLO RI/FS activities is presented in Figure 2-2 (Appendix B). As changes to the schedule occur, it will be updated and distributed to the USACE PM, Technical Lead, and on-site QAs. Copies will also be attached to the weekly reports as they are updated.

## **2.7 PERIODIC REPORTING**

Weekly field reports will be submitted when field activities are occurring and will contain the information required in DID MR-085. A template of the weekly field report document is included in Appendix F.

## **2.8 PROJECT COMMUNITY RELATIONS SUPPORT**

Bristol will participate in general public meetings and public availability meetings to discuss project progress and activities as detailed in Task 7 in the PWS. These meetings are to be held in the San Luis Obispo area. The initial public meeting was conducted on June 16, 2010. The date(s) of follow-on public meetings will be scheduled as necessary in accordance with the project schedule. Bristol and its subcontractors will provide technical and logistical support for these meetings.

A Public Involvement Plan (currently in press) prepared in compliance with EP 1110-3-8, ER 200-3-1 and the EM-CX Interim Guidance 06-04, which outlines the approach for public notifications, public meetings, and review of project information, has been completed and will be submitted to USACE and stakeholders for comment before final approval.

Bristol and its subcontractors have been advised by USACE not to publicly disclose any data generated or reviewed under this contract or any subcontract, unless specifically authorized by the USACE contracting officer (CO). When approached by any person or entity requesting information about the CSLO RI/FS, project personnel will defer to the USACE CO or USACE public affairs office (PAO) for a response. Reports and data generated under this contract will become the property of the government. Distribution to any other source by Bristol is prohibited unless authorized by the USACE CO.

## **2.9 SUBCONTRACTOR MANAGEMENT**

Prior to subcontract work being performed, the Bristol Contract Administrator will negotiate and prepare a subcontract that will detail all necessary and appropriate terms and conditions, including the PWS. Once the subcontract is executed, periodic reviews will be held to ensure that contractual requirements and milestones are met. These reviews will cover contractual progress, technical progress, and schedule status.

In addition to reviews, the subcontractor(s) may be required to prepare weekly/monthly technical progress reports that identify one or more of the following: (1) progress and status of work; (2) significant accomplishments during the reporting period; (3) comparison of actual, technical, and schedule progress versus planned progress; (4) status of all long lead/critical delivery items; (5) analysis of significant problems; (6) a summary of specific plans for the next reporting period.

The Subcontract Administrator will be responsible for subcontract control and will be the point of contact to provide a direct and formal line of communication between Bristol and the subcontractor. Responsibilities of the Subcontract Administrator are as follows:

- Preparation and maintenance of a subcontract file, including all information generated during negotiations.

- Preparation of work authorization records and maintenance;
- Coordination of all documents required for internal administration;
- Subcontractor coordination, including the receipt and transmission of all correspondence;
- Review of subcontractor invoices prior to payment;
- Liaison with the PM regarding all matters affecting the subcontract;
- Modification of subcontracts as required to reflect changes in technical direction during the term of the subcontract; and
- Monitoring the subcontractor's work to assess progress.

Data generated by the subcontractor(s) as part of subcontract deliverables will be reviewed by technical staff assigned to that function. In the field, the Bristol SUXOS (or designee) will review deliverables from the subcontractor prior to delivery to USACE.

## **2.10 MANAGEMENT OF FIELD OPERATIONS**

Specific responsibilities of the management team are discussed earlier in this chapter. All work will be performed in accordance with this RI/FS WP and the CSLO PWS.

The Bristol SUXOS will be responsible for all field operations. To ensure that the project staff maintains focus on safety and project goals, the SUXOS will hold daily operational staff meetings. The SUXOS will manage technical UXO field operations to include surface visual surveys, intrusive investigations, and disposal operations.

The Site Geophysicist will be responsible for the management of onsite geophysical field operations by being in direct and daily contact with the field teams and site management, and being on site periodically throughout data collection. In addition, the Site Geophysicist's responsibilities will also include data acquisition, management, processing and target reacquisition, delivery of daily logs, raw and field-processed data, and daily QC documentation to the PM.

The GIS manager will be responsible for the management and presentation of geophysical target and field investigation data. Specific duties include the day-to-day management responsibilities of GIS projects, staff, and budget. The GIS Manager coordinates project GIS needs with the Program Manager, SUXOS, Project Geophysicist, and other project staff as necessary. The GIS Manager coordinates regularly with the USACE GIS Manager and other USACE personnel as required. The GIS Manager also oversees the Database Manager, and provides high-level oversight of the development of the database users, structure, and applications.

The safety of all personnel on the project site will be paramount during RI field operations. To ensure safety of the field crews, Bristol DGM teams have been designed to incorporate at least one UXO Technician II to allow them to operate without escort. A safety and work assignment briefing will be conducted prior to the beginning of each day's field activities. The safety briefing will address any known hazards of concern for the particular area(s) to be investigated. Attendees and briefing substance will be recorded on the safety brief log (Appendix F).

During the DGM, positions will be recorded for MEC, MD items, and other surface features such as craters, bunkers, and military equipment that will assist in demarcating target areas and analysis within the project GIS. MEC/UXO items discovered on the surface during the geophysical investigation will be reported to the SUXOS immediately and the MEC/UXO will be removed or disposed of in accordance with the Project Explosive Siting Plan (USACE, 2010, in press).

The Project Organization Chart outlines the personnel composition of project management, UXO, geophysical, reacquisition/dig, environmental sampling and QC teams. The number of teams may change as production requirements fluctuate to meet the RI field data collection objectives. Natural resource/cultural monitors may be required and will be designated to teams on an as-needed basis. The disposal team will be responsible for conducting MEC disposal/MPPEH/MD processing at the site. When not actively involved in disposal operations, this team will be used for all other MEC investigation tasks.

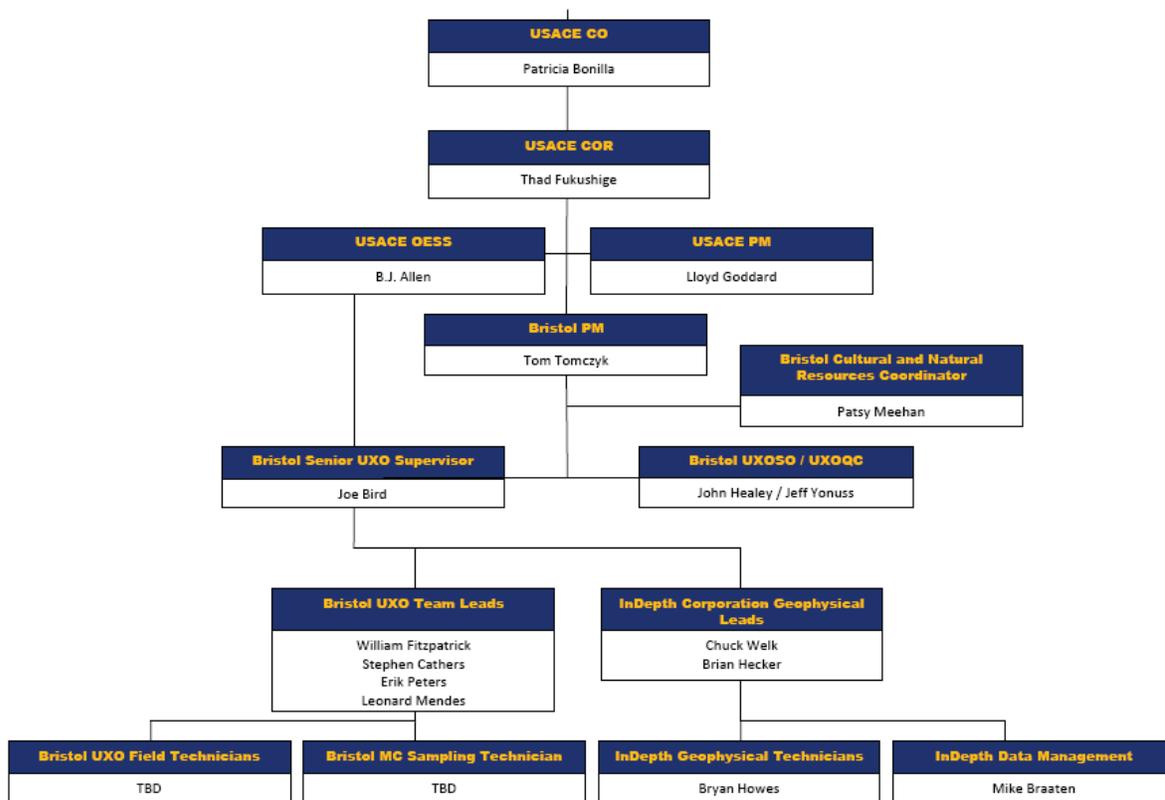
## **2.11 ORGANIZATIONAL CHART**

Bristol is responsible for conducting the RI/FS in compliance with all applicable policies and guidelines. USACE is responsible for providing contract oversight and QA. Bristol will conduct the RI required by the USACE and necessary for presentation in the RI/FS Report. Prior to finalizing the report, Bristol will incorporate comments received from USACE, regulatory agencies, and other additional stakeholders.

DGM data submittals will be transmitted to USACE in compliance with contract specifications by the Bristol PM or appropriate designee (i.e., InDepth).

The Organizational Chart below outlines the project lines of responsibility.

### PROJECT ORGANIZATION CHART



### 2.12 IDENTIFICATION OF GUIDANCE, REGULATIONS, OR OTHER POLICY

- Engineer Manual (EM) 385-1-1 (15 September 2008) Safety and Health requirements;
- Engineering Pamphlet (EP) 75-1-2 (4 December 2007) MEC Support During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities;
- USACE EM 1110-1-4009, (15 June 2007) Military Munitions Response Actions;
- USACE EP 1110-1-18, (3 April 2006) Military Munitions Response Process;
- Title 29 CFR, Part 1910.120(g)(5) [29 CFR 1910.120(g) (5)], 29 CFR 1926.65(g) (5), and 29 CFR 1910.132. Personal protection equipment for each specific work activity;
- Medical Surveillance Program, Bristol will comply fully with 29 CFR 1910.120(f) (6) and 29 CFR 1926.65(f) (6) at all times;
- 29 CFR 1910.1030. First aid and cardiopulmonary resuscitation, Bloodborne pathogens;
- Occupational Safety and Health Administration (OSHA) certification under 29 CFR, 1910.120 and 29 CFR 1926.65;
- 29 CFR 1910.120, 29 CFR 1926, and 29 CFR 1904. Record-Keeping Requirements for all safety and health record-keeping;

- OSHA's Form 300, Log of Work-Related Injuries and Illnesses (29 CFR 1904.2); and
- Bristol Incident Report Form.

### **2.13 RECOVERED CHEMICAL WARFARE MATERIEL**

RCWM is not expected at this site. However, in the event that RCWM is found, the Lead USACE OESS and the Bristol PM will be notified. All personnel will be moved upwind to a safe area, and the USACE OESS will be notified immediately. USACE will be responsible for disposition of suspected RCWM.

### **2.14 PROCEDURES FOR RECOVERED MEC**

Any MEC items found will be flagged and a Global Positioning System (GPS) will be used to annotate its location. The MEC will be disposed of according to the procedures detailed in this plan.

### **2.15 TECHNICAL SCOPE OF MEC INVESTIGATION**

A maximum of 4,399 targets will be reacquired and a subsurface investigation of the items will be conducted. All excavations will be back-filled with soil from the surrounding area.

### **2.16 CHANGED SITE CONDITIONS**

The PM will be advised of changed site conditions and will coordinate with the USACE PM on appropriate measures or changes to be made. Proposed site layout may be seen in Appendix B.

### **2.17 MOBILIZATION PLANS**

Bristol will mobilize the PM and SUXOS to CSLO, prior to commencement of field activities in order to coordinate with applicable personnel, perform general project preparation, and rent and/or purchase supplies and equipment. The other personnel required to complete the project will mobilize at the appropriate time to start fieldwork. The SUXOS, UXOQC, and UXOSO will be on site for all field activities. The geophysical survey team composition is to be determined. Three intrusive field teams will be used for the intrusive investigation. Each team will include one Tech III, two Tech II, and one reacquisition technician. One MC sampling technician supported by a UXO Tech II or above will perform MC sampling.

## **2.18 SITE PREPARATION AND ACTIVITIES**

No vegetation removal is planned for this Task Order. An instrument verification strip (IVS) and a blind seeding program (BSP) will be established by the DGM Team prior to commencement of DGM.

## **2.19 STATISTICAL SAMPLING**

Statistical sampling does not apply to this task order.

## **2.20 MEC REPORTING AND DISPOSITION**

Reporting and disposition of MEC will be recorded and reported on daily reports. The MEC location, nomenclature, condition, and final disposition of MEC will be captured. Disposal of MEC will be by detonation on-site.

(Intentionally blank)

### **3.0 FIELD INVESTIGATION PLAN**

This chapter provides details of the approach, methods, and operational procedures for RI/FS field investigation activities at CSLO, including:

- GSV;
- DGM;
- Geophysical data processing;
- Stake-out of geophysical targets;
- Intrusive investigation of geophysical targets;
- Data assimilation/analysis;
- MC sampling and analysis;
- MEC removal and disposal; and,
- Reporting.

#### **3.1 OVERALL APPROACH TO THE RI/FS**

The overall approach to the RI/FS is to address MEC and MC, utilizing comprehensive sampling methodologies involving surface visual, geophysical and intrusive investigations, to collect data to locate and adequately characterize target areas associated with three MRS. Bristol proposes a dynamic approach to the RI/FS based on stakeholder input during the TPP meetings. The transect spacing for the CSLO RI investigation was originally determined based on the USACE recommendations found in EM-01-1110-4009. Individual coverage requirements were determined for the MRS (see Section 3.6.2.3). Further analysis of the calculated transect spacing for each individual area was compared with the MGFDD for the smallest ordnance item of concern within each of these areas to ensure that all of the proposed transect spacings would be sufficient to intersect fragmentation arcs (or potential target areas) at least twice. Additionally a statistically defensible MC sampling program is also planned within the approach.

Within this approach, the following steps will be followed during the RI:

- Review of existing documents such as the ASR, the preliminary HRR, the SI, and the Draft Historic Map and Aerial Photo Analysis (APA) combined with site visits were used to develop the CSLO CESM;

- Development of a RI/FS WP using information gained during review of archive data, site visit, and input/information resulting from the CSLO TPP meetings in accordance with project DQOs;
- Division of MRSs into management grids and sectors within the project GIS, to allow management and analysis of RI/FS data throughout the project;
- Perform a site-specific GSV in accordance with DID WERS-004.1 to test proposed geophysical equipment and techniques for use during the RI/FS;
- Perform a geophysical investigation of MRSs (SI defined targets and associated buffer areas) to define target areas;
- Conduct MC sampling, as appropriate for the type of munitions identified;
- Conduct a background metals survey;
- Manage MEC/MD in accordance with applicable regulations and guidance; and,
- Report the findings in a RI/FS report with follow-on Proposed Plan and DDs, as applicable.

### 3.1.1 Site Characterization Goals

The purpose of the RI fieldwork is to:

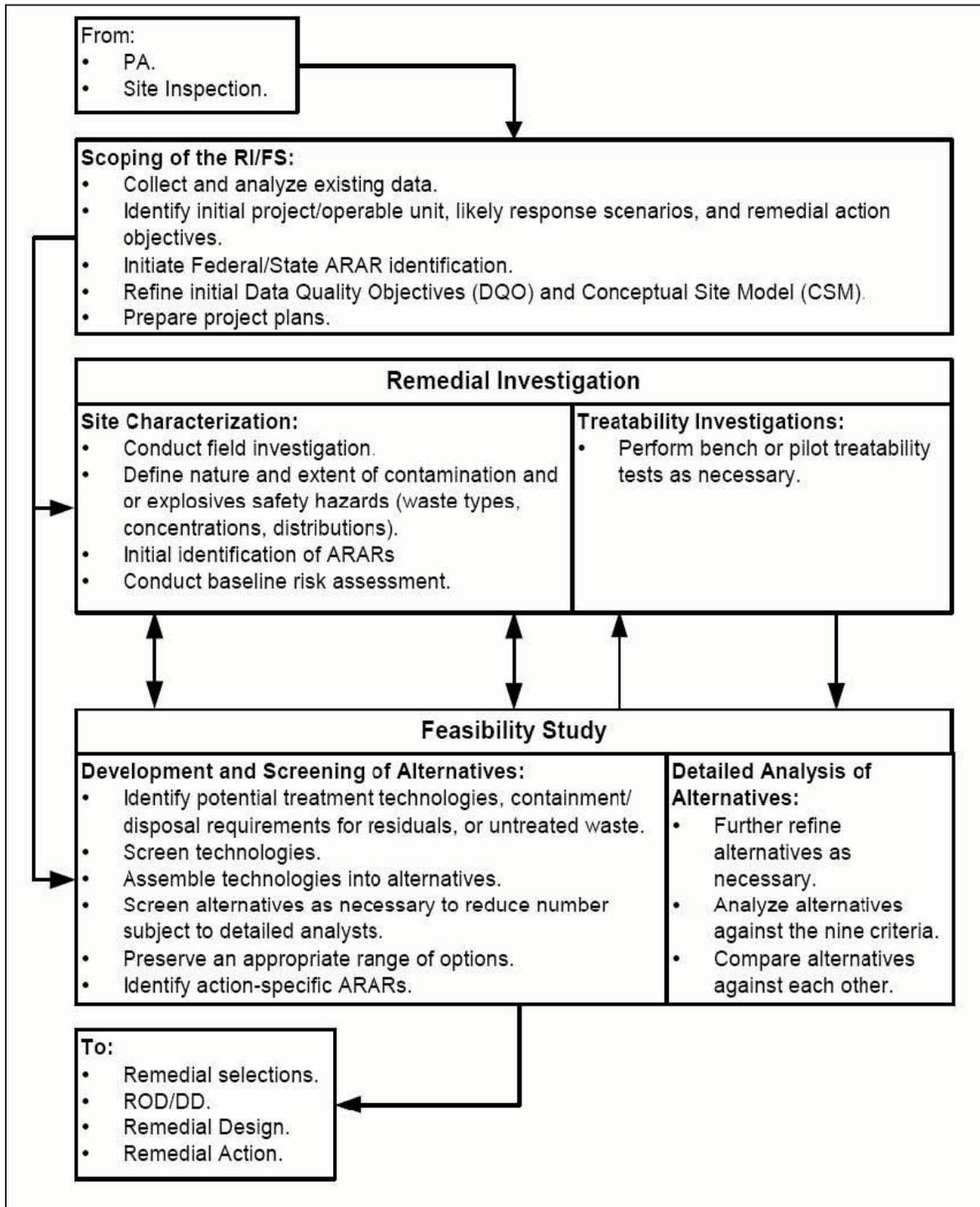
- Identify and to address MEC, MD, and MC to locate and adequately characterize target areas associated with three MRS and recommend future actions or NDAI, as appropriate;
- Identify potential safety problems associated with the remnant MEC, MD, and MC;
- Identify, evaluate, and recommend response alternatives for the remnant MEC, MD, and MC; and,
- Document the selected response alternatives for the areas addressed.

The potential risk management or response alternatives identified through the RI/FS effort will be evaluated based on effectiveness in remediating MEC and MC at the site, implementability, and overall cost. The selected alternatives will address MEC and MC contamination in a manner that meets the applicable Project Action Levels (PAL) (Table 15-1 in Appendix E – Sampling and Analysis Plan) for to human health, wildlife and the environment with respect to the intended future land use at the site.

The RI/FS is a continuous process; necessary input includes consideration of the concerns of the stakeholders involved. The RI/FS will provide the background, approach, and evaluation process for determining the potential hazard that MEC poses to the landowners and public at

the CSLO site. The RI/FS will summarize field activities addressed in the WP and outline recommendations for future actions based on the methodology described in this chapter. New information and further discoveries may affect the findings and recommendations of the RI/FS report. For the RI/FS process to be successful, close coordination and cooperation between the stakeholders, community, regulators, and technical support personnel must occur. In serving as a cornerstone for the long-term risk management effort at CSLO, the RI/FS report will identify and evaluate reasonable alternatives and provide recommendations for action, where appropriate. Figure 3-1 illustrates the RI/FS decision logic for CSLO.

**Figure 3-1 RI/FS Decision Logic Flow Chart**



To achieve the objectives of this RI/FS, the site requires sufficient investigation for the presence of residual MEC and MC. Residual MEC will be estimated based on geophysical and intrusive data collected during RI investigation activities. Site MEC investigation goals include:

- Accurately locating and recording surface MEC;
- Accurately recording geophysical anomalies;
- Properly interpreting the geophysical data; and,
- Properly documenting the intrusive findings.

Residual MC will be assessed through a biased sampling program for explosives or metals residue in site soil. Soil sampling activities will be conducted to determine if MC have been released when compared to the applicable PALs and project ambient conditions to confirm or deny a release of MC has occurred. In the event that an MC release is confirmed, future investigations may be conducted to assess possible impacts to human health, ecological receptors, and the environment associated with MC. MC investigation goals include:

- Accurately defining background metals concentrations and MC metals concentrations in soil through a sampling and analysis program. Sampling for metals will include:
  - Antimony;
  - Lead;
  - Copper; and,
  - Zinc.
- Determine concentration of explosives constituents in soils, if present

The RI/FS will be considered successfully completed when MEC, MD, and MC are addressed to adequately characterize target areas associated within the three MRS, and to allow for the evaluation of remedial alternatives.

### **3.1.2 Data Quality Objectives**

The CSLO DQOs are qualitative and quantitative criteria used to guide sample collection and analysis activities. The DQOs for this RI/FS project were developed by the project team during TPP sessions prior to conducting investigative activities to ensure that the data generated during the execution of the analytical program are of appropriate quality to support the anticipated end use of the data. DQOs seek to ensure that the right type, amount, and

quality of data are collected to accomplish the objectives of the project. The DQOs for this project are included in Appendix J.

The U.S. Environmental Protection Agency (USEPA) has a seven-step process for establishing DQOs as published in "Guidance on Systematic Planning Using the Data Quality Objective Process" (USEPA, 2006). Each of the seven steps was applied in determining the DQOs for the RI/FS as described below.

**Step 1: Problem Statement** - The first step in developing DQOs is to define the problem that has initiated the study. For the purposes of this RI/FS, the problem statement is: "Do target areas exist at the former CSLO (MRS-01, MRS-02 and MRS-05)?", and if so, "Do the remaining potential MEC items and MCs at these target areas pose a hazard to current or future land users?"

**Step 2: Identify the Decision** - The second step in establishing DQOs is to identify the decision statement that the study will attempt to resolve. The potential for an explosive safety hazard depends upon the presence of three elements: a source: (presence of MEC); a receptor or person; and an interaction between the source and receptor (such as picking up the item or disturbing the item by plowing). There is no hazard if any one of these three elements is missing. Hazard will be assessed by identifying and quantifying (where applicable), each of the three elements. Is MEC present? Are receptors present? Is there a possible interaction? MC concentrations detected in soil will be compared to PALs as a screening level indication of hazard (discussed in Appendix E). The evaluations of site specific analytical results will be compared to the screening levels identified in Table 15-1 of the SAP. Based on site-specific MEC and MC investigation data, response alternatives will be identified, evaluated, and selected for the protection of human health as well as ecological receptors at the site. If necessary, additional investigations will be recommended.

**Step 3: Identify Inputs to the Decision** - The primary data inputs for the RI/FS evaluation include the types, locations and depths of UXO identified at the site, MC concentrations detected in soil, and the anticipated land-use of the site. RI Field data inputs include:

- Results of the investigation to locate surface features indicative of MEC usage (e.g. MEC/MPPEH/MD, craters, surface scaring, target debris, pits, and trenches);

- Results of the DGM survey based on judgmental survey design to characterize target areas and other areas indicative of MEC usage identified by the investigation:
  - Number, location, and magnitude of anomalies in locations representative of non-target conditions and target conditions
  - Results of excavations/reacquisition for a representative subset of anomalies indicating whether MEC, MPPEH, or MD was present, the depth and orientation of discovered objects, and to the extent possible what type of MEC was found
  - GPS measurements on survey control points, to confirm accuracy of the units to be employed in the field;
- Test results for DGM instruments on representative test plots;
- MC chemical analysis at subset of areas with evidence of energetic remnants and metals residue. This will include areas which may not have energetic remnants such as small arms ammunition;
- Conceptual Exposure Site Models (Appendix J - Project Data Quality Objectives and Conceptual Exposure Site Models); and
- Data obtained by others during the SI, WAA, and the 1992 and 2010 TCRA.

**Step 4: Define the Study Boundaries** - The geographical boundaries of MRS areas where review of the historical data, ASR, HRR, SI, WAA, 1992 and 2010 TCRA and the APA with verification site visit indicated potential past training activity are shown in Appendix B.

Currently, three MRSs have been identified for investigation during the RI/FS based on records reviews and the SI. The estimated combined area of the three MRSs is 2549 acres. Given that much of the terrain of the larger MRS (MRS-05) is difficult to access, less than 100% of the area of interest is likely to be available for investigation. Other anthropogenic constraints (such as fences, roads, buildings, and power lines) and non-anthropogenic constraints (such as cultural and environmentally sensitivity areas, and geologic materials) may also limit access throughout the MRSs. The MRS Location Map in Appendix B shows the SI-identified former range locations and the RI study boundary.

**Step 5: Develop a Decision Rule** - The purpose of the decision rule is to define the parameter of interest, specify the action level, and integrate DQO outputs into a single statement that describes a logical basis for choosing among alternative response actions.

**Munitions Constituents** - If MCs are detected at concentrations greater than the applicable PALs established for the project (see Table 15-1 in the SAP), then additional sampling is required to define the nature and extent of MCs. Results of the geophysical investigation will

be used to define the location and boundaries of sampling towards areas with the highest density of MEC.

Munitions and Explosives of Concern - If MEC is present, receptors are present, and there is possible interaction, then evaluate appropriate response alternatives. Response alternatives will then be selected based on considerations of effectiveness, implementability, and cost.

**Step 6: Specify Tolerable Limits on Decision Errors** – The transect spacing, survey path width and line miles will combine to provide the recommended-minimum coverage for each of the specified MRS investigation area. These coverage percentages at the CSLO range from 0.75% to 7.5% based on the overall dimensions of each MRA. The distribution of the transects required to meet the minimum-recommended acreage required by the USACE’s EM 1110-1-4009, Section 7.10 will be constrained to accessible lands as presented and agreed upon at the TPP meetings with stakeholders. Appropriate MC analytical quality levels are identified in detail in the UFP QAPP, of the MC SAP (Appendix E). The overall QC program for this project is provided in Chapter 4.

**Step 7: Optimize the Design for Obtaining Data** - The purpose of this step is to identify a resource-effective data collection design for generating data that are expected to satisfy the DQOs. The RI/FS geophysical study design is optimized by:

- Placing geophysical transects within the MRSs identified for investigation during the CSLO RI/FS based on records reviews and the SI.
- Distributing the geophysical transects throughout each MRS adhering to EM 1110-1-4009 minimum-recommended coverage guidance and distribute transects to the greatest ability within accessible areas and Sensitive Species Constraints. Use judgmental transect placement in areas of MRS existing washes in search of errant materials that may have been moved by wind and water erosion; and,
- Intrusively investigating all anomalies identified as geophysical targets through geophysical data processing and interpretation in accordance with the GSV.

### **3.1.3 Data Incorporation into the RI/FS Report**

DGM, intrusive investigation and MC sampling data will be migrated to the CSLO database. This database will be managed and updated as additional data are provided or generated. The CSLO database will be designed such that specific queries, tables, and reports can be generated for analysis and presentation of the existing MEC hazards within each MRS. A

database dictionary will be developed used for the acquisition of field data to ensure data integrity and reduce/eliminate data transcription errors. The RI/FS report will follow USACE format guidance and will be organized as follows:

- Executive Summary: Provides a summary of the report highlighting the objectives, RI results and recommended alternatives for CSLO;
- Chapter 1.0 - Introduction: Discusses the purpose and objective of the RI/FS;
- Chapter 2.0 - Site Description: Provides the following:
  - Brief history of CSLO
  - Discussion of the natural features of CSLO (e.g., geology, soil, topography, sensitive ecology, archaeology)
  - General discussion of the current infrastructure and future land use within the project area
  - Overview of CSLO
  - Summary of previous MEC investigations and RAs within CSLO
  - Discussion of the ARARs that apply to CSLO;
- Chapter 3.0 - RI Results: Discussion of the methodology and equipment chosen; results of previous technology evaluation; QCs; QA; geophysical investigation data collection results; the source, nature and extent of MEC; description of MEC hazards; and summary of MEC on site;
- Chapter 4.0 - Risk Evaluation: Includes the results of the qualitative risk assessment using the MEC HA process to estimate the level of safety risk that exists as a result of the presence or potential presence of MEC; and assessment of potential MC Hazard based on MC sampling analysis using human health risk based screening levels;
- Chapter 5.0 - Institutional Analysis: Documents government agencies and private individuals that have jurisdiction over lands within the project area and assesses their capability and willingness to assert control that would protect the public at large from explosives hazards;
- Chapter 6.0 - Identification of RI/FS Objectives: Presents the process used to identify alternatives to be evaluated for the RI/FS;
- Chapter 7.0 - Identification and Analysis of Alternatives: Presents the alternatives considered in the RI/FS and a discussion of the evaluation criteria for each alternative;
- Chapter 8.0 - Recommended RI/FS Alternatives: Presents the recommendations for alternatives to manage risk. If analytical results exceed proposed threshold levels, recommendation for additional work (which could potentially include screening level risk assessment, removals, or implementation of a data gaps investigation) will be made;
- Chapter 9.0 - Recurring Review: Describes the recurring reviews performed by USACE at CSLO;

- Chapter 10.0 - References: Provides an inventory of the reference material used in the preparation of the RI/FS;
- Site Figures;
- Appendix A - PWS: Bristol PWS for the RI/FS;
- Appendix B - Conceptual Site Model;
- Appendix C - Geophysical Investigation Final Report;
- Appendix D - Geophysical Investigation;
- Appendix E - Environmental Sampling and Analysis Results: Provides description of the nature and extent of MC contamination;
- Appendix F - Risk Management Plan; and,
- Appendix G - Responsiveness Summary.

Additional appendices will be provided, as necessary.

### **3.1.4 MEC/MC Exposure Analysis**

All relevant data acquired during the RI fieldwork will be migrated to and analyzed within the CSLO GIS. Once the nature and extent of MEC/MC contamination at the site are characterized during characterization of potential target areas, the potential risk due to exposure to MEC/MC contamination will be assessed. The potential risk posed by MEC/MC contamination may be characterized by evaluating the ordnance, site characteristics, human, and ecological exposure pathways. The ordnance category includes the type of MEC identified, the level of sensitivity (i.e., the potential adverse health effects associated with exposure to the specified MEC/MC), the density of MEC in a specified area, and the depth of the MEC. The investigations will also analyze the potential direct and indirect exposure of pathways to terrestrial plants, soil invertebrates, and birds and mammals of each feeding guild. At this time, a SLERA is not part of the PWS. However, if future information indicates a need for a SLERA due to concentrations of metals above the screening levels indicated in Appendix E (CSLO SAP) a recommendation will be made to address this pathway.

### **3.1.5 Use of TCRA**

TCRA are RAs intended to address the imminent safety hazard posed by the presence of MEC/MC, where cleanup or stabilization actions must be initiated within 6 months to reduce the hazard to public health or the environment. Once the imminent threat at a site is

addressed through the TCRA, additional work that is necessary is completed through the non-TCRA process. During the course of the RI/FS process, if an area is discovered that poses an imminent danger, USACE will be notified for the purpose of reevaluating the area for a TCRA.

If an evaluation of the hazards warrants a TCRA, a DD will be prepared and submitted. This document will contain a location and description of the site, a description of existing MEC/MC hazards, current land use activities, and previous actions that have taken place to address the MEC/MC hazard. The DD will also include an endangerment determination with the following statement: “There is a significant possibility that an individual may encounter MEC/MC hazards at this site, and that these hazards may cause injury or death to individuals who encounter the hazards if not addressed through the response action described in the DD.”

There are two types of TCRA that may be considered during an MEC/MC response action: a minimum-scope TCRA and an expanded scope TCRA. During a minimum-scope TCRA, the minimum resources necessary to address the imminent threat should be allocated. This could include, but is not limited to, removal of surface items, fencing the site in, and posting signs warning of the MEC/MC hazard. An expanded-scope TCRA may be selected if it is deemed as cost effective to address full cleanup requirements in order to avoid future remobilization costs.

As summarized in section 1.8.7, a TCRA was conducted during the autumn of 2010 on approximately 170 acres of MRS-05.

### **3.1.6 Follow on Activities**

Upon completion of the RI/FS and associated reports, follow-on activities may include:

- Implementation of Risk Management processes;
- Implementation of remedial actions ; and,
- Implementation of the recurring review processes.

## **3.2 IDENTIFICATION OF AREAS OF CONCERN**

The geographical boundaries of the project site are shown in Appendix B.

### **3.3 REMEDIAL INVESTIGATION TASKS**

#### **3.3.1 Location Surveys and Mapping**

The Location Surveys and Mapping Plan describe the methods, equipment, and accuracy for conducting location surveys and mapping of MEC sites. All work will be performed in accordance with USACE DID MR-09-007 guidelines.

##### **3.3.1.1 General**

Monuments will be located to provide the best coverage of the study area with respect to using these monuments as control points for the geophysical survey and MC sampling. Monument locations will be determined by the land survey subcontractor and approved by Bristol.

Equipment used in positional surveying activities on the project will include Real Time Kinematics (RTK) GPS base station and rover(s), mapping grade GPS rovers, and survey total station. In most cases, survey equipment to be used will be RTK GPS sub-meter capable Differential Global Positioning System (DGPS) capable hand-held GPS for surface visual surveys; use of other survey equipment and methods will be coordinated with USACE. Transect locations will be entered into a GIS database. A tabulated list of monuments, corners, starting, ending, turning points or any pertinent survey data will be submitted in Universal Transverse Mercator (UTM) coordinates in a Microsoft Excel spreadsheet (version 98 or higher) following completion of work. In addition, the location of any MEC and MD items recovered during RI activities, as well as and MC sample locations, will be recorded by DGPS in UTM coordinates to the nearest 1-foot.

##### **3.3.1.2 MEC Safety Provisions**

During all initial fieldwork and all intrusive activities, a UXO Technician Level II (or above) will accompany the survey crew. The UXO Technician II or above will conduct visual surveys for surface munitions prior to the survey crew entering a suspected area, and a magnetometer survey of each intrusive activity site to ensure the site is anomaly free prior to the surveying crew setting monuments or driving stakes. This individual will not be assigned additional survey tasks which would interfere with the MEC safety aspects of area clearance for driving stakes, iron pins, monumentation, or other survey control, which will penetrate the surface in a potentially MEC-contaminated area.

### **3.3.1.3 Accuracy**

All survey control points will be tied to established monuments with horizontal and vertical control of "Class I, Third Order" (accuracy of 0.01 feet) or better IAW USACE DID MMRP-09-007. Horizontal control for the site shall be based on North American Datum 83 (NAD83) using the UTM Zone 10, Meters. Vertical control, if available and required will also be based on either the Metric system and referenced to the North American Vertical Datum 88 (NAVD88).

Where existing monuments are inadequate for the requirements of this WP, new control points will be emplaced and will be of a permanent nature for recoverability during future phases of work within the same project. All control points will be iron or steel pins, concrete monuments, or other permanent construction method. The Northing and Easting (Y, X) for all control points, grid corners, transect points, and any boundaries or closures will be presented in the RI/FS Report.

### **3.3.1.4 Plotting/Mapping**

The location, identification, coordinates, and elevations of all the control points recovered and/or established at the site will be plotted on reproducible media for plan metric or topographic maps at the scale specified in the task order. Each control point will be identified on the map by its name and number and the final adjusted coordinates and elevations.

Each map will include a grid north, a true north, and a magnetic north arrow with the differences between them in degrees, minutes, and seconds shown. Grid lines or tic marks at systematic intervals with their grid values will be shown on the edges of the map. A legend showing the standard symbols used for the mapping and a map index showing the site in relationship to all other sites within the boundary lines of the project area will be shown.

The coordinates for the transect markers or sampling grid corners will be shown to the closest 0.3 m (1 ft). The locations of individual recovered MEC items will be surveyed using GPS instrumentation to obtain a horizontal accuracy of  $\pm 0.3$  m (1 ft) and plotted and identified on the map.

### **3.3.2 Digital Data**

An overall planimetric design file will be created and digitized into an Environmental Systems Research Institute (ESRI) ArcView file at an elevation of zero. Cut sheet plots and views into the project data will be created by referencing the planimetric and contour files from additional ArcView work files. All associated cell, reference, or attachment files will be attached and provided with the digital data set along with all other supporting files or data.

All data will conform to the Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE). All SDSFIE compliant data will be submitted electronically on IBM-compatible PC optical media (CDROM or DVD).

### **3.3.3 Items and Data**

#### **3.3.3.1 MEC Items**

Spatial location of MEC items encountered will be surveyed with GPS technology to mark the location of the MEC item. All associated GPS and dictionary data will be submitted in a specified ESRI format and/or MEC database to USACE.

#### **3.3.3.2 Other Items as Required**

Throughout the course of the project, it is anticipated that the location of other items or features (e.g., roads, firebreaks, fences, power lines) will need to be determined. The location of these items will be acquired with GPS technology where possible, and with standard surveying procedures where terrain and or vegetation preclude such acquisition. Selection of the appropriate survey method for other items will be coordinated with USACE.

The data items to be delivered and the specific timeframe for delivery will be as specified in EM 1110-1-4009, Chapter 8. Deliverables will be submitted in electronic format and will include:

- Original copies of all field books, layout sheets, computation sheets, abstracts and computer printouts;
- Tabulated listing of all project control markers established and/or used in support of the MEC response showing adjusted horizontal and vertical positional values in meters. Tabulated listing of all UXO/MEC recovered and any specific anomalies not completely investigated;
- Completed Electronic Dig Sheet (EDigS) database forms;

- Unique items created and/or used to create the end products and the narrative and description required by the PWS; and,
- Required location, project, and transect maps.

### **3.4 SURFACE PREPARATION**

The clearing of vegetation and surface metal will not be performed during this project. If possible, large vegetation and surface items that cannot be moved will be avoided, and the transect survey lines moved away from/directed around the items.

### **3.5 GEOPHYSICAL SYSTEM VERIFICATION PLAN**

The geophysical methods and equipment to be employed during the RI will be assessed during the GSV prior to and during field work performance. DGM data evaluation and QC will be performed in accordance with the standards and requirements established in the “Geophysical System Verification (GSV): A Physics-Based Alternative to Geophysical Prove-Outs for Munitions Response” (ESTCP, July 2009). Additional QC evaluation will include the USACE performance requirements for DGM methods referenced in DID MMRP-09-004. These standards include static and reference item response, determination latency correction, sample spacing and foot-print coverage, dynamic detection repeatability, dynamic positioning repeatability and anomaly resolution. The measured quality objectives (MQO) for establishing the target selection criteria will be based on published EM-61 response values for similar ordnance items and analysis of GSV data and results. The data will be reviewed daily to verify adherence to the established data quality standards. All data will be reviewed and checked for appropriateness and accuracy prior to demobilization from the site to insure project completeness. Processed data and QC results will be provided to USACE on a weekly basis, as referenced in DID MMRP-09-004. Details of the GSV procedures are included in Appendix G. The existing IVS developed during the project start-up will be used for QC, instrument testing, and training of geophysical field staff members to be employed during the project.

### **3.6 GEOPHYSICAL INVESTIGATION PLAN**

This section provides details regarding the approach, methods, and operational procedures that will be employed while performing RI-related geophysical investigations for CSLO. This section was developed in accordance with the GSV and DID MMRP-09-004 and is dependent

on using the GSV methodology including IVS and BSP with Industry Standard Objects (ISO)s. All work regarding the geophysical investigation during this RI will be conducted in accordance with this Geophysical Investigation Plan, the PWS, the APP, and applicable USACE DIDs.

### **3.6.1 Site Description**

The CSLO project site description is presented in Section 1.0.

#### **3.6.1.1 Geophysical DQO**

The objective of the geophysical investigation is to accurately locate and record the locations of geophysical anomalies (potential MEC) for the purpose of characterizing potential target areas. The geophysical investigation areas and identified anomalies will be mapped for subsequent evaluation (including intrusive investigations of anomalies where geophysical signal strength and amplitude suggest the potential of MEC).

#### **3.6.1.2 Specific Areas to be Investigated**

The geographical boundaries of the project site are shown in Appendix B.

#### **3.6.1.3 Past, Current and Future Use**

The past, current, and future use of the site is presented in detail in Section 1.

#### **3.6.1.4 Anticipated UXO Type, Composition and Quantity**

M6 2.36 in High Explosive (HE) Rockets, M9 HE rifle grenades, M28 3.5 in HEAT Rocket, M43 81mm HE Mortars, M49 60mm HE Mortars, and M1 105mm Projectiles in MRS-05 and the Mk2 Hand Grenades and M21 Practice Hand Grenades in MRS-01 and 02 have been identified as likely to be present within the project site. Composition of the expected MEC is mostly steel, with some components made of zinc and brass. The quantity of MEC items within the project area is currently unknown.

#### **3.6.1.5 Depth Anticipated**

M9A1 rifle grenades are not expected to be found at depths of greater than 6 inches bgs. Based on ESTCP investigation results, 60mm and 81mm mortars are not expected to be found

below 12 inches. M1 105mm Projectiles are not expected to be found at depths of greater than 36 inches bgs.

#### **3.6.1.6 Digital Topographic Maps**

Refer to Chapter 1 Section 1.5.1 for a description depicting topography and surface water. A topographical map is included in Appendix B.

#### **3.6.1.7 Vegetation**

Refer to Chapter 1 Section 1.5.2 for information concerning vegetation.

#### **3.6.1.8 Geologic Conditions**

Refer to Chapter 1 Section 1.5.5 for information concerning geology.

#### **3.6.1.9 Soil Conditions**

Refer to Chapter 1 Section 1.5.4 concerning soil conditions.

#### **3.6.1.10 Surface Water and Groundwater Conditions**

Refer to Chapter 1 Section 1.5.6 for information concerning surface and groundwater.

#### **3.6.1.11 Geophysical Conditions**

There are no documented background geophysical variations at this site other than the naturally occurring magnetic gradient.

#### **3.6.1.12 Site Utilities**

Utilities exist on portions of the site. Prior to the start of field activities, a utility locate will be performed and utilities marked.

#### **3.6.1.13 Man-Made Features**

Numerous man-made features and conditions are present within the survey area that may affect the geophysical investigations. A limited number of individual parcels have varying degrees of development ranging from rudimentarily maintained agricultural land to highly maintained recreational areas. Many roads exist across the investigation areas serving as access throughout the site and potential sources for cultural debris and uncontrolled disposal areas.

#### **3.6.1.14 Site-specific Dynamic Events**

There are no known dynamic events that will affect the proposed geophysical investigation techniques at this site. However, this area is commonly subjected to elevated wind speeds that may create logistical problems during performance of this investigation.

#### **3.6.1.15 Overall Site Accessibility and Impediments**

The project area is characterized by largely undeveloped lands. Site accessibility at the CSLO is controlled by two main factors: biological resources (vegetation) and terrain (slope) issues. Numerous roads exist throughout this area allowing efficient access to most of the sites. The main physical limitations are natural features and fences surrounding private property.

Per discussions with Mr. Dave Ragsdale (Cal Poly) during the TPP process; Bristol will contact Mr. Ragsdale with updates to the project field schedule and project work locations as they pertain to Cal Poly property. Mr. Ragsdale will inform Cal Poly departments as necessary to keep Cal Poly controlled herd animals segregated from field activities.

#### **3.6.1.16 Potential Worker Hazards**

Refer to Appendix D for a detailed description of the hazards potential at the project sites.

### **3.6.2 Geophysical Investigation Plan**

#### **3.6.2.1 Specific Area to be Investigated**

The area to be investigated is described in Section 1.

#### **3.6.2.2 Project-Specific Constraints**

The primary project-specific constraints are vegetation and terrain.

#### **3.6.2.3 Geophysical Survey Type**

InDepth will perform a transect-based DGM investigation over the accessible portions of the three MRSs that cover approximately 2,549 acres. All aspects of the geophysical investigation will be managed based on a combination of the USACE DIDs, the USACE recommendations found in EM-01-1110-4009, the “Geophysical System Verification(GSV): A Physics-Based Alternative to Geophysical Prove-Outs for Munitions Response”, (ESTCP, 2009), and the results of vetting of the MRSs for potential targets from analysis of historic

documents, maps, and aerial photography. The purpose of the DGM for the MRSs is to define the nature and extent of the target areas.

The transect spacing for the CSLO RI investigation was originally determined based on the USACE recommendations found in EM-01-1110-4009. Individual coverage requirements were determined for MRS-01 and MRS-02 (26 acres) and the subdivided areas of MRS-05a (492 acres) and 05b (1,112 acres). Further analysis of the calculated transect spacing for each individual area was compared with the HFD for the smallest ordnance item of concern within each of these areas and indicates that all of the proposed transect spacing will be sufficient to intersect fragmentation arcs (or potential target areas) at least twice.

In areas where concentrations of geophysical anomalies are identified along a single transect or where surface or subsurface conditions indicate a potential munitions target area, a focused delineation may be performed if targets are not identified on adjacent transects. This delineation will consist of additional DGM transect surveys to determine if an additional target feature exists and the extent of the potential target area.

The recommended transect spacing developed for use at the CSLO project site are as follows:

- MRS-01 and MRS-02 – 43 feet;
- MRS-05a – 218 feet; and,
- MRS-05b – 437 feet.

Recommended transect spacing of 43 feet at MRS-01 and MRS-02 (MRS-01 and MRS-02 Transect Spacing Figure in Appendix B) is based the size of the MRSs and on analysis of the potential target areas and their designation as former grenade courts. MRS-01, based on historic records, was in use by May 1942 as a practice grenade court. MRS-02, based on historic records, was in use by May 1942 as a live (High Explosive) grenade court. Though available site plans do not clearly locate either of these grenade courts, the throwing bays were readily discernable on aerial imagery of the period. Analysis of historic documents and investigations at MRS-01 did not identify any recent MD or MEC finds associated with this grenade court. Previous investigations of MRS-02 (in particular the 1992 TCRA) found MEC items, primarily consisting of MK2 High Explosive Hand grenades, MD in the form of

expended grenade fuzes, and abundant grenade fragments (CEMVS, 2010).

MRS-05 was sub-divided into two separate target range areas based on analysis of the potential target areas and their designation as multiple overlapping ranges.

MRS-05a (MRS-05a Transect Spacing Figure in Appendix B), based on historic records, was potentially in use as early as 1950 as a 3.5 inch rocket range. Records from 1953 indicate that this rocket range had ten firing points. According to historic documents, there were also multiple small arms firing ranges associated with MRS-05a (CEMVS, 2010). The recommended transect spacing of 218 feet is based on the size of the sub-division and will be sufficient to delineate M9A1 Rifle grenade target arcs based on minimum fragmentation distance. Target areas identified by the photo analysis document are expected to be covered by the transect surveys.

MRS-05b (05b Transect Spacing Figure in Appendix B), based on historic records, was potentially in use as early as 1942 as a towed 37mm gun target range overlapping an impact area, in use by 1950, for 60mm, 81mm, and 4.2 inch mortar rounds. Historic photos substantiate the firing of 81mm and 4.2 inch mortars, but also that established firing points were not identifiable. According to historic documents, there were also multiple small arms firing ranges associated with MRS-05b. Previous investigations of MRS-05 (in particular the 2009 ESTCP UXO Classification Pilot Project) found MEC items (including 60 and 81mm mortar) and MD items (associated with 4.2 inch rockets, 75mm guns, and practice bombs). The mortar rounds were expected based on historic evidence, but several unexpected items were discovered (including a 2.36 inch rocket and a 5 inch rocket warhead (CEMVS, 2010). The recommended transect spacing of 437 feet is based the size of the MRS and will be sufficient to delineate 61mm mortar target arcs based on minimum fragmentation distance. Target areas identified by the photo analysis document are expected to be covered by the transect surveys.

A scenario was processed through VSP using the following assumptions:

- Using half of the HFD to provide the probability of detection for 2 transects to encounter a given target.
- Basing the probability of detection on the proposed transect spacings for each portion of MRS-05 (a and b).

The analysis yielded the following:

- Based on the VSP results a transect spacing of 218 ft in MRS-05a is sufficient to result in a 99% probability of detection for a 2.36 inch rocket target and a 99% probability of detection for the M9A1 rifle grenade target.
- Based on the VSP results a transect spacing of 437 ft in MRS-05b is sufficient to result in a 97% probability of detection for a 37mm HEI target area and significantly better for the larger ordnance items.

**Table 3-1 VSP Calculation Table**

Ordnance	HFD in feet (radius)	Adjusted radius to evaluate the probability of two transects traversing the target	Number of background targets	Target density above background	Probability calculated from VSP for one transect to traverse and detect a target with the adjusted radius	Proposed Transect Spacing		
						MRS-01/02	MRS-05a	MRS-05b
M9A1 HEAT Rifle Grenade	709	354.5	5	50	99%	-	218	-
2.36in Rocket	790	395	5	50	99%	-	218	-
37mm HEI	911	455.5	5	50	97%	-	-	437
60mm Mortar Projectile	1322	661	5	50	99%	-	-	437

Note: Results based on the "high probability of traversing and detecting" a target with a single transect

The DGM procedures to be used during the RI include the GSV for system testing, standardization and QC. The DGM activities include: data acquisition, data processing, data interpretation, and data management. These DGM procedures follow the best practices and standards established by the USACE as outlined in DID MMRP-09-004, the USACE MMRP EM-1110-4009 (2007), the “Geophysical System Verification(GSV): A Physics-Based Alternative to Geophysical Prove-Outs for Munitions Response”, (ESTCP, 2009), and the August 2011

latest systematic approach to data acquisition and data QC using physics based alternatives to the geophysical prove-outs. The data processing and interpretation procedures follow the industry standard procedures for positioning, corrections, and interpretation of the DGM results. The equipment and procedures associated with each step are described in the following sections.

#### ***3.6.2.3.1 Equipment and Navigation and Mapping System***

InDepth will use the Geonics EM61-MK2A time-domain electromagnetic metal detector to perform the DGM operations. These systems will be coupled with a survey-grade RTK GPS will be used to position the data. Survey data will be spaced at the agreed upon intervals for each MRS throughout the accessible areas of the site. The EM61-MK2A will be operated on wheels with the coils oriented with the 1-meter axis perpendicular to line direction. The geophysical and positional data will be logged and stored together in one file. All geodetic coordinates will later be converted to UTM NAD83 coordinates in US survey feet.

#### ***3.6.2.3.2 Geophysical Equipment***

The primary geophysical equipment used during this investigation consists of the Geonics EM61-MK2A high-sensitivity metal detector. The EM61-MK2A is a time-domain electromagnetic induction metal detector capable of detecting both ferrous and non-ferrous metals. The EM61-MK2A system consists of an air-cored coil, a digital data recorder, batteries, and processing electronics. Two deployment options may be used during this investigation: a single-coil man-towed configuration and a single-coil machine-towed configuration. The arrangement for all coil systems is such that there is a vertical separation of 40 cm from the ground surface to the coil. The single-coil man-towed system will utilize the instrument manufacturer's standard deployment. The single-coil machine-towed system is deployed using a custom coil deployment platform designed to maintain the manufacturers 40 cm coil to ground surface separation when being transported with the UTV.

The EM61-MK2A generates a pulsed primary magnetic field that induces eddy currents in nearby metallic objects. When the current is eliminated, the decaying magnetic field from metallic objects induces a current in the receiver coils. The induced current is then measured at several specific time intervals (time gates) after the primary field is shut off. The secondary voltage from the decaying eddy currents can be measured at up to four different time gates

(256, 406, 706, and/or 1306 microseconds). Using the single-coil geometry the decaying eddy currents can be measured, by the same coil, at all four time gates to evaluate decay curve characteristics. The induced eddy currents dissipate rapidly in low conductivity materials (e.g. soils), but induced eddy currents persist for longer periods in high conductivity materials (e.g. metal objects). By making the eddy current measurement a relatively long time after termination of the primary pulse, the response is nearly independent of the conductivity of soil materials.

### ***3.6.2.3.3 Positioning Equipment***

Geophysical data positioning was accomplished using a Trimble 5700 GPS base station with TrimMark III radio and Trimble 5700 GPS Rover coupled to the geophysical equipment with the satellite receiver antenna mounted directly above the center of the EM61-MK2A coil. The RTK GPS positioning system is capable of providing centimeter-grade accuracy for the location of the sensor coils during data acquisition, and recording of site features. The RTK GPS will also be used for the stake-out of geophysical Targets of Interest (TOIs). The base receiver will be set up over a known “Class 1 Third Order” or equivalent control point or benchmark. If no such point exists, one will be established. The accuracy of the GPS rover and geophysical data depends partly on the accuracy of the base station location. Other factors such as nearby obstructions and time of day may affect the number of satellites visible to the GPS and thus the accuracy. Under ideal circumstances, accuracies of 3 cm horizontal and 5 cm vertical can be expected when 5 or more satellites are visible. Real-time corrections from the base GPS receiver are broadcast to the roving GPS unit via a radio link using a TRIMMARK 3 radio modem. This system provides positional updates at a rate of 1 Hertz. GPS location data will be collected in Geodetic Coordinates and then converted to NAD83UTM Zone 10 North coordinates in US survey feet.

In addition to the RTK positional recording equipment InDepth uses our proprietary real-time Visual Marking System (VMS). The VMS is an automated line marking system that sprays biodegradable marks on the ground surface marking the centerline of the DGM system during data acquisition activities for visual reference of where data were acquired. These ground surface markings are used to aid in positioning adjacent transects and are reviewed in the field immediately upon completion of each field investigation segment to assure complete data coverage for each area.

#### **3.6.2.4 Target Boundary Definition**

The proposed transects are designed using VSP and based on an evenly distributed transect approach. The transect spacing and location were subsequently reviewed based on the location of the suspected target areas, as depicted in the Draft Historic Map and Aerial Photo Analysis to ensure that the transects would cross the suspected target areas. The biasing of transects did not preclude areas outside the expected target areas.

Per discussion during the TPP process; a “radial-approach” using a combination of perpendicular transects and diagonal transects at the predicted boundary of the target area (defined by more densely distributed fragmentation / munitions debris) will be employed during the DGM survey. When the data from transects within a potential impact/target area reveals fragmentation, MD or MEC, the teams will perform the additional perpendicular and diagonal transects.

#### **3.6.2.5 Inaccessible Areas**

Per discussion during the TPP process; Bristol field teams will perform a “meandering path” survey with hand-held magnetometers in areas that are considered inaccessible to the existing DGM survey equipment but are still considered accessible to foot traffic. Bristol field teams will “mag and dig” potential anomalies / targets during the survey of inaccessible areas. Bristol field teams will produce comprehensive documentation (photographs, GPS points/boundaries, logbook entries, etc.) of all inaccessible areas.

Some inaccessible areas will be small enough to affect the distribution of the planned transects; however, they may not be large enough to warrant a separate “meandering path” survey. The location of all geophysical transects will be placed on a map and compared to the desired distribution pattern. In the event that the average path of a mapped transect deviates by greater than 20% of the planned transect spacing an evaluation for the cause of the deviation will be performed. In the event that the transect path falls in a critical location the resolution will be to either perform an additional intermediary transect, or perform a “meandering path” to obtain the desired information.

### **3.6.2.6 Data Processing**

Data processing and interpretation will be performed in accordance with the findings and results of the IVS. Pre-processing and initial positioning of data will be performed using Geonics Ltd DAT61MK2 v2.37 software. Preprocessed data consisting of correctly positioned and lag/latency corrected data will be provided in ASCII format.

Office data processing will be performed using Geosoft Oasis Montaj v7.2 UX-Detect and UX-Process software modules for QC evaluation, processing, and interpretation. In accordance with optimized site-specific procedures identified through the GSV findings the optimum processing parameters will be determined for the production DGM field data. Leveled data will be analyzed and targets selected based on the criteria of the project team. The initial target selection will be performed based on the results of the leveled channel 2 data using automated profile picking routines. Once the targets are selected the response for all of the channels will be evaluated and stored for further evaluation including; target size and summation response. The DGM interpretation will be verified on a daily basis by reviewing the results from the IVS. The TOIs may be further evaluated and prioritized using time-gate, time-constant, decay characteristics and target size to eliminate targets resultant of clutter items, instrument noise or non-metallic sources. These data will presented as color gradient maps of transect data, Geosoft database (.gdb) files of processed data for each data set, and .csv files of target lists.

QC data evaluation will be performed in accordance with the GSV standards and IVS requirements established by ESTCP. Additional QC evaluation will include the USACE performance requirements for DGM methods. These standards include static and reference item response, determination latency correction, sample spacing and foot-print coverage, dynamic detection repeatability, dynamic positioning repeatability, target selection and anomaly resolution. The data will be reviewed daily to verify adherence to the data quality standards. All data will be reviewed and checked for appropriateness and accuracy prior to demobilization to insure project completeness. Processed data and QC results will be provided to Bristol on a weekly basis.

### **3.6.2.7 Procedures**

The following procedures will be accomplished during each work day of the geophysical investigation:

- Daily Safety Meeting;
- Individual team tailgate safety meetings;
- Equipment set-up and warm-up, the EM61-MK2A will be warmed up for at least 10 minutes before use;
- Morning QC Checks;
- Acquire morning survey data;
- Change batteries as required;
- The EM61-MK2A will be warmed up for at least 10 minutes before use following lunch;
- Acquire afternoon survey data;
- Acquire afternoon QC checks;
- Download DGM data with QC checks; and,
- Equipment disassembly.

### **3.6.2.8 Personnel**

The geophysical data acquisition program will be managed by a qualified geophysicist. The qualified geophysicist will have a degree in geology, geological engineering, or a closely related field and a minimum of 5 years of directly related geophysical experience. A UXO Technician II or above will be present to provide avoidance during field activities.

### **3.6.2.9 Production Rates**

The proposed work week is four 10-hour days. It is estimated that the geophysical field team can map an average of approximately 5 miles per day based on a combination of the machine-towed single-coil and man-towed single-coil system, considering access and terrain associated with the site.

### **3.6.2.10 Measured Data Quality Objectives**

Testing in the IVS area (Section 2.1) will demonstrate the ability of the system to achieve the specific MQOs outlined in the following sections. The DGM system will not be used for site

surveys until it is able to meet the MQOs or until the project team agrees on reasoning behind a MQO not being met and an appropriate revised MQO is prepared.

#### ***3.6.2.10.1 DGM System Positioning***

The MQO for DGM systems positioning is that the coordinates being obtained from the positioning system are of sufficient accuracy to allow for appropriate relocation of MEC items for intrusive investigation. The measurement performance criterion for this is that the positional error at known monuments will not exceed  $\pm 10.2$  cm (4 inches). This will be evaluated by occupying and recording the position of a fixed survey monument on a daily basis such that the positioning system in use passes QC Test #2 (Record Sensor Positions).

#### ***3.6.2.10.2 Along-Track Sample Spacing***

The MQO for along track data density is to have sufficient data collected along each line to detect munitions items of interest. Industry experience has demonstrated that a data density of at least one reading every 0.66 feet is adequate to achieve this purpose. The measurement performance criterion is that at least 98 percent of possible sensor readings in a dataset are captured at 0.66 feet or lesser spacing between points. In addition, any unidentified data gap of 2 feet or greater does not meet the MQO. This will be evaluated using the embedded QA/QC modules within Geosoft's Oasis Montaj UX-Detect data processing and analysis program.

#### ***3.6.2.10.3 Cross-Track Line Spacing***

Because this is a single-pass transect-based RI/FS DGM investigation to evaluate nature and extent; a MQO for cross-track line spacing is not required.

#### ***3.6.2.10.4 DGM System Data Repeatability***

The MQO for DGM system data repeatability is that the system responds consistently from the beginning to the end of an operation. The measurement performance criterion is that the response to a standardized item will not vary more than  $\pm 20$  percent. This will be evaluated during the GSV by ensuring that, on a daily basis, the geophysical system being used passes QC Test #3 (Static Background and Static Spike). Additionally the response of the ISOs in the IVS will be recorded and evaluated by comparing it to the expected response from calculated NRL curves on a daily basis. The response for each ISO will be stored within a

project database to provide daily comparison and tracking to ensure that the response is not less than 20 percent below the documented average response anticipated for each ISO of concern.

#### ***3.6.2.10.5 Target of Interest Selection***

The MQO for target selection will be established from institutional knowledge, and published values for the response from the smallest ordnance item identified on this site (the 60-mm mortar and M9A1 rifle grenade for MRS-05 and the Mk2 hand grenade for MRS-01 and 02). The initial target selection criteria will be conservatively based on these values and the site noise characteristics. The initial target selection criteria will be verified during the excavation process. All targets greater than 1.5 times the root mean square noise threshold will be selected for consideration. These targets will be further evaluated based on the empirical results from the IVS and compared to the response levels of the ISO in their least favorable orientations. Finally, the geophysical results will be compared to published response values from the anticipated (or equivalent) ordnance items to further evaluate the anomalous responses. These processes are designed to meet the criteria identified in the IVS/GSV documentation for TOI; however, there may be need to investigate additional anomalies based on unanticipated geophysical signal. Further refinement of the initial target selection criteria may be performed as intrusive investigation data is acquired.

Table 3-2 Geophysical Survey MQOs, Metrics and Measurements

MQO	Metric	Measurement	Consequences of Failure
Static Response	Channel 3 Response < +/- 2.5 millivolts (mV)	Daily Standardization Test	Evaluate cause of failure: 1) if systemic identify faulty equipment and replace, 2) if transient identify source and eliminate if possible. Data set fails unless seed item is mapped with repeatable anomaly characteristics.
Reference Item Response	Channel 3 Response vary less than +/- 20% of the average value and vary less than < +/- 2.5 mV	Daily Standardization Test	Evaluate cause of failure: 1) if systemic identify faulty equipment and replace, 2) if transient identify source and eliminate if possible. Data set fails unless seed item is mapped with repeatable anomaly characteristics.
Standard Deviation of Background Noise	Channel 3 Response < 2 mV	Run Statistics on all data below a reasonable level	Evaluate cause of failure: 1) if systemic identify faulty equipment and replace, 2) if transient identify source and eliminate if possible.
Mean Acquisition Speed	≤ 3 miles per hour (mph)	Calculate velocity between adjacent points and run statistics on created velocity channel	Evaluate cause of failure to determine if reacquisition is required for the affected portion of the data. Dataset fails unless new max speed successfully demonstrated at IVS.

Target Positioning (including BSP activities)	Demonstrate reacquisition by reproducing all anomaly signals (reacquisition amplitude $\geq 75\%$ original TOI response and offset is $\leq 1$ m) or Test item anomaly characteristics (peak response and size) are repeatable and with $\pm 25\%$ amplitude variation and position offset is $\leq 1$ m.	Record the observed reacquisition instrument response at each target location and compare to selected/interpreted TOI response.	Evaluate cause of failure to determine:  1) if systemic; Lot submittal fails.  2) if localized; determine cause and make corrections.
Along-Track Sample Spacing	Along-track sample spacing should not exceed 0.66 ft. The Data acquisition rate will be selected such that 95% of the data in each transect will meet this spacing criteria	Run Statistics on the distance between adjacent points in each file	Evaluate cause of failure to determine if reacquisition is required for the affected portion of the data. Data set fails.
Cross-Track Lane Spacing	Cross-track lane spacing evaluation is not required during single pass transect based surveys	Not applicable	Not applicable.
IVS Response	Test item (in test strip or on transect) anomaly characteristics (peak response and size) repeatable with allowable variation $\pm 25\%$ or Fit coefficient over test strip is acceptable.	Repeat test strip once per system per lot or daily or 2 test items per system per lot.	Lot submittal fails.
Blind Seeding Program	The number of Blind Seeds selected as targets.	The number of Blind Seeds selected as targets equals the number of Blind Seeds emplaced.	Evaluate cause of failure: 1) if systemic recollect that portion of the affected data, 2) if localized determine if the cause and make corrections in the acquisition, processing, or interpretation methods as required, else Lot submittal fails.

### **3.6.2.11 Quality Control Tests**

Geophysical instruments will be field tested daily to ensure that they are operating properly. If the standard response cannot be attained, the instrument will be re-calibrated, repaired, or replaced. The following procedures will be conducted during the course of the project:

Warm-up time (a minimum of 5 minutes or until readings stabilize) each time the sensor is turned on.

DGPS will be checked at a known point once a day (reoccupation test) with day-to-day location offsets within +/- 4 inches (10 cm) of the known location (i.e., hub or other surveyed point).

A static background and static spike test will be conducted at the beginning and end of each day, during which readings will be collected for no less than 3 minutes. The data from the static test will be evaluated for consistency and repeatability. A standard response test will then be performed using a standardized reference item placed at a fixed location within the EM61-MK2A coils. Static background data will not vary more than +/- 2.5 mV peak to peak, and the response to the standardized reference item does not exceed +/- 20 percent of the expected value after background correction.

Personnel Tests will be conducted each time the sensor is assembled, typically at the beginning of the day. Response variation in the Personnel Tests will not exceed +/- 2 mV peak to peak.

Cable Shake tests will be performed each time the sensor is assembled, on a daily basis, and any time that a cable is replaced. Sensor signals will primarily be monitored for shake-induced data spikes. Response variation in the Cable Shake Tests will not exceed +/- 2 mV peak to peak. If data spikes are evident, a root cause analysis will be conducted by the geophysical subcontractor. Once the problem has been identified and corrected, the cable shake test will be repeated. Once the problem has been verified to have been corrected, geophysical operations may resume.

Data will be collected over the IVS test strip in multiple passes at the beginning of the project and after any equipment change. Single lines over the buried seed items will be run twice daily. Sensor response amplitude variations will not exceed +/- 20 percent of the drift corrected average response and positional variations will not exceed +/- 20 cm for each survey.

### **3.6.2.12 Data Processing, Correction and Analysis**

#### ***3.6.2.12.1 Initial Field Processing***

Initial evaluation of digital geophysical data will be performed in the field by the geophysical team using Geonics software for downloading and viewing of profile lines. Data will be reviewed for complete coverage and good data quality. Data will then be exported in an ASCII format to allow further evaluation and final processing, using Geosoft Oasis Montaj and UX-Detect. Once the data has been prepared and evaluated to ensure its integrity, it will be electronically transferred to InDepth's (Rohnert Park, CA or Golden, CO) office for final processing and QC evaluations.

#### ***3.6.2.12.2 Standard Data Analysis***

The primary geophysical data processing and interpretation software will be Geosoft's Oasis Montaj data processing package with the UX-Detect module. Geophysical data processing will include the following procedures:

- Conversion to appropriate Geodetic Coordinate System;
- Normalization or leveling (removal of background);
- Lag corrections;
- Digital filtering and enhancement, if applicable;
- Transect-based selection of target picks (above the established mV threshold); and,
- Preparation of geophysical maps and target lists.

Daily raw data packages will be zipped and placed on the secure project ShareFile site. Processed data (in Geosoft Database format) will be zipped and placed on the ShareFile site available for weekly review. Target/anomaly databases (in Geosoft Database format) will be zipped and placed on the ShareFile site available for weekly review. Finally, intrusive

target/anomaly databases (in MS Access format) will be placed on the ShareFile site available for weekly review.

### ***3.6.2.12.3 Anomaly Selection and Decision Criteria***

The anomaly selection criteria will be established at or slightly below the anticipated response of the potential ordnance items based on the channel 2 response values. In the event of relatively small items, the selection criteria may be established slightly above background noise levels to allow for detection of all possible ordnance items. Targets will be selected from these maps initially by running the data through Geosoft's UX-Detect module. Each of the anomalies selected by Geosoft as a target will be analyzed by trained geophysicists, and evaluated as to its validity and position. Targets found to be invalid or incorrectly located will be removed or adjusted. Additional, anomalies that were not selected by the UX-Detect module, yet deemed to represent a potential target, will be manually selected.

Transects with anomaly densities in excess of 200 targets per acre will be considered high density areas. In these areas additional intermediate transects may be added to further define the extent of the high density areas. The anomaly density value will be further defined based on site background levels and density of observed anomalies.

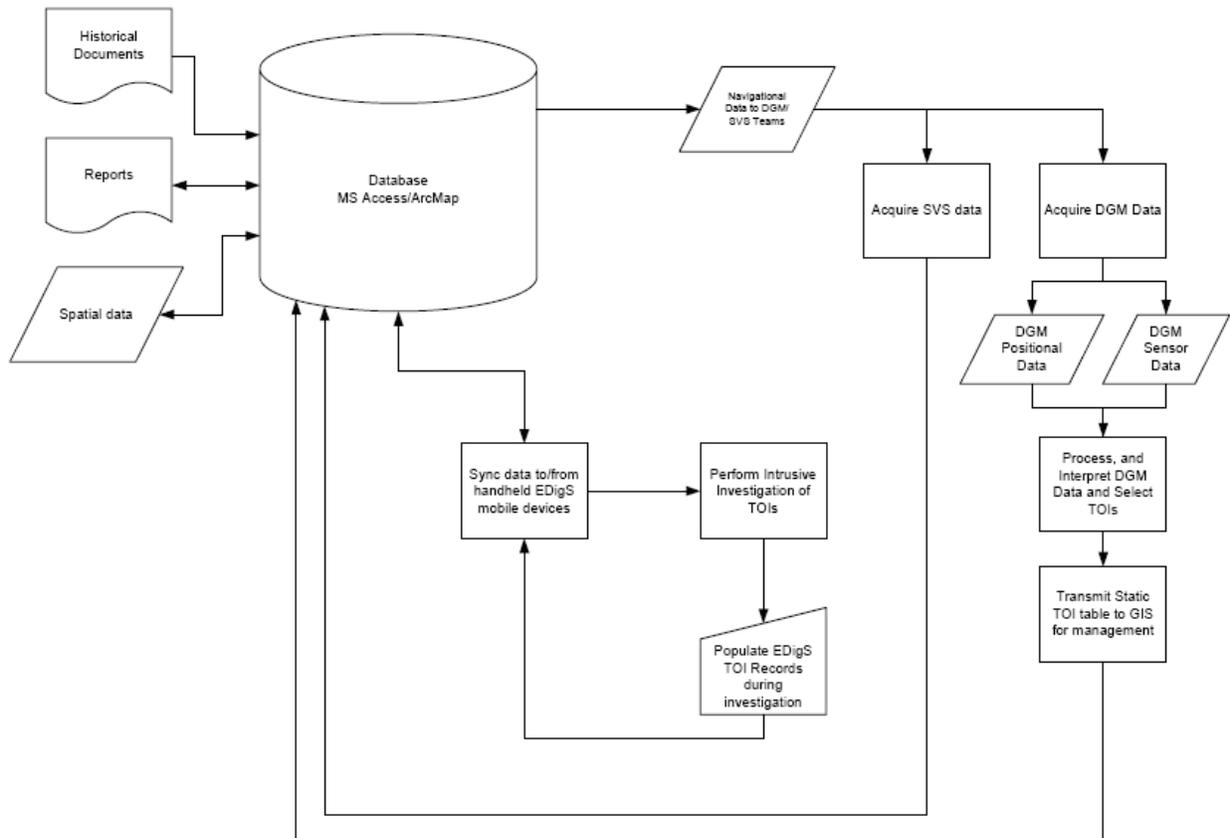
The criteria for selecting and locating anomalies for the target list include the following items:

- The maximum amplitude of the response with respect to local background conditions;
- The lateral extent (width) of the response;
- The 2-dimensional shape of the response;
- The location of the response with respect to the edge of the survey area, unsurveyable areas, land features, cultural features, or utilities within or adjacent to the survey area; and,
- The shape and amplitude of the response with respect to the response of known targets from equivalent items.
- The data required to perform anomaly selection and characterization will be stored in the TOI database and includes the following: target number, northing, easting, channel 1 through 4 response values, the summation of the response values, the target width, time-gate characteristics, time-constant, decay characteristics and dig priority.

### 3.6.2.13 Target List Development and MEC Data Management

The anomalies selected as geophysical TOIs within Oasis Montaj will be exported to a Microsoft Excel file for migration to the MS ACCESS Investigation Database. Each target on the list will be assigned a unique identification. Target lists will be developed on a transect-based system, sorted by peak amplitude response and named accordingly. The intrusive target dataset migrated to the Investigation Database will contain the following fields: Target identification number (key), Target Name, Transect location, Predicted northing (y), Predicted easting (x), Geophysical response based on the drift corrected channel 2 results in milliVolts (mV), dig priority, dataset and date. All TOI and MEC data will be managed in Access database and Arc GIS. A combination of InDepth's EDigS system with conventional paper dig sheets as backup will be used for field data capture. Figure 3.1 provides a flow diagram of the data management process.

**Figure 3-2 Data Management Flow Diagram**



### ***3.6.2.13.1 Field Data Collection***

Two methods of field data collection will be utilized; InDepth's EDigS system and conventional paper dig sheets as backup will be used to record the intrusive investigation results for the TOIs.

EDigS uses ruggedized Windows Mobile field computers running customized Visual CE data entry templates featuring pull-down menus to collect the field data electronically using touch-screen or keyboard entry methods. This electronic system works in practice much like paper dig sheets, but requires that all required information for each TOI investigated must be entered before the data record can be saved, ensuring completeness and standardization of captured data. Use of this standardized data system allows rapid synchronization of multiple EDigS mobile devices to the MS Access Investigation Database and eliminates transcription errors associated with the use of conventional paper dig sheets. Once migrated to the Investigation Database, the data is checked for gaps, errors, or inconsistencies, and managed spatially within the Project GIS.

Prior to fielding the CSLO EDigS devices, the data structure will be verified and the data entry templates will be updated with CSLO specific data. All EDigS devices will be tested prior to use by the dig teams. Prior to the intrusive investigation activities, all field personnel will be trained on the concepts and use of the EDigS system to create a fully integrated approach to the target investigation and data collection process.

Each morning, the data manager or assistant will ensure TOI investigation files (dig list) have been uploaded to the EDigS prior to distributing them to the appropriate dig team for use. MEC investigation data uploaded to the EDigS or included on the conventional paper dig sheet include the following:

- TOI Name;
- TOI Position (Northing and Easting); and
- TOI Response (mV).

The printed dig sheet method of data collection will be used as a backup method in the event there is an insufficient number of EDigS Devices or database administration personnel are unavailable to coordinate the setup of the devices before the start of daily field activities.

Data will be entered into the EDigS by first selecting the correct record in accordance with the flag number and second using the pull-down menus to enter all required data prior to saving the record. In addition to the manually entered data, EDigS automatically records the Device ID (Team), time and date for each record saved within the device.

Regardless of the recording method (EDigS or conventional paper dig sheets), the following data will be collected for each TOI investigated:

- Item Classification;
- Item Description;
- Orientation;
- Weight (lbs);
- Depth (inches);
- Team; and,
- Date Investigated.

Any issues concerning the entry of investigation data in the EDigS throughout the workday should be reported to the data manager immediately and conventional paper dig sheets should be used to record TOI information until the issue is resolved.

EDigS devices will be returned to the Database Administrator at the completion of each day's field activities for synchronization to the investigation database and for charging to ensure devices are prepared and ready for the next day's use. Upon receipt, the Database Administrator will synchronize each EDigS mobile device with the Project MEC Investigation database and review the downloaded data for completeness and accuracy. Any discrepancies noted will be discussed with the appropriate Dig Team the next morning.

#### **3.6.2.14 Quality Control Procedures**

All QC processes and procedures conducted independently, both in the field, and in InDepth's home office during the geophysical investigations, will be fully documented and made

available upon request. The QC documentation will also be included as part of the final reporting. While site-specific requirements may dictate site-specific processes and procedures, the following will be adhered to in all investigations to ensure quality data capture, processing, and interpretation and execution of quality workmanship:

All personnel conducting specific QC tasks will have the appropriate training and understanding of their responsibilities. Additionally, these personnel will have the authority to stop work and the organizational freedom to identify, evaluate, initiate, recommend or provide solutions, and approve corrective actions to ensure all work complies with stipulated contractual requirements.

A daily log will be maintained that will serve to document any instrument malfunction or other conditions that may adversely affect data quality or production. Field notes will be recorded during data collection in an effort to identify cultural items and any other pertinent information, in an effort to aid the offsite geophysical processor.

Field personnel will verify that equipment is operating properly and that data are repeatable. The Lead Field Geophysicist will be responsible for oversight of geophysical QC checks during fieldwork and will ensure that good field practices are employed.

Field personnel and data processors will verify positional accuracy and precision of location of the collected data. The geophysical subcontractor will be responsible for management and oversight of all QC data associated with post-processing and deliverables.

Data processors will ensure adequate coverage, completeness of data, and sufficient contrast between target and background response to identify significant geophysical anomalies in the data.

Internal QC procedures will be conducted during data processing to ensure data integrity. All personnel assigned to the project will ensure that all project MQOs are met. Quality management and implemented QCs will ensure that all geophysical investigation MQOs are met. Geophysical survey activities and data, both field and processed, will be reviewed in accordance with USACE DID MMRP-009-004. QC documentation will be available to the USACE Geophysicist through the ftp site discussed in Section 3.6.2.10.2. Available

documentation will include data coverage maps, static response graphs, IVS results and daily geophysical survey logs.

Per discussion during the TPP process; daily raw data packages will be zipped and placed on the ShareFile site to be accessed by the USACE geophysicist for review and Quality Assurance audits. Processed data (in Geosoft Database format) will be zipped and placed on the ShareFile site available for weekly review. Target/anomaly databases (in Geosoft Database format) will be zipped and placed on the ShareFile site available for weekly review. Finally, intrusive target/anomaly databases (in MS Access format) will be placed on the ShareFile site available for weekly review.

#### **3.6.2.15 Corrective Measures**

If any significant discrepancies exist in the positioning or repeatability of the data, the problem will be identified, resolved, and documented.

#### **3.6.2.16 Records Management**

InDepth will track and account for all field and processing information along with each data file from acquisition through delivery and final reporting in accordance with MMRP-09-004. All raw and processed survey data will be archived daily.

#### **3.6.2.17 Interim Reporting**

InDepth will report the status of geophysical mapping to the PM on a daily basis.

#### **3.6.2.18 Map Format**

All delivered maps will conform to the format specified in DID MMRP-09-004.

### **3.6.3 Geophysical Investigation Performance Goals**

The following three sections describe the performance goals of the geophysical investigation.

#### **3.6.3.1 MEC Detection**

A document released by the Naval Research Laboratory (Nelson, H.H., et al. EM61-MK2A Response of Standard Munitions Items, NRL/MR/6110-08-9155, October 6, 2008) charts the EM61-MK2A responses of various common ordnance types in most and least favorable

orientations and at various distances from the coil. These values will be used as a guide for evaluating the acceptable performance of the geophysical instrumentation, keeping in mind that site conditions and the physical condition of the object play a significant role in the ultimate detection depth. If MEC items are recovered from the field area that were not detected by the geophysical system, yet fall within the expected detection depth for that object, a root cause analysis will be performed to determine the reason for the non-detection. If the problem is determined to be with the geophysical system, appropriate corrective actions will be implemented and documented. Possible corrective actions may include reprocessing of the affected geophysical dataset, selecting additional targets within the affected data set or if deemed necessary recollecting the data from the existing dataset. Targeting thresholds will be established after DGM is performed at the IVS and in a small portion of the field area. With Bristol's concurrence, InDepth will define a defensible method for prioritizing target selections. This method shall involve the review of all data channels of the EM61-MK2A (decay curves, channel sums/averages, time constants, etc.) in an effort to accurately target MEC-related anomalies while reducing the number of non-MEC related geophysical anomalies. One channel will be selected for final leveling (leveling by hand) and for the generation of targeted response values.

### **3.6.3.2 Horizontal Accuracy**

Horizontally, 95 percent of all anomaly stake-out locations must lie within a 20 cm (8 in) radius of their original surface location as marked on the dig sheet. However, anomaly locations based on single pass transect data may be the result of large targets outside the sensor footprint. In this case the reacquired anomaly location may vary significantly from the documented anomaly location and will be evaluated on a case by case basis. All excavated items must lie within a 1 m (3.3 feet) radius of the surface location as marked in the field after stake-out.

### **3.6.3.3 False Positives**

If there are more than 15 percent "false positives" (anomaly locations that result in no detectable metallic material recovered during excavations, calculated as a running average), a reevaluation of the data, detection methods being utilized, and overall project QC will be

performed. Several factors will act to increase false positives potentially above 15 percent without meriting corrective action:

- Attempting to locate relatively small items with low amplitude responses as compared to noise; and,
- Site conditions, including mineralized soils that are known to create responses that closely mimic subsurface metallic objects.

A written response explaining the reason for the excessive “false positive” results and a corrective action plan, if appropriate, will be submitted within 10 days of identification of the situation.

### **3.6.4 Geophysical Mapping Data**

The following sections describe the management of the geophysical mapping data.

#### **3.6.4.1 Land Surveying and Mapping**

InDepth will use, if available, a previously established monument that meets the standards in DID MMRP-09-007, Section 1.

Geophysical mapping data will be provided in accordance with DID MMRP-09-004. After collection, the geophysical field data shall be provided in delineated fields as x, y, z, v (1), v(2), etc., for delivery. After completion of survey and processing activities, all geophysical data will be provided in ASCII XYZ format to include both raw, processed data and final target lists. The database and all final geophysical maps will be provided following completion of the field work. Maps that display the geophysical anomalies and identified physical features shall be delivered in both a PDF format and a spatially-referenced ESRI ArcView (9.x) Tiff format.

#### **3.6.4.2 Geophysical Data Analysis, Field Stake-out, and Reporting**

InDepth will provide anomaly target lists in Microsoft Excel format conforming to the format specified in USACE’s DID MMRP-09-004.

### **3.7 INTRUSIVE INVESTIGATION**

#### **3.7.1 General Methodology**

Subsurface investigations will be performed within surveyed areas on all anomalies selected by the Site Geophysicist. Geophysical targets will be staked out at the predicted locations determined during the data processing and interpretation. During the stake out process of the transect-based TOIs each target will be reacquired using the EM61-MK2A to accurately determine the along-track and cross-track location of the maximum response from the identified target. Intrusive investigation teams, equipped with a mini excavator, GPS, field computer and hand digging implements will conduct excavations. Intrusive investigation will be performed to depth at the specific stakeout flagged location and completion will be verified using an all-metals handheld metal detector (White's) within the radius of investigation. The intrusive results will be recorded in the EDigS program and will be reviewed on a weekly basis to evaluate the intrusive results for comparison with the geophysical information.

If the subsurface target is unable to be located, the data for undiscovered anomalies will be reviewed by the project geophysicist and the MEC team supervisor(s). If there are no clear surface sources (e.g., terrain, vegetation, cultural clutter), and the data at that specific site is determined critical to meet the appropriate QC DQO, the locations will be revisited with the original geophysical system to confirm anomalous response. If an anomaly is verified, the investigation will be to depth of detection.

Upon excavation, the intrusive investigation team will record the location, identification, and attributes of the excavated item (either manually on a dig sheet or electronically in a field computer). In the event that MEC other than those expected are encountered, the UXOSO will make the determination as to whether actions need to be taken to alter separation distances. The USACE OESS will be kept apprised in all such events.

MEC located during the subsurface search will be reported to the SUXOS. A description of all MEC, MD, and non-munitions related debris recovered will be recorded and incorporated into the project database. Recorded data will include, where possible, type/size, estimated weight, orientation, depth bgs, and description of the item excavated.

MD will be inspected and certified as free of reactive constituents prior to being placed in a lockable storage container.

After confirming that the item causing the anomaly was removed, excavations will be back filled and tamped. The excavation site will be returned as nearly as feasible to an undisturbed condition.

### **3.7.2 Accountability and MEC Records Management**

A detailed accounting will be made of all UXO items encountered during the RI activities. This accounting will include the nomenclature (if applicable) type, approximate weight or size, depth, orientation, condition, and location of the item indicated. The UXO Tech III (team leader) will record specific details regarding the material found, including (but not limited to), the following: specific nomenclature, type of fusing, condition, and external markings. The X, Y, and Z coordinates and disposition of the item also will be recorded. Each suspected UXO item encountered will be entered on the Daily Operations Summary.

The SUXOS will prepare and submit the Daily Operations Summary using the Daily Field Activity Report and/or disposal record. The SUXOS will provide copies of the Daily Operations Summary to the Bristol PM. The intrusive investigation data will be compiled on a weekly basis and sent to the Bristol PM and Bristol UXO Operations Manager for review. Excavated anomaly attributes will also be added to the project GIS database.

### **3.7.3 UXO Personnel Qualifications**

It is anticipated that three intrusive investigation teams will be utilized during the RI. A SUXOS, and/or UXOQC/UXOSO will be on the project site full-time during the field activities. In cases where the field team exceeds 15 persons, the UXOQC and UXOSO positions will no longer be combined. The qualifications for these personnel are included in Chapter 2, Technical Management Plan, and in Appendix H.

### **3.7.4 MEC Intrusive Investigation Locations**

UXO personnel will excavate subsurface geophysical targets identified as a result of the DGM and data evaluation effort, and picked for excavation by the project geophysicist. During the

field activities, revised field maps will be generated that illustrate the completed and yet to be completed intrusive investigations of selected anomalies.

### **3.7.5 MEC Intrusive Investigation Procedures**

#### **3.7.5.1 Subsurface MEC Investigation**

The equipment requirements for this activity include:

- Instrumentation including EM-61 MK2, hand-held gradiometers and all-metals detectors used to assist in the intrusive investigation of TOIs;
- Miscellaneous common hand tools (e.g., screwdrivers, digging implements);
- Mini-excavator; and,
- Field computers, forms and logbooks to record activities.

TOIs will be staked out using RTK GPS and the predicted location dug to depth. Hand held gradiometers and all-metals detectors will be used to refine the TOI during excavation and clear the hole upon completion. An EM61-MK2A will be on site and available for checking no-finds and aid in the refinement of targets when necessary. Each instrument will be checked daily at a standard location to ensure proper equipment function and operation.

#### **3.7.5.2 Surface Anomalies**

Surface anomalies are those with sources that are fully or partially exposed at the surface and that can be excavated using hand tools. These anomalies will be excavated by carefully removing the earth overburden using a hand shovel/trowel or other small digging implement. Throughout the excavation, the UXO Technicians will use the Schonstedt metal detector metal detector to check and verify the proximity of the anomaly source.

#### **3.7.5.3 Subsurface Anomalies**

Subsurface anomalies are those caused by sources located below the ground surface. Subsurface anomaly locations will be reacquired using Schonstedt or White's metal detectors. Manual and mechanical methods will be used to excavate subsurface anomalies. Manual methods include using digging tools to excavate the earth overburden in 6 inch lifts. After each lift, the anomaly location will be redefined with the Schonstedt or White's metal detector and the anomaly source sought using the hand tools. This process will continue until the

source of the anomaly has been uncovered and identified. When mechanical methods (mini excavator) are used to excavate the anomaly, the earth overburden will be removed in 3 to 6-inch lifts. After each lift, the anomaly location will be redefined with the appropriate metal detector and the anomaly source sought using hand tools. This process will continue until the source of the anomaly has been discovered and identified.

#### **3.7.5.4 MC Soil Sampling**

Soil sampling for MC will be performed at selected locations where visual and geophysical data indicate the presence of MEC and/or MD. Upon completion of the geophysical survey, Bristol will prepare a sample location map for review by USACE and applicable stakeholders. As the intrusive investigation progresses, some of the proposed sample locations may change based on subsurface discoveries. Additionally, pre- and post-detonation soil sampling will be implemented during the RI field data collection process at locations where a detonation of MEC is prescribed and conducted. These samples will be collected and analyzed to evaluate what, if any, contaminants may remain at project study areas as a result of the demolition of munitions in place and if they would contribute to an environmental hazard to site workers or the public. The SAP presents the procedures that will be used during the soil sampling process. The SAP can be found in Appendix E of this document.

Analysis of soil samples at CSLO will be limited to explosives constituents and the following four metals, based on TPP discussions:

- Lead;
- Copper;
- Antimony; and,
- Zinc.

Analysis of soil samples for explosive constituents will be based up the type of munitions found.

#### **3.7.5.4.1 Background Metals Survey**

No site-specific statistical evaluation of background metals concentrations has been performed in previous investigations. Two sources of information were used to roughly determine background metals concentrations at the site during the SI phase:

- Average soil concentrations of elements in San Luis Obispo County, California, identified by USGS (USGS 2006), and
- Analytical results of 2 ambient samples collected during the 2007 SI field activities within the FUDS boundary in areas outside the MRSs that are not expected to be affected by munitions activities; used in the absence of a San Luis Obispo County average concentration.

To provide an indication of the concentrations of metals naturally present at the site, two ambient samples were collected during the SI. Because only two ambient samples were collected, calculation of a more statistically robust site-specific background value is not possible. However, these ambient samples combined with the remainder of the SI samples and 5 planned background samples in the RI field program, should provide an indication of the range of naturally occurring metals concentrations. The RI samples will be compared to the range of naturally occurring concentrations. The SI samples were collected both inside and outside of the MRSs, and no MEC or MD was observed in the vicinity of the outside MRS sample locations, suggesting that they are likely representative of the naturally occurring soils in the area. Subsequent analysis of the samples during the SI did not detect any explosives.

The background metals survey to be conducted to determine the levels of select metals naturally occurring in the MRSs will include a suite of analytes limited to lead, copper, antimony and zinc. A total of 5 background surface soil samples are expected to be collected from 2 to approximately 6 inches bgs, and only from native soils. Background concentrations will be determined for surface soils by collecting samples from horizons comparable to those for the environmental samples. Sampling is discussed in Table 15-1 and Worksheets #17 and #18 of the MC SAP QAPP in Appendix E.

The background metals survey will be conducted at a location to-be-determined that is outside of the MRSs and has not been impacted by range operations activities.

### 3.7.6 Munitions with the Greatest Fragmentation Distance

Rockets, mortars, projectiles, and grenades have been identified as likely to be present within the MRS. An M1 105mm Projectile has been determined as MGFN for the project area based on known or suspected MEC within the study area. Prior to intrusive operations beginning, Bristol will establish and maintain exclusion zones (EZ) and team separation distances for this site. Figures with separation distances (Q-D arcs) are included in Appendix B.

### 3.7.7 Minimum Separation Distances

The Minimum Separation Distance (MSD) for intentional and unintentional detonations shall be as follows:

- **Unintentional Detonation** MSD for the public or non-essential personnel during MEC intrusive (subsurface excavations) operations at the project site will be the Hazardous Fragment Distance (HFD), MRS-05 the HFD will be based upon the M1 105mm Projectile; the HFD for this munition is 335 feet. The team separation distance for this munition is 72 feet; and,
- **Intentional detonation** MSD will be the maximum fragment distance of 1886 feet, unless reduced by DDESB-approved engineering controls (sand bag mitigation) at a measurement of 24 inches in every direction as determined by the Explosive Site Plan (ESP) for this site, then the maximum fragment distance will be reduced to 200 feet.

Further details concerning the MSD calculations for MRS-05 are provided in the ESP.

The specified EZ distance will also be enforced during intrusive operations. The purpose of the EZ is to protect the public and other personnel not engaged in intrusive activities from potential blast hazards. The EZs will be marked by signs and/or barriers and enforced at access points and high traffic areas when necessary. Only authorized essential personnel will be allowed in the EZ during intrusive investigations. It is understood that the EZ will move around the site, as each point is investigated intrusively.

Any reduction of the specified MSD/EZ distance must be in accordance with the DDESB guidelines.

### 3.7.8 MEC Identification

Any suspected or known UXO/MEC encountered during excavation will be clearly marked and its position noted on the anomaly dig sheet and other appropriate site maps. The UXO

Team Leader (UXO Technician III) will evaluate the item found and report the condition of the item to the SUXOS. No UXO/MEC will be moved without positive identification of the item and evaluation of its condition. No UXO/MEC identified for destruction will be removed from its location without coordination between the SUXOS and UXOSO. Both the SUXOS and the UXOSO must concur that the item may be moved.

### **3.7.9 MEC Removal**

If the excavated anomaly is considered to be UXO, it shall be uncovered sufficiently to obtain a positive identification of the item. If the item is identified as UXO, a determination will subsequently be made as to whether it is acceptable to move. A determination on moving and disposal of UXO will be made by the SUXOS and UXOSO for each occurrence. UXO items that are deemed safe to move may be moved closer to other UXO items in order to facilitate economical use of detonation cord. Items will be spaced sufficiently apart so as not to constitute a higher net explosive weight (NEW) or require an EZ recomputation, if possible. If circumstances are such that an EZ recomputation is necessary, TP-16 guidance will be followed. Any UXO item deemed unacceptable to move will be BIP. BIPs will be conducted in a manner that minimizes impacts to surrounding habitat and wildlife, including direct impacts and disturbance impacts. If the UXO cannot be safely disposed under existing conditions the Bristol PM and USACE OESS will be notified. In no case shall the SUXOS or the UXOSO authorize or undertake destruction of UXO when there is sufficient reason to believe that the disposal action will result in property damage. In cases where protective measures are necessary, Bristol will use the Buried Explosions Module (BEM) from TP-16 sandbag mitigation method.

MC sampling will be performed for MC listed in Section 3.7.5.4.1 prior to and following the BIP to evaluate potential impacts to surrounding soils. Excavation and detonation sites will be back-filled to the approximate grade of the surrounding soil.

### **3.7.10 MEC Storage**

Storage of MEC is not authorized for this project. In the event MEC cannot be disposed of during work hours, arrangements will be made to provide security to prevent unauthorized access to the MEC until it can be destroyed.

### **3.7.11 MEC Disposal**

All MEC items and munitions-related material containing explosives will be disposed by detonation. The following sections describe the procedures to be followed during demolition. Demolition procedures are also detailed in the Demolition SOP. All MEC demolition will be recorded in MEC item accountability log. A log of these items will be maintained from discovery through demolition; documenting proper disposal. MEC Accountability Log can be found in Appendix F.

#### **3.7.11.1 General Procedures**

During disposal of MEC, safety is the primary concern. The most obvious requirements are to protect personnel, the public, and the environment from fire, blast, noise, fragmentation, and toxic releases. In the event demolition of recovered MEC is necessary, the Bristol demolition team leader will contact the local explosives distributor for the delivery of the type and quantity of demolition material per procedures outlined in Chapter 5 Explosive Management Plan. The SUXOS and Bristol demolition team leader will record usage data of demolition material and the nomenclature and quantities of MEC destroyed. The SUXOS will be responsible for demolition oversight and for maintaining the required records.

The fire department will be notified a minimum of 24 hours prior to any scheduled demolition operation. During dry conditions (as determined by the fire department) demolition operations will be conducted in the morning hours prior to 10:00 am and the disposal site area may require wetting in order to help mitigate fire potential. Sand bag mitigation with a water tarp may also be opted for as a means of fire mitigation.

MEC will only be detonated after positive identification. Bristol prefers to use a NONEL (shock tube) firing system for initiating detonations as it provides ease of set up, a high level of reliability and positive control of the detonation event. Electrical initiation (to include remote/wireless firing systems) is the next preferred method as it provides positive control of the detonation event. Non-electrical (time fuze) is the least desirable method of initiation as positive control of the detonation event is not maintained, it present an additional fire hazard and requires a long wait time for clearing of a misfire.

Demolition operations, when required, will be conducted on the last scheduled day of the work cycle. At the point in time that a MEC item has been located on site security will be provided during all non operational hours until the item has been disposed of. The UXOSO is responsible for determining whether minimum safe conditions to conduct demolition operations are met.

### **3.7.11.2 MEC**

All personnel directly or indirectly engaged in MEC operations are thoroughly trained and capable of recognizing hazardous explosive exposures. All personnel are required to read, become familiar with, and adhere to the requirements contained in this WP and the project APP to ensure that all general safety regulations and safe work practices are observed at all times. Absence of a written safety requirement does not indicate that safeguards are not required. All demolition/disposal operations will be conducted in accordance with these procedures and the procedures outlined in Chapter 5, Explosive Management Plan.

All UXO subcontractor personnel engaged in MEC demolition activities will follow these procedures. However, situations may warrant additional safety measures, such as fire trucks, medical personnel, and protective clothing. The UXOSO have the overall responsibility to comply with the minimum requirements listed below and has the authority to upgrade as the situation dictates.

Demolition operations will not begin until all non-essential personnel are outside of the MSD established for the ordnance or consolidated shots being detonated, in accordance with EM 385-1-97 and its' referenced documents. MEC that cannot be moved must be BIP.

While the SUXOS maintains overall responsibility for all field activities, the UXO Demolition Team Leader will coordinate specific demolition activities such as preparing explosive set-ups for use, demolition team personnel task assignment, and explosives placement. The UXOSO shall be responsible for site-specific training of field personnel regarding the nature of the materials handled, the hazards involved, and the precautions necessary, and shall be present during all on-site disposal operations. The SUXOS shall ensure that the appropriate local authorities are notified prior to on site demolition.

Prior to initiation of demolition operations, all personnel will be evacuated to a distance outside the MSD of the MEC being detonated. This distance may be adjusted downwards based on approved engineering controls. Prior to priming of demolition charges, all avenues of ingress will be physically blocked by project personnel. Radio communications will be maintained among all concerned parties. Avenues of ingress will not be opened without the express permission of the UXOSO. A constant state of vigilance must be maintained by all personnel to detect any intrusion into the MSD. An observer will be stationed at a location where there is an unobstructed view of the air and surface approaches to the demolition site. It shall be the responsibility of the observer to notify the SUXOS to suspend firing if any aircraft, vehicle, or individuals are sighted approaching the general demolition site. The UXOSO will assure the area is clear of unauthorized personnel and equipment prior to permitting attachment of the initiation devices to the priming charge.

A minimum of two UXO-qualified personnel, one of whom will be a UXO Tech III, will conduct demolition operations. Bristol's preferred method of firing demolition charges is with NONEL (shock tube). The SUXOS in conjunction with the UXOSO will decide which firing system is suitable for the specific task to be accomplished. Control of initiation devices will remain with the UXOSO until attachment to the firing circuit.

The following notifications will be made a minimum of 24-hours prior to conducting any demolition activity: on-site USACE OESS, FAA, local fire department, local police, and stakeholders located in or adjacent to, the MRS where the demolition activity will occur. The fire department will be alerted to stand by during demolition operations. In the event of a fire site personnel will not attempt to extinguish the fire. Site personnel will immediately evacuate the site to beyond the MSD and notify appropriate stakeholders.

Engineering controls for blast and fragment mitigation may be required for destruction of specific MEC items. A copy of the "Use of Sandbags for Mitigation of Fragmentation and Blast Effects due to Intentional Detonation of Munitions" will be available at the site office.

Transportation of MEC and explosives will comply with all federal, state, and local regulations. Transportation of explosives and MEC on site is discussed in detail in Chapter 5 Explosives Management Plan.

Prevailing weather condition information will be obtained from a reliable source such as the National Weather Service; this data will be logged before each on site detonation. Demolition charges will not be primed or connected for electrical firing during the approach or presence of a thunderstorm. Other weather conditions (high winds, dust storms, temperature inversions, low-altitude clouds, or cloud coverage of more than 50%) may adversely impact planned demolition operations. The SUXOS will consider these conditions when determining whether or not to conduct demolition operations. If weather conditions preclude the disposal, UXO personnel will secure the UXO with sandbags, and cover and properly mark the area until favorable conditions allow the demolition.

Upon completion of disposal operations, the disposal team supervisor and the UXO technician will visually inspect each disposal shot. The disposal team supervisor will perform a visual inspection of the disposal site(s). The second person will stand by at a safe distance and be prepared to render assistance in the event of an emergency. Upon completion of this inspection, and providing that there are no residual hazards, the SUXOS will sound the “all clear” authorizing the resumption of site operations.

### **3.7.11.3 MPPEH**

The following procedures by personnel categories will be followed during the inspection of MPPEH and MD recovered during the RI/FS:

- UXO Technician I will only tentatively identify a located item as MD or MEC
- UXO Technician II will inspect each item as it is recovered and determine the following:
  - Is the item a UXO or a component of military munitions?
  - Does the item contain explosives hazards or other dangerous fillers?
  - Does the item require detonation?
  - Does the item require demilitarization or venting to expose other dangerous fillers?
  - Does the item require draining of engine fluids, illuminating dials and other visible liquid HTRW materials?
  - Segregate items requiring demilitarization or venting procedures from those items ready for certification; and,
  - Items found to contain explosives hazards or other dangerous fillers will be processed as MEC and disposed of in accordance with the ESP.

- UXO Technician III will:
  - Inspect recovered items to determine if free of explosives hazards or other dangerous fillers and engine fluids, illuminating dials, and other visible liquid HTRW materials;
  - Supervise detonation of items found to contain explosive hazards or other dangerous fillers and venting and demilitarization procedures; and,
  - Supervise the consolidation of recovered scrap metal for containerization and sealing.
  
- UXOQC will:
  - Conduct daily audits of the procedures used by UXO teams and individuals for processing MPPEH or MD;
  - Perform and document a minimum 10% random sampling (by pieces, volume, or area) of all scrap metal collected from the various teams to ensure no items with explosive hazards, engine fluids, illuminating dials, and other visible liquid HTRW materials are identified as scrap metal, as required for completion of the Requisition and Turn-in Document, DD Form 1348-1A (Appendix F);
  - Ensure the specific procedures and responsibilities for processing MPPEH and MD for certification as scrap metal is being followed, performed safely, consistent with applicable regulations, and in accordance with this USACE-approved WP; and,
  - Will perform random checks of processed MPPEH and MD to ensure that items being identified as scrap are free from any explosive hazards engine fluids, illuminating dials, and other visible liquid HTRW materials.
  
- SUXOS will:
  - Be responsible for ensuring work and QC Plans specify the procedures and responsibilities for processing MPPEH and MD for final disposition as scrap metal;
  - Ensure a Requisition and Turn-in Document, DD Form 1348-1A (Appendix F) is completed for all scrap metal to be transferred for final disposition;
  - Perform random checks to satisfy that the MPPEH or MD is free from explosive hazards necessary to complete the Form DD 1348-1A;
  - All scrap metal generated from MPPEH or MD is certified as free of explosive hazards, engine fluids, illuminating dials and other visible liquid HTRW materials; and,
  - The inspected materials are secured in a closed, labeled, and sealed container and documented as follows:
    - The container will be closed and clearly labeled on the outside with the following information: the first container will be labeled with a unique identification that will start with USACE/MRS-01, MR-02, MRS-05a or MRS-05b/Bristol/0001/Seal's unique identification and continue sequentially;

- The container will be closed in such a manner that a seal must be broken to open the container. A seal will bear the same unique identification number as the container or the container will be clearly marked with the seal's identification if different from the container.

A documented description of the container will be provided by Bristol with the following information for each container: contents, weight of container; location where MD scrap was obtained; name of contractor and names of certifying and verifying individuals; unique container identification; and seal identification, if required. Bristol will also provide these documents in the RI/FS report.

#### **3.7.11.4 Munitions Debris Certification and Verification**

Bristol will ensure that scrap metal generated from the intrusive investigation is properly inspected in accordance with the procedures outlined below. Only qualified UXO personnel will perform these inspections. The SUXOS will certify, and the UXOQC will verify, that the scrap metal is free of explosive hazards.

DID form 1348-1A will be used as certification /verification documentation. All DD 1348-1A forms must clearly show the typed or printed names of the contractor's SUXOS and the USACE OESS organization, signature, and contractor's home office and field office phone number(s) of the persons certifying and verifying the scrap metal.

- Upon receiving the unopened labeled containers each with its unique identified and unbroken seal ensuring a continued chained of custody, and after reviewing and concurring with all the provided supporting documentation, the receiving facility will sign for having received and agreeing with the provided documentation that the sealed containers contained no explosive hazards when received. This will be signed on company letterhead and stating that the contents of these sealed containers will not be sold, traded or otherwise given to another party until the contents have been smelted and are only identifiable by their basic content;
- Local directives and agreements may supplement these procedures. Coordination with the local concerns will identify any desired or requested supplementation to these procedures;
- In addition to the data elements required and any locally agreed to directives, the DD 1348-1A must clearly indicate the following for scrap metal;
  - Basic material content (type of metal; e.g., steel or mixed);

- Estimated weight;
- Unique identification of each of the containers and seals stated as being turned over;
- Location where MD was obtained; and,
- Seal identification, if different from the unique identification of the sealed container.

The following certification/verification will be entered on each DD 1348-1A for turn-over of scrap and will be signed by the SUXOS and the USACE OESS.

*“This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, is free of explosive hazards, engine fluids, illuminating dials and other visible liquid HTRW materials.”*

### **3.7.11.5 Maintaining the Chain of Custody and Final Disposition**

Bristol, in coordination with the USACE, will arrange for maintaining the chain of custody and final disposition of the certified and verified materials. The certified and verified material will only be released to an organization that will send notification and supporting documentation to Bristol documenting the seal containers have been smelted and are now only identifiable by their basic content.

If the chain is broken, the affected MPPEH must undergo a second 100 percent inspection, a second 100 percent re-inspection, and be documented to verify its explosives safety status (MD or RD). Material that has been documented as safe is no longer considered MPPEH as long as the chain of custody remains intact. A legible copy of inspection, re-inspection and documentation must accompany the material through final disposition and be maintained for a period of three years.

This documentation will be incorporated by Bristol into the final report as documentation for supporting the final disposition of this scrap metal.

### **3.7.12 Disposal Alternatives**

MEC will be disposed of by detonation on-site.

### **3.8 INVESTIGATIVE DERIVED WASTE**

The Investigative-Derived Waste (IDW) Plan will be used to detail requirements for handling and disposing of IDW. A draft letter report will be prepared for the USACE CO recommending the appropriate disposal actions and treatment for any IDW generated by this project. Regulatory acceptance of this IDW Plan will be obtained prior to field mobilization.

All IDW will be packaged in accordance with the applicable California and Federal laws and regulations. Packaging will ensure segregation of material (if necessary) for transportation and ultimate disposal of the IDW. Any IDW generated during the RI will be disposed at a permitted solid or hazardous waste, as appropriate.

The personnel and equipment necessary to package, label, manifest, transport, and dispose the IDW will be provided by Bristol, as necessary. USACE will designate the point of contact for signature of the hazardous waste manifest.

All licenses and permits required for compliance with applicable Federal, California, and local laws, codes, and regulations will be obtained prior to collections and containerization of IDW. All work will be accomplished in strict accordance with such licenses and permits.

All methods used to ship or transport IDW will be in accordance with applicable U.S. Department of Transportation (DOT) Hazardous Material Regulation 49 CFR 100-199. All required hazardous waste manifests will be prepared by an appropriately trained and certified shipping agent or specialist. The manifests will include a correct, complete, and legible description of all wastes to be shipped.

### **3.9 RISK ASSESSMENT AND ANALYSIS**

The MEC Hazard Assessment (MEC HA) and the Munitions Response Site Prioritization Protocol (MRSPP) will be used to evaluate MEC hazards at the CSLO MRS.

#### **3.9.1 Munitions and Explosives Hazard Assessment**

In October 2008, the Technical Working Group for Hazard Assessment, which includes representatives from the DoD, Department of the Interior, EPA, and state regulatory officials, produced the technical reference document *Interim Munitions and Explosives of Concern*

*Hazard Assessment Methodology.* The MEC HA was designed to be used as the CERCLA HA methodology for MRS where there is an explosive hazard from the known or suspected presence of MEC. The MEC HA is structured around three components of a potential explosive hazard incident:

- Severity, which are the potential consequences (e.g., death, severe injury, property damage, etc.) of a MEC item functioning.
- Accessibility, which is the likelihood that a receptor will be able to come in contact with a MEC item.
- Sensitivity, which is the likelihood that a receptor will be able to interact with a MEC item such that it will detonate.

Each of these components is assessed in the MEC HA by input factors. The sum of the input factor scores falls within one of four defined ranges, called hazard levels. Each of the four hazard levels reflects site attributes that describe groups of site conditions ranging from highest to lowest hazards. The MEC HA hazards levels are:

- Hazard Level 1 – Sites with the highest potential explosive hazard. There may be instances where there is an imminent threat to human health from MEC.
- Hazard Level 2 – A site with surface MEC or intrusive activities that would encounter MEC in the subsurface and the site has moderate or greater accessibility by the public.
- Hazard Level 3 – A site that would be considered safe for the current land use without further munitions responses, although not necessarily suitable for reasonable anticipated future use. Level 3 areas generally have restricted access and low number of contact hours and typically MEC only in the subsurface.
- Hazard Level 4 – A site compatible with current and determined or reasonably anticipated future use. Level 4 typically have had a MEC cleanup performed.

The MEC HA does not directly address environmental or ecological concerns that might associated with MEC, nor does it address the criteria of cost. The MEC HA guidance document includes an Automated Excel Workbook, which aids in the development of site scoring through standardized input and formulas. The automated workbook will be used to provide the MEC HA score. Results of the HA scoring summary will be provided in a summary table.

### **3.9.2 Munitions Response Sites Prioritization Protocol**

MRSPP ranking will be completed for the CSLO MRSs based on information obtained during the SI and RI field sampling/survey programs. The MRSPP rankings are used by the DoD to prioritize sites for further actions. In general, the lower the numerical ranking, the higher priority the site is given. In compliance with 32 CFR § 179.5, stakeholder input will be considered before finalizing the MRSPP score(s) for the MRSs included in this RI. All MRSPP worksheets will be included and a summary table will be provided of the MRSPP priority rankings for the MRSs investigated at CSLO.

### **3.10 ANALYSIS OF INSTITUTIONAL CONTROLS**

Institutional Analysis and an Institutional Control Plan is not planned for this project.

### **3.11 RECURRING REVIEW PLAN**

A Recurring Review Plan is not planned for this project.

(Intentionally blank)

## **4.0 QUALITY CONTROL PLAN**

### **4.1 INTRODUCTION**

This QCP has been prepared by Bristol, as a control mechanism for the execution of a RI/FS at the project site. The work includes the following:

- Planning;
- Geophysical survey;
- Intrusive investigation;
- MC Sampling;
- Management of MEC and/or MD; and,
- Reporting.

### **4.2 SITE SPECIFIC QUALITY CONTROL PLAN**

This QCP describes the quality management procedures to be followed during the RI/FS at CSLO. Site-specific information includes, but is not limited to, project personnel, definable features of work (DFW), required control operations, equipment tests, specific equipment calibration / response check procedures, audit procedures, and lessons learned. Upon acceptance of this site-specific QCP, Bristol will notify the USACE CO or Contracting Officer's Representative (COR) in writing, using a field change form, a minimum of 7 days prior to implementing proposed changes. Proposed changes will be subject to acceptance by the USACE CO or COR and the Bristol QC Manager.

### **4.3 QUALITY CONTROL ORGANIZATION**

Bristol employees assigned to this project will be expected to comply with the requirements of this QCP and Bristol Corporate QA/QC policies maintained in the field office.

#### **4.3.1 Responsibilities and Authority**

##### **4.3.1.1 Project Manager**

The PM is responsible for ensuring project tasks are completed on schedule and within budget, recommending and justifying project modifications, implementing methods of tracking materials and resources, complying with normal safety procedures and regulatory

requirements. The PM will track and report exposure hours on a weekly basis through daily reports.

#### **4.3.1.2 Senior Unexploded Ordnance Supervisor**

The SUXOS is responsible for management of MEC and explosive operations. He will report directly to the PM. In addition, the SUXOS will be responsible for overall planning and compliance with safety and health activities. He will conduct or designate the daily safety meetings to a competent individual and address worker safety concerns. He will be responsible for communicating safety issues and concerns, and reporting safety incidents to the Bristol PM.

#### **4.3.1.3 Unexploded Ordnance Safety Officer**

The UXOSO for this project reports directly to the PM, and oversees all safety and health aspects of this contract. He will coordinate all daily activities with the PM/SUXOS. The UXOSO will have the following responsibilities:

- Has ***STOP WORK*** authority for safety and health reasons;
- Completing Personnel Data Sheets on all site personnel;
- Implementing and enforcing the APP and SHSP, and reporting safety violations to the PM and other appropriate personnel;
- Establishing work zones and controlling access to these zones;
- Confirming all contractor and subcontractor personnel's suitability for work, based upon OSHA and site-specific medical and training requirements;
- Conducting daily General Safety Briefings as SUXOS designate when appropriate;
- Implementing and documenting the Site-Specific Hazard Information Training Program (as specified by 29 CFR 1910.120);
- Ensuring proper condition, maintenance, storage, and use of PPE;
- Consulting with the Corporate Safety and Health Manager prior to downgrading or altering monitoring or PPE requirements;
- Assisting in the continued development of the SHSP and other safety and health procedures;
- On-site enforcement of the Alcohol/Drug Abuse Policy;
- Investigating accidents/incidents and "near misses";
- Conducting visitor orientation;

- Enforcing the “buddy” system;
- Conducting and documenting daily safety inspections, and weekly safety audits;
- Maintaining and calibrating safety monitoring equipment, and documenting calibration data in the monitoring or safety log;
- Restricting site personnel from site activities if they exhibit symptoms of alcohol, drug use, or illness, and continually monitoring site personnel for signs of environmental exposure or physical stress;
- Maintaining the site safety and monitoring logs;
- Acting as the On-Scene Incident Commander (OSIC) in the event of an emergency, and notifying and coordinating off-site emergency and medical response agencies;
- Posting the descriptions and maps associated with hospital and emergency evacuation routes;
- Conducting on-site safety orientation and operational reviews. The orientation and review will be accomplished during the first working day at the project site; and,
- Maintaining an alternate line of communication with the Safety and Health Manager.

#### **4.3.1.4 Unexploded Ordnance Quality Control Officer**

The UXOQC reports directly to the PM and coordinate daily activities with the SUXOS. The UXOQC may be dual tasked to fill the UXOSO position if there are 15 or less personnel on site.

The UXOQC has the following responsibilities:

- Reviewing, implementing, and enforcing the QC plan;
- Coordinating with the geophysical survey sub contractor QC representative ensuring QC requirements, objectives and goals are being met;
- Coordinating with the Government’s QA representative to ensure QC objectives are appropriate for the task being performed;
- Coordinating with the Bristol QC Manager to ensure QC procedures are appropriate in demonstrating data validity sufficient to meet QC objectives;
- Conducting QC inspections and audits of documents, work in progress, work performed, and monitoring. Recording and reporting the results to the appropriate personnel;
- Recommending to the SUXOS any actions to be taken in the event of a QC failure;
- Advising the SUXOS on all QC related site matters;

- Reporting non-compliance with QC criteria to the SUXOS, the Bristol QC Manager, and PM; and,
- Has **STOP WORK** authority for issues regarding QC at the project site.

#### **4.3.2 Personnel Qualifications and Training**

Project staff shall be qualified to perform their assigned jobs. This will be accomplished by:

- Establishing and enforcing minimum qualification requirements for key positions, and
- Verifying initial and continued proficiency, and implementing a formal training program.

#### **4.4 QUALITY MANAGEMENT SYSTEMS**

The overall effectiveness of the QC program for this project depends on all field activities, i.e. DGM process, surface/subsurface sweeps/clearances, target removal/replacement, range-related debris inspection, etc., being conducted in accordance with the WP. This allows for/ensures precision and accuracy of analyses. A specifically accurate and successful program is achieved by detecting errors and preventing their recurrence, and by measuring the degree of error that is inherent in the activities and procedures being conducted. To ensure effectiveness, coherence, and integrity for all activities, the UXOQC, SUXOS, UXO Technicians, Sampling Technician, and PM will work closely together during all aspects of the fieldwork to monitor and document the procedures conducted in accordance with this WP. The routine UXO QC procedures to be employed during the project are detailed in this chapter of this WP.

##### **4.4.1 QC Management**

The Bristol corporate QC manager is responsible for the QC programs and reports directly to the company presidents. The overall responsibility for implementing and overseeing QC activities in the field for this project is with the Bristol PM. The PM is responsible for the compilation of all QC documentation during field activities. Incorporated into these are the responsibilities of the SUXOS who oversees all site activities and ensures the timely submission of all relevant contract deliverables. The specific QC of field UXO operations rests with the UXOQC, who coordinates with the SUXOS for daily operations. The UXOQC

will maintain a direct line of communication with the Bristol corporate QC manager. The UXOQC will interface with the geophysical survey QC representative.

#### **4.4.2 Phase Control Process**

The UXOQC is responsible for verifying compliance with project requirements through implementation of the three-phase control process. This process ensures that project activities comply with the approved plans and procedures. The specific QC monitoring requirements for the DFW are discussed below.

##### **4.4.2.1 Implementation of the 3-Phase Control**

The UXOQC is to ensure that the three-phase control process is implemented for each definable feature of work, regardless of whether it is performed by Bristol or its subcontractors. Each control phase is important for obtaining a quality product. However, the preparatory and initial inspections are particularly valuable in preventing problems. Production work is not to be performed on a definable feature of work until a successful preparatory and initial phase inspection has been completed.

Elements of the three-phase control process are: 1) Preparatory Phase; 2) Initial Phase; and 3) Follow-Up Phase. This process is carried out using checklists developed by the UXOQC. Checklists should be developed by reviewing the WP, QCP, quality objectives, and other documents relevant to the project. The 3-Phase control process will be documented on the QC Daily Report.

The UXOQC, PM, SUXOS, UXO Technicians, Sampling Technician, and other key personnel must work together to ensure project objectives are being achieved. The UXOQC is the eyes and ears of the PM and must communicate observations to the PM on a regular basis. This may be accomplished during staff meetings, project QC meetings, surveillance reports, QC reports, and other means.

##### ***4.4.2.1.1 Preparatory Phase***

Preparatory phase inspections are performed prior to beginning a definable feature of work. The purpose of the inspection is to review applicable contracts, plans, specifications, SOP's, and other applicable documents, and verify that necessary resources, conditions, and controls

are in place before work starts. This review is conducted with the people responsible for performing the work to include managers, supervisors, and workers ensuring all involved know what is expected and understand their role. The PM is responsible for ensuring that:

- Appropriate plans and procedures are developed, coordinated, and approved;
- Personnel required for the activity are identified and positions filled;
- Training has been identified and completed;
- Preliminary work and coordination has been completed;
- Equipment and materials required to perform the activity have been identified and is available; and,
- Reviews have been performed.

The UXOQC is responsible for assisting the PM in conducting preparatory phase inspections and verifying the following conditions:

- Appropriate plans and procedures have been developed, approved, reviewed, and are available;
- Personnel identified are available and meet the requirements/qualifications for the position or waivers from the client have been obtained;
- Required training has been performed and acknowledged;
- Preliminary work and coordination have been completed;
- Equipment is on-hand, functional, properly calibrated, and appropriate for the job;
- Material and supplies are on-hand and meet contract specifications;
- Readiness reviews have been completed;
- Level of quality expected is understood by workers;
- Quality issues have been addressed; and,
- Briefing on process improvement program and FCR process.

Deficiencies identified during preparatory phase inspections will be documented and corrective action taken prior to beginning work. The UXOQC will verify with the PM that corrective action has been complete and is appropriate before production work can begin.

Preparatory phase inspections will be conducted using QC developed checklists (Appendix F) and documented on the Daily QC Report.

#### **4.4.2.1.2 Initial Phase**

Initial phase inspections are performed when a work process begins for each crew or team performing the process. The purpose of the inspection is to verify work is in compliance with procedures and contract specifications, establish acceptable level of workmanship, review preparatory phase inspection report, and resolve differences of interpretation. Initial phase inspections may be repeated when acceptable levels of quality are not demonstrated or at the discretion of the UXOQC.

The UXOQC is responsible for conducting initial phase inspections and verifying:

- Compliance with procedures and specifications;
- Acceptable level of workmanship is being performed;
- Integrity of the BSP;
- Corrective action taken during the preparatory phase inspection has resolved the deficiency and prevents recurrence; and,
- Any differences of interpretation are resolved.

Deficiencies identified during initial phase inspections will be documented and corrective action taken. The UXOQC will verify with the PM that corrective action has been completed and is appropriate to prevent recurrence of the condition. When corrective action cannot be completed in a timely manner (2 days), or the root cause is not known, immediate corrective action that fixes the deficiency may be taken, verified, and work continued pending root cause analysis and more appropriate corrective action.

Initial phase activity will be conducted using QC developed checklists (Appendix F) and documented on Daily QC Report.

#### **4.4.2.1.3 Follow-Up Phase**

Follow-up phase inspections are performed after a work process has begun and periodically throughout the work process. The purpose of the inspection is to ensure the process is being completed in accordance with agreed upon standards, identify changes in the process, and ensure the level of quality meets expectations. The UXOQC is responsible for monitoring work processes taking place and verifying continued compliance with contract specifications

and requirements. Follow-up phase inspections are excellent opportunities to observe work processes and identify possible process improvements. The UXOQC will maintain the integrity of the BSP.

Follow-up phase activity will be documented on a surveillance report and daily QC report (Appendix F).

Deficiencies identified during follow-up phase inspections will be documented on QC checklists (Appendix F) and corrective action taken.

#### **4.4.2.2 Surveillance**

Surveillance shall be conducted to collect objective evidence by the UXOQC in order to document and report conditions observed. The QC surveillance is an ongoing process throughout the project. Surveillance is a process of monitoring and verifying the status of procedures, methods, conditions, products, processes, and services and the analysis of records in relation to contract requirements to ensure that the requirements for quality are being met. Surveillance will be conducted on a scheduled or unscheduled basis. Surveillance activity will be documented on the QC surveillance report and attached to the daily QC report.

#### **4.4.2.3 Field Activities**

##### **4.4.2.3.1 *Definable Features of Work / QC Actions***

Table 4-1 lists the DFW and QC actions for this project.

**Table 4-1 Definable Features of Work/QC Actions**

<b>Definable Feature of Work</b>	<b>QC Action</b>	<b>Sampling Rate</b>	<b>Failure Criteria</b>
Prepare WP/APP/SHSP/QCP/SAP	QC Check for contract compliance prior to USACE Review and Acceptance	100% of Project Plans	USACE comments, resolution and revision
Mobilization	Review and Acceptance	N/A	N/A
Geophysical Survey	3-Phase Control Process, Acceptance Sampling	IVS and Pseudo-blind Seeding	Missed Pseudo-blind seed item
UXO/MEC Sub-Surface Investigation	3-Phase Control Process, Acceptance Sampling	1 or 2 pseudo-seeds per team per day; dependent upon proposed transect length	DGM selected target not investigated; or required data not collected.
MC Sampling	3-Phase Control Process, Data Validation	10% of samples	≤30% RPD for metals in soil matrix.
RI/FS Report	QC Check for contract compliance prior to USACE Review and Acceptance	100% of Final Report	USACE comments, resolution and revision
Demobilization	Review and Acceptance	N/A	N/A

The following sections describe the activities listed in Table 4-1 in more detail and Section 4.7.4 details pass/fail criteria.

**4.4.2.3.2 Prepare WP/APP/SSHP/QCP/SAP/QAPP**

Plans will be prepared, reviewed, and submitted to the USACE for review/approval.

**4.4.2.3.3 Mobilization**

Mobilization will take place before fieldwork begins. During this phase, all materials required to start operations will be assembled in the designated site area. All project support personnel will be brought in for start of field activities. Initial site training will be conducted.

**4.4.2.3.4 Geophysical Survey**

DGM will be performed throughout all accessible areas of the site. The geophysical data will be interpreted and target pick lists will be generated.

Per discussion during the TPP process; the BSP will consist of buried seeds (i.e. the ISOs) such that a minimum of one blind seed path event will be encountered by each DGM investigation team per work day. To maintain the same project accuracy as the positioning of the DGM data, the location of each blind seed will be recorded using an RTK GPS system. To insure that the DGM team will encounter the blind seed; a flagged path (straight line); will be clearly marked along the proposed DGM transect. In order to maintain the integrity of the BSP; flagged paths may or may not contain a blind seed item or may contain more than one blind seed item.

#### ***4.4.2.3.5 Subsurface Investigation***

Subsurface investigation operations will be conducted in a systematic manner, using a transect-based approach, ensuring complete coverage of areas being cleared. Subsurface targets identified through geophysical survey will be staked out and intrusively investigated.

#### ***4.4.2.3.6 UXO/MEC Scrap Inspection/Certification***

All range-related debris, as well as UXO/MEC-related scrap, will be inspected for explosive hazards, engine fluids, illuminating dials and other visible liquid HTWR materials and sorted. Scrap will be certified as free of explosive material and documented on DD Form 1348-1 prior to leaving the site.

#### ***4.4.2.3.7 MC Sampling***

MC sampling will be conducted in accordance with the requirements in this WP and the DQOs established by the project team. Field sampling will be conducted by an experienced field technician, with oversight from the PM and project chemist. A USACE-approved, ELAP accredited, independent laboratory will be used for analysis, with 10 percent of the samples going through data validation.

#### ***4.4.2.3.8 Demobilization***

Demobilization will take place after fieldwork is complete and the client has been notified and accepted the performed work. During this phase all Bristol equipment will be removed from the site and personnel dismissed/released.

#### **4.4.2.3.9 RI/FS Report**

A RI/FS Report will be generated at the conclusion of site activities detailing the project actions, results, conclusions, and recommendations. Final Report will be prepared, reviewed, and submitted to the USACE for review/approval.

#### **4.4.2.4 Site-Specific Training**

The SUXOS will provide and document site-specific training during the project site kickoff meeting and whenever new workers arrive on site. The site kickoff meeting will cover all aspects of this WP. No site workers will be allowed to begin work on site until the site-specific training is completed and documented by the SUXOS. As part of the site-specific training, the following topics will be covered:

- Project introduction and orientation;
- Requirements and responsibilities for accident prevention, and maintaining safe and healthful work environments;
- General safety and health policies and procedures and pertinent provisions of EM 385-1-1;
- Job hazards and the means to control/eliminate those hazards, including applicable Activity Hazard Analysis;
- Selection, use, and limitation of PPE;
- Munition types expected to be found on site;
- Site specific environmental, natural resources, and archeological/historical awareness;
- Employee and supervisor responsibilities for reporting all accidents;
- Bloodborne pathogen briefing; and
- Procedures for reporting and correcting unsafe conditions or practices.

#### **4.4.2.5 Safety Briefings**

Site workers will be given a Daily Safety Meeting by the SUXOS, UXOSO, or a designated competent individual daily and/or before the start of new work activities. A copy of the Daily Site Safety Meeting Record form that will be used to document these meetings is included in Appendix D. Updates in work practices and hazards, emergency evacuation routes, and emergency procedures, will be addressed along with Safety Incentives Programs. Field teams will be given a daily tail-gate safety meeting prior to the start of operations for the day. At

each tailgate meeting, safety will be reviewed for all operations planned for that workday. The UXOSO will document any tail-gate safety meetings personally attended in the Daily QC Report (Appendix F).

#### **4.4.3 Quality Reporting**

The reporting of work will be identified by terminology consistent with the work schedule and WP. Daily Contractor Production and QC reports will be prepared, signed, and dated by the UXOQC. Daily reports will include the following:

- Date of report, report number, name of contractor, contract number, title and location of contract and task order, and superintendent present;
- Safety inspections/deficiencies, lost time accidents, hazardous materials or waste released into the environment;
- Workforce job hours and cumulative hours; and,
- A list of actions taken each day, including a summary of the site preparation, types and number of MEC/UXO and related items detected.

Remarks shall contain pertinent information, including directions received, problems encountered during activities, work progress and delays, conflicts or errors in the specifications, field changes, safety hazards encountered, instructions given, and corrective actions taken, delays encountered, and a record of visitors to the work site.

##### **4.4.3.1 Daily Field Activity Records**

Field activity logbooks will be maintained daily, if applicable, and all entries will be recorded in ink. All personnel will use bound and numbered field logbooks with consecutively numbered pages. Daily logbook entries will be required for each team leader when onsite.

The following logs will be maintained:

##### **4.4.3.1.1 *Daily Activity Log***

The SUXOS will maintain a daily field activity log to include as a minimum:

- Date and recorder of field information;
- Start and end time of work activities, including breaks, lunch, and down times;
- Work accomplished;

- Visitors;
- Weather conditions;
- Relevant events;
- Important phone calls/communications;
- Changes from approved or planned work instructions; and,
- Signature of SUXOS.

#### **4.4.3.1.2      *Safety Log***

Safety documentation will include:

- Date and recorder of log;
- Tailgate safety briefing (time conducted, subjects covered and by whom);
- Weather conditions, significant site events relating to safety, Accidents, Stop work due to safety, safety audits; and,
- Signature of UXOSO.

#### **4.4.3.1.3      *QC Activity Log***

QC documentation will include:

- Date and recorder of log;
- Equipment testing and results;
- Equipment monitoring results;
- QC audits;
- Nonconformance reports; and,
- Signature of the UXOQC.

#### **4.4.3.1.4      *Photographic Records***

Digital photographic documentation will be ongoing for all aspects of fieldwork. The PM and UXOQC will maintain digital photographs, chronologically organized, to include the areas of investigation and all events called for in the PWS. Photographic documentation of each area/site deliverable upon completion of work will also be maintained. Photographic documentation will also be collected for each MEC/UXO item found during field activities.

#### **4.4.3.1.5 Working Maps**

Maps pertaining to the project site will be maintained by the PM. Site maps will be available and used to identify transect locations, clearance areas, and site boundaries. These maps will also serve to document UXO discovery locations.

#### **4.4.3.1.6 UXO Find Location Records**

The UXO Find Location Records are individually prepared for each operating location and/or transect. These records are maintained by the team supervisor (UXO Technician III), and are used to record data on the location of UXO encountered, and to record data on anomaly excavations during subsurface clearances. The information will include the date, transect / work area identification, type and condition UXO encountered, and any other relevant information. The record will be signed by the supervisor and retained by the SUXOS.

### **4.5 EQUIPMENT MAINTENANCE AND RESPONSE CHECK**

All data-measuring and acquisition equipment used for data collection activities affecting quality shall be operated, inspected, maintained, and function-tested in accordance with the requirements specified in the applicable operating instructions and/or WP. Equipment found to be inoperable, damaged, or out of calibration shall be tagged, segregated, and not used until the discrepancy has been corrected and the acceptable condition of the equipment is verified and noted by a member of the QC staff.

#### **4.5.1 Maintenance**

Preventative equipment maintenance includes scheduled and unscheduled maintenance performed by an operator or mechanic/technician in an effort to maintain the equipment in a satisfactory operating condition. The following equipment will be maintained in accordance with the preventative maintenance requirements outlined in the applicable operational manufacturers' manuals that will be kept in the Bristol field office:

- UXO/MEC detection equipment;
- Radios and cellular telephones;
- Vehicles; and,
- GPS equipment.

All instrumentation used in the field will be tested with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the manufacturer's specifications. The method for measuring the instrument response will be to collect data/pass the instrument over a daily test line, established within the IVS, and compare the response to the standard response recorded prior to the instrument/equipment being put into service. Testing, repair, or replacement records will be filed and maintained by the UXOQC, and may be subject to audit at any time.

#### **4.5.1.1 Maintenance Procedures**

The manufacturer's written maintenance schedule shall be followed to minimize the downtime of equipment / instruments. The operator's responsibility will be to adhere to this maintenance schedule and to arrange any necessary and prompt service as required. At a minimum, equipment used daily will be cleaned at the end of each workday and kept in good operating condition. Service to the equipment, instruments, tools, etc., shall be performed by qualified personnel.

#### **4.5.2 Response Check Log**

To accomplish function checks for Schonstedts, the IVS will be used. The IVS items should produce consistent readings with each Schonstedt each day; the readings for each item should be similar. The leader for each working team will be responsible for maintaining a daily log of the readings for each unique piece of equipment by serial number. The QC personnel will make periodic checks of the forms and procedures. This procedure will also be used for other site approved hand held detectors, i.e. Whites, Fisher, Valon, etc.

#### **4.5.3 Maintenance Records**

Logs shall be established to record and control maintenance and service procedures and schedules. All maintenance records will be documented and traceable to the specific equipment (i.e., PPE, First Aid kits, communications etc.), instruments, tools, vehicles, and gauges. Records produced shall be reviewed, maintained, and filed by the equipment operators and/or UXOQC when this equipment is used at the site. The PM may audit these records to verify complete adherence to these procedures.

#### **4.5.4 Equipment Spare Parts**

Extra batteries and other frequently replaced parts will be maintained on-site for each type of instrument/equipment in use. Due to cost considerations, backup / replacement instruments / equipment items are not required to be kept on site. However, arrangements shall be made with an equipment vendor, so that replacement equipment and/or spare parts can be delivered by overnight delivery or equivalent means.

#### **4.5.5 Equipment Checkout and Receiving Inspections**

Equipment pre-operation procedures will be observed by the UXOQC and recorded in the team daily log. If equipment field checks indicate that any piece of equipment is not operating correctly and field repair cannot be made, the equipment will be tagged and removed from service. The SUXOS will request repair or replacement from logistics. Replacement equipment will meet the same specifications for accuracy and sensitivity as the equipment removed from service.

Specific procedures for before, during, and after checks of radios and cellular phones include the following:

- Before operation, communication checks shall be conducted to ensure the equipment is operating correctly;
- During operation, communication checks at established intervals shall be conducted to assure the equipment is operating properly; and,
- After operation, maintenance shall include cleaning of and turning off equipment, including prior to placement into chargers.

#### **4.5.6 Contractor Acquired Property or Government Furnished Property**

When Contractor-Acquired Property (CAP) or Government-Furnished Property (GFP) is received, it will be examined to detect damage from previous use, in transit damage, for completeness and to ensure that the equipment is adequate / proper to perform its intended task. Receiving inspections will also include a function test, if applicable. CAP and GFP are considered government property. The designated individual will perform inventories of CAP and GFP.

## **4.6 FIELD CHANGE CONTROL**

### **4.6.1 Responsibilities**

Any individual, including the PM, assigned to perform or supervise a task that recognizes the necessity for a field change is responsible for instigating appropriate field changes and completing and submitting the FCR Form for review and approval.

#### **4.6.1.1 Project Manager**

The PM is responsible for:

- Evaluating validity and acceptability of the FCR with respect to contract requirements;
- Evaluating and documenting the effect of the field change on project costs;
- Accepting, qualifying, or rejecting the field change; and,
- Soliciting and obtaining approval of any changes to the contract or costs prior to performance of any work affected by the changes.

#### **4.6.1.2 Quality Control Manager**

The QC Manager is responsible for evaluating and approving the changes to ensure that all QC requirements are met and that all changes to the contract are properly reviewed and approved by the responsible personnel. The QC Manager will assist the PM in negotiation of changes to the contract scope with respect to QC.

### **4.6.2 Procedure**

#### **4.6.2.1 Recognition of Necessity for Field Changes**

During the course of field activities, WPs, APPs, procedures, and QC documents will be followed faithfully, unless some unavoidable and unsolvable situation occurs. In this instance, the performer of the task is required to determine the best approach for satisfactory completion of the task through the following actions:

- If warranted, stop affected activities until the PM and/or acting QC Manager evaluates the situation; and,
- Instigate field changes for approval.

#### **4.6.2.2 Definition of Minor and Major Changes and Major Project Impact**

Minor Change - A Minor Change is defined as a field change that would not adversely affect the quality of the data or product in the field, the rationale for the field procedures, or costs.

Minor changes may be implemented prior to approval by the PM and the QC Manager.

Examples of minor changes are as follows:

- Changing the sequence of the field activities; and,
- Changing any of the administrative requirements relative to a remedial effort, with the exception of those requirements mandated by federal or state regulations (e.g., chain-of-custody procedures).

Major Change - A Major Change is defined as a field change that will adversely affect the quality of field activities, will cause a significant change in the cost or the scope of the activity, or will cause significant delays in the schedule. Major changes will require the approval of the USACE CO or COR, and the Bristol QC Manager. Examples of major changes are as follows:

- Significantly changing the project approach;
- Encountering additional targets to be removed or placed on the project site; and,
- Encountering significantly different tonnages of material than previously estimated.

A change with Major Project Impact is defined as a change that has a major impact on project cost, schedule, and/or technical performance. Some changes defined as major changes may have major project impact. Field changes will be documented by completing the FCR Form and describing the reasons for the change, the recommended disposition, cost impact, impact on previous work, and type of change (Minor, Major, Major Project Impact). The signed and dated form will be immediately provided to the PM and QC Manager for review.

#### **4.6.2.3 Final Disposition**

After completion of the review and approval process, the FCR Form will be forwarded by the PM to the SUXOS and the QC Manager. If approved, the personnel responsible for the work will implement the change. The QC Manager will note final disposition of FCR (e.g., change incorporated and work completed, change rejected and work performed per original requirements) on the FCR Form.

- The QC Manager will verify that all changes to the PWS are marked on all copies in use in the field and on file;
- The completed FCR Form will be submitted to the project file; and,
- The PM will incorporate any approved cost adjustments into the budget.

If an implemented Minor Field Change is not approved by one of the reviewers, it will be deemed a nonconforming condition and, as such, will be treated as directed by the procedures for Nonconformance/Corrective Action.

#### **4.6.2.3.1 Field Change Request**

The FCR Form is to be completed for initiating changes to project plans. Approved FCRs will be reviewed with project personnel during the Morning Meeting/Safety Briefing prior to implementation.

The initiator completes the FCR Form, then requests assistance from the UXOQC Officer. The UXOQC Officer reviews the FCR and routes it to Safety, SUXOS, and PM, as appropriate, in turn. The PM submits the FCR to the USACE for approval. The goal is to have all FCRs approved or disapproved in no more than 1 week.

#### **4.6.3 Records**

FCR Forms will be maintained in the project files and available on site. An FCR Form is provided in Appendix F.

#### **4.7 AUDITS**

Validation of compliance with the WP and this QCP will be accomplished for each DFW. The primary validation tool for QC personnel will be auditing. The specific QC audit procedures for the DFWs, including the phase during which it is performed, the frequency of performance, the pass/fail criteria and action to take if failure occurs, are presented in this section.

##### **4.7.1 Objectives**

Objectives of QC audits include:

- Evaluate objective evidence that the QCP and WP are being implemented;

- Assess the adequacy, effectiveness, and thoroughness of the QCP and WP;
- To verify conformance with approved procedures, WPs, drawings, specifications, and procurement documents;
- To identify quality deficiencies; and,
- To verify correction of previously identified quality deficiencies.

The QA audits include auditor identification, audit notification, audit reporting, identification of non-conformances, establishment of corrective actions, and audit completion notification. In circumstances where corrective actions have not been completed as planned or scheduled, the auditing process provides for management intervention to resolve problems and for issuance of stop work orders, if necessary.

#### **4.7.2 Responsibilities**

The UXOQC is responsible for audit planning and execution. The UXOQC will report audit results directly to the PM. Corrective actions based on audit results will be administered by the SUXOS in conjunction with the UXOQC.

#### **4.7.3 Audit Procedure**

Technical specialists must be familiar with the technical and procedural requirements of both field and laboratory operations, as well as the associated QA plans. In addition, auditors may not be directly involved with the actual tasks themselves to ensure no introduction of bias into the auditing process.

Audits may be scheduled or conducted at random. They may be comprehensive or spot checks. The type and method of audit will be established by the UXOQC prior to audit performance.

Audits will be performed on various aspects of each DFW. The type of task being audited will dictate the type of audit performed. Field task procedure audits will involve the comparison of field activities to written work/safety and field activity SOPs or guidelines. Project plan audits will involve review completion documentation and certifications.

While the majority of the activities will be performed by Bristol, the UXOQC will review subcontractor (InDepth, etc.) QC plans, develop an audit plan, and perform an audit of

subcontractor compliance with the subcontractor's approved QC plan. The USACE OESS, as a team partner, will be invited to participate in subcontractor QC reviews and scheduled audits.

#### **4.7.4 Pass/Fail Criteria**

The UXOQC will do a final acceptance inspection on each activity/task. In the event of minor deficiencies/non-conformances, he may opt to have the deficiency corrected on the spot or correct it himself. In cases where a deficiency/nonconformance rate of 10% or higher is noted, he may require that segment of work (i.e., transect, area, etc.) be repeated and re-inspected. For the geophysical survey, a missed pseudo-blind seed, may result in a survey transect failure and may cause implementation of corrective action to resurvey the transect in question based on an evaluation of the root cause of the failure to find the seeded item. During intrusive activities missing a pseudo-blind seed item will require analysis to determine the reason for the deficiency. If the deficiency is considered a failure then a root cause analysis should be performed to determine the cause of the failure. During intrusive investigations QC will 10% of picked targets to assure that they have been investigated. For scrap inspection / certification, missing one UXO item or item with hazardous or energetic material will constitute a failure. The failure may cause re-inspection of the scrap load depending on the evaluation of the root cause of the failure. In all cases, a corrective action will be determined and implemented. Through observation, the UXOQC will note quality trends and will brief during the daily meeting on an as required basis.

#### **4.7.5 Records**

The UXOQC will keep all audit records on site, and copies of those records will also be stored in both the Bristol Anchorage and Sneads Ferry offices.

#### **4.8 NONCONFORMANCE/CORRECTIVE ACTIONS**

The primary purpose/goal of the QC program as defined in this document is to prevent non-conformances and facilitate continual process improvement. To the extent that the first of these goals is not achieved, identified deficiencies or non-conformances will be corrected in a timely and cost-effective manner, and with the intent of preventing their recurrence. This QCP includes provisions for preventing quality problems and facilitating process

improvements, as well as identifying, documenting, and tracking deficiencies until corrective actions have been verified.

#### **4.8.1 Nonconformance Procedures**

All deficiencies or non-conformance conditions discovered during inspections or other QC functions will be noted in the Daily QC Report along with corrective actions taken and the root cause analysis if applicable. All deficiencies or non-conformance conditions discovered during inspections or other QC functions will also be noted on either a Deficiency Notice, or a Non-conformance Report as appropriate. These two forms are contained in Appendix F, along with appropriate logs for tracking these reports. All deficiencies and non-conformance conditions will be resolved prior to completion of the project and in the timeliest manner possible. The Deficiency Notice will be used for all conditions that do not affect the final work product. A Non-conformance Report will be used when a condition may affect the final work product.

The following procedures have been established to assure that conditions adverse to quality such as malfunctions, deficiencies, deviations, and errors are promptly investigated, documented, evaluated, and corrected.

#### **4.8.2 Corrective Actions**

When a condition adverse to quality is noted in the field, the cause of the condition will be determined and corrective action taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned, will be documented and reported to the Bristol PM and SUXOS. Implementation of corrective actions will be verified by documented follow-up action. All project personnel have the daily responsibility to promptly identify problem areas, solicit approved corrective actions, and report any condition adverse to quality.

##### **4.8.2.1 Corrective Actions will be initiated at a Minimum:**

- Corrective actions will be initiated:
- When predetermined acceptance standards are not attained;
- When procedures are determined to be faulty;

- When equipment or instrumentation is found faulty;
- When QC requirements are violated;
- As a result of system and performance audits; and/or,
- As a result of management assessment.

#### **4.8.3 QC Records**

In addition to the project plans and submittals, QC documentation shall be maintained for the duration of the project. The QC file will be maintained by the UXOQC and will be controlled as an integral component of the project files. It is the responsibility of the UXOQC to maintain this project information and keep it current and recorded as it is revised. Technical information is not to be replaced or revised without receipt of a properly authorized change order or revision. Copies of purchase orders or subcontracts requiring inspections will be provided to the UXOQC for receiving and recording purposes. Copies of required certifications received will be maintained in the QC file and submitted to the USACE OESS in accordance with the contract.

The Bristol Anchorage, Alaska, office and the Sneads Ferry, North Carolina, office will maintain copies of all records of all actions and activities performed by Bristol throughout the duration of this project. Personnel and equipment certification / qualification records will be maintained at the work site. Authorized personnel / agencies may request access to the prescribed records by contacting the PM.

#### **4.9 LESSONS LEARNED**

During the project and at its completion, all actions will be reviewed. Problem areas and areas of success will be analyzed for lessons learned. Corrective actions will be reviewed to assess their impact on the activity in question. In areas where great success was achieved factors that directly contributed to the success will be analyzed to determine if they can be applied in other areas to improve performance. The overall goal is to ensure past mistakes are not repeated and that procedures are improved to better support future similar activities. Lessons learned will be addressed in the final report, ensuring the information gained is passed to the government.

(Intentionally blank)

## **5.0 EXPLOSIVES MANAGEMENT**

### **5.1 EXPLOSIVES MANAGEMENT**

This chapter describes the procedures applicable in the conduct of explosives management at the project site at CSLO. These procedures include Acquisition; Initial Receipt; Storage; Transportation; Receipt; Lost, Stolen, or Unauthorized Use; and Inventories. This plan applies to all site personnel involved in the conduct of explosives management on the site.

These procedures are in accordance with:

- Federal Acquisition Regulation 45.5;
- Alcohol, Tobacco, and Firearms (ATF) Publication 5400.7;
- DOD Manual 6055.09M, Volumes 1-8;
- EM 385-1-97, USACE Explosives Safety and Health Requirements Manual;
- DOT Regulations;
- Local/State Laws and Regulations;
- USACE DID MMRP-09-002, Explosive Management Plan; and.
- DA Pam 385-64

All MEC demolition will be recorded in an MEC item accountability log. A log of these items will be maintained from discovery through demolition; documenting proper disposal. MEC Accountability Log can be found in Appendix F.

#### **5.1.1 Acquisition**

Bristol is licensed through the Bureau of Alcohol, Tobacco and Firearms and Explosives (BATFE) to purchase and use explosives and will supply commercial demolition material for disposal operations at the site. This license will be available on site for local, state, or federal inspection. Accountability and use of the explosives will remain with Bristol unless custody is transferred to the Government or another contractor with a current BATFE explosives license.

County permits for San Luis Obispo County and BATFE Possessor Forms required to conduct explosive operations at the site must be submitted to BATFE within 30 days of mobilization for personnel that will handle or have access to explosives. Bristol will obtain

the necessary local permits, submit BATFE Possessor Forms required to conduct explosive operations during demolition operations, and maintain these documents on site.

#### **5.1.1.1 Acquisition Source**

Commercial explosives will be purchased from a licensed local commercial supplier. Only a responsible personnel meeting ATF criteria for receipt of explosives will be authorized to request and receive explosives from the commercial supplier. No other personnel will be authorized to receive explosives from the vendor.

#### **5.1.1.2 Listing of Proposed Explosives**

The types of explosives that may be used, but are not limited to, are:

- C-4 demolition charges;
- Non-electric time fuze;
- Non-electric blasting caps;
- Electric blasting caps;
- Time fuze igniters;
- NONEL initiating systems;
- NONEL surface delays;
- Shaped charges (22-gram perforator);
- Detonating cord (100-grain); and,
- NONEL detonators.

#### **5.1.2 Initial Receipt**

Only the individual named on the Explosive Authorization Form (Appendix F) may sign for explosives received from the shipper/vendor. A completed authorization list will be posted at the site and provided to the commercial explosives supplier. In order to ensure the quantity shipped is the same as the quantity listed on the shipping documents, two UXO personnel listed on the explosive authorization list will inventory the shipment prior to signing for any demolition materials.

### **5.1.3 Receipt Procedure**

Explosive shipments may be accompanied by the explosive supplier's/vendor's bill of lading and the freight company's shipping document (if applicable). The initial inventory will include reconciling of the two documents, as appropriate, with the actual shipment received.

Regardless of the outcome of the initial inventory, one copy of the bill of lading and the freight company's shipping document, as appropriate, will be attached to a copy of the Purchase Order. One copy of each of these documents will be kept on file at the site field office, and one complete copy should be forwarded to the Bristol Corporate Office located at 111 16<sup>th</sup> Avenue, Anchorage, AK 99501.

#### **5.1.3.1 Explosives Receipt Discrepancy**

In the event that there is a discrepancy between the quantities of explosives shipped and the quantity received, the SUXOS or PM will immediately contact the explosives supplier and indicate the discrepancy. It is the responsibility of the supplier and shipper to rectify the situation and inform Bristol of the results. The supplier and/or shipper must then correct their documents and forward a revised bill of lading to the site. Only the actual quantity of explosives received will be signed for on the bill of lading at the time of delivery.

#### **5.1.3.2 Receipt/Return of Explosive Material**

Following each receipt or return of explosive material, the SUXOS will conduct a joint inventory in conjunction with the UXO Technician III demolition team leader. Unused demolition explosives will be returned to the vendor at the end of daily demolition activities.

#### **5.1.3.3 Certification**

The blaster of record will sign and date the Demolition Record certifying that the explosives were used for their intended purpose.

### **5.1.4 Storage**

Commercial explosives will not be stored on site. Demolition explosives will be delivered on an "as needed/for day use only" basis by the licensed local vendor.

#### **5.1.4.1 Establishment of Explosive Storage Facilities**

Explosives will not be stored on-site.

#### **5.1.4.2 Physical Security of Explosive Storage Facilities**

Explosive storage facilities are not authorized for this site.

### **5.1.5 Transportation**

Transportation of explosives or MEC will be in compliance with all federal, state, and local regulations. Off-site transportation of MEC is not authorized.

#### **5.1.5.1 Transportation to Disposal Location**

Bristol personnel will comply with the following procedures when transporting explosives and/or MEC to the disposal site:

- Initiating explosives, such as blasting caps, will be separated from other explosives at all times in the vehicle. Initiating explosives may be transported in the same vehicle, but must be in a separate container and secured away from other explosives;
- All explosives materials/MEC items will be properly containerized and secured in the transport vehicle prior to movement;
- Ensure compatibility requirements are met;
- Only a responsible personnel meeting ATF criteria for receipt of explosives (UXO Technician III or higher) will sign for and supervise the transportation of explosives or MEC;
- The driver of the transporting vehicle must possess a valid driver's license;
- The driver will comply with posted speed limits; however, a safe and reasonable speed for actual road conditions will be observed. Drivers transporting explosives or MEC off-road will not exceed 25 mph; and,
- No personnel are allowed in the cargo compartment while transporting explosives or MEC.

#### **5.1.5.2 Requirements for Vehicles Transporting Explosives or MEC**

The primary procedure for the transportation of explosives will be for the Explosives Vendor Delivery Vehicle to deliver explosives on an as needed basis; to remain on-site on a stand-by basis during operations; and to remove any unused explosives after demolition operations.

The secondary procedure is for the explosives or MEC to be transported in the bed of the Bristol Demolition Team vehicle. Day boxes (Type 3) of adequate sizes to contain all explosives should be used if the vehicle is not closed with a locking canopy. The following requirements apply to each transporting event:

- Vehicles transporting explosives or MEC will be inspected daily using the Vehicle Inspection Form (Appendix F) and be properly placarded;
- Vehicles transporting explosives shall have a first aid kit, two 10 lb. BC-rated fire extinguishers, and communications with the SUXOS and field office;
- Vehicle engine will not be running when loading/unloading explosives;
- The load shall be well-braced and secured during shipment. Material will be transported in day boxes or on a wooden bed liner, dunnage, or sand bags to protect the explosives from contact with the metal bed or fittings; and,
- Vehicle will be properly chocked when parked and loaded with explosives.

#### **5.1.6 Lost/Stolen or Unauthorized Use of Explosives/MEC**

In the event that there is a discrepancy during any inventory, the item will be recounted a minimum of two additional times. If the discrepancy is not resolved, the USACE CO, Bristol PM, USACE OESS, U.S. Army CID or Provost Marshal, local law enforcement agencies, and BATFE will be notified within 24 hours of identifying the explosives as lost/stolen.

#### **5.1.7 Return of Unused Explosives**

Explosives that were issued for use, but were not used, will be returned to the commercial explosives supplier at the completion of demolition operations and the documentation will be maintained in the Bristol field office.

#### **5.1.8 Procedures for Disposal of Unused Explosives**

At the end of each demolition event, all unused explosives will either be disposed by detonation on-site or custody and accountability transferred back to the commercial supplier. Documentation for unused explosives sent back to the supplier will be maintained in the Bristol field office.

(Intentionally blank)

## **6.0 ENVIRONMENTAL PROTECTION PLAN**

This Environmental Protection Plan has been developed to minimize impacts to the project area from RI/FS activities at the Former CSLO. Additionally, it identifies cultural and biological resources found in and around CSLO and outlines possible mitigation measures that can be used to avoid or lessen the impacts from visual surveys, geophysical survey and investigations, MC sampling, and MEC management, if necessary.

This plan will discuss multiple topics of environmental protection including:

- Wetlands;
- Coastal Zones;
- Cultural and Historical Resources;
- Biological Resources (including Threatened and Endangered Species Protection); and
- Mitigation Measures.

USACE guidance requires discussion of the following topics when applicable: coastal zones, trees and shrubs removed during site activities, burning activities conducted at the site, control of water run on and run off, and decontamination and disposal of equipment. These topics are not applicable to the CSLO RI/FS; therefore discussion will be very limited. If it is deemed necessary to perform one or more of these activities, an attachment to this plan will be developed and provided before the activity commences at the project site. This document addresses activities planned within the three MRSs discussed in detail in Chapter 1 of this document.

### **6.1 WETLANDS**

The following definition of wetland is the regulatory definition used by EPA and USACE.

EPA (Federal Register 1980) and USACE (Federal Register 1982) jointly define wetlands as:

“Those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas.” (Title 40 CFR 232.2(r)).

USACE regulates wetland uses under the authority of the Rivers and Harbors Act and the CWA. USACE requires the use of the “1987 Corps of Engineers Wetlands Delineation Manual” for jurisdictional purposes (USACE, 1987). The USACE manual uses a three-parameter method for identifying wetlands requiring positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology.

Both the city of San Luis Obispo and San Luis Obispo County extract groundwater from the San Luis Obispo Valley Groundwater Basin, which underlies the San Luis and Edna Valleys and is bounded on the southwest by the San Luis Range, the northeast by the Santa Lucia Range, and all other sides by contact with impermeable Miocene and Franciscan Group rocks. The southeastern part of the valley is drained by tributaries of Pismo and Davenport Creeks. The northwestern part of the valley is drained by San Luis Obispo, Stenner, and Prefumo Creeks (State of California, 2004).

San Luis Obispo/Avila Water Plan Area 4 is classified as intermittently flooded areas situated within a topographic depression. Small, temporarily and seasonally ponded depressions called vernal pools occur in scattered areas from San Diego County, California, to the Modoc Plateau in southern Oregon. These wetlands are found in a variety of landscapes, where they are usually underlain by an impermeable layer such as a hardpan, claypan, or basalt. Vernal pools often fill and empty several times during the rainy season. Other wetland types in the Arid West include seeps near the bases of slopes, wet meadows, wetlands associated with the fringes of reservoirs, the wetter portions of riparian forests, and man-made depressions in mined areas, agricultural lands, suburban areas (e.g., golf courses), and wetland restoration sites.

The wetlands are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall. These wetlands range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland. Although generally isolated, they are sometimes connected to each other by small drainages known as vernal swales. Beneath the vernal pools lay either bedrock or a hard clay layer in the soil that helps keep water in the pool. Climatic changes associated with each season cause dramatic changes in the appearance of vernal pools.

The pools collect water during winter and spring rains, changing in volume in response to varying weather patterns. During a single season, pools may fill and dry several times. In years of drought, vernal pools are usually quite small and ponded only during the wetter part of the year; however, some pools may not fill at all.

Appearances may be deceiving, however. The unique environment of vernal pools provides habitat for numerous rare plants and animals that are able to survive and thrive in these harsh conditions. Many of these plants and animals spend the dry season as seeds, eggs, or cysts, and then grow and reproduce when the ponds are again filled with water. In addition, birds such as egrets, ducks, and hawks use vernal pools as a seasonal source of food and water.

The main drainage at the site is Chorro Creek. Surface drainage is generally to the west. The Chorro Creek and its tributaries are intermittent and flow only when precipitation is sufficient. The Los Osos, Chorro, and Morro Creeks provide drainage to the Los Osos Valley drainage basin, where water bearing formations are found. Groundwater in the Los Osos Valley is found at depths from 10 to 50 feet bgs.

Sediment debris is transported by these creeks into Morro Bay during hydrologic events (USACE Rock Island District, 1994).

Potential jurisdictional wetland, such as freshwater marsh, vernal pools, and riparian habitat types, are present. Prior to any earthmoving work, a qualified USACE biologist knowledgeable and experienced with jurisdictional wetlands will perform the necessary delineation.

## **6.2 COASTAL ZONES**

There are no coastal zones located within the project area.

## **6.3 CULTURAL AND HISTORICAL RESOURCES**

### **6.3.1 Existing Waste Disposal Sites Within the Project Site**

It is possible that field investigation teams will encounter existing waste disposal sites that are comprised of household-type rubbish. These may contain discarded metal and glass that are a safety hazard to project personnel. The field investigation teams will avoid all of these areas

and notify the SUXOS and UXOQC and/or the UXOSO. Avoidance will consist of adjusting the survey area boundaries, or working around these existing waste disposal sites within the investigation areas.

### **6.3.2 Cultural, Archeological, and Water Resources**

The following sections detail cultural and archeological resources potentially within the project boundaries. The information presented for this project was obtained in part from the Final TCRA WP (ERRG, July 2010), based on similar field operations.

#### **6.3.2.1 Cultural Resources**

Some of the World War II artifacts that remain in the State Parks are dangerous to the public. While these artifacts technically and legally meet the definition of a cultural resource, they warrant identification and removal by qualified ordnance experts, not archaeologists. Because the removal of ordnance is governed by strict rules of documentation, UXO personnel in the field serve as recorders of the World War II archaeological record. In the plan below, all UXO personnel will be briefed about how to identify cultural resources in the State Parks and an USACE archaeologist and a cultural responsible person will be designated from the contractor's team for the field operation. Locations where cultural resources have been noted will be recorded with photographs and GPS. Every effort will be made to avoid and leave intact cultural resources, both prehistoric and historical.

#### **6.3.2.2 Regulatory Setting**

For federal undertakings, in compliance with the National Historic Preservation Act (NHPA), Public Law 89-665; Title 16 United States Code (U.S.C.) 470-470m, as amended; Title 16 U.S.C. 460b, 470l-470n; and Title 36 CFR Part 800. Cultural resources are located using two principal methods. Before starting a project, a records and literature search is conducted at repositories of archeological site records. The search may show that an archaeological or historical survey has been conducted in the project area and that cultural resources have been identified. That information may be enough to proceed with the significance evaluation stage of the project. If no previous survey has been done, or if a previous survey was either out of date or inadequate, a pedestrian survey of the ground surface within the proposed project boundaries may be conducted. Subsurface testing may also be performed if deemed

appropriate by a cultural resource professional. After a cultural resource(s) has been identified during a survey or record and literature search the federal agency overseeing the undertaking proceeds to determine whether the cultural resource is eligible for listing in the National Register of Historic Places (National Register). Section 106 of the NHPA mandates this process. The federal regulation that guides the process is Title 36 CFR Part 800. For a cultural resource to be determined eligible for listing in the National Register it has to meet certain criteria. The resource has to be either minimally 50 years old or exhibit exceptional importance. After meeting the age requirement, cultural resources are evaluated against four criteria. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

1. that are associated with events that have made a significant contribution to the broad patterns of our history; or
2. that are associated with the lives of persons significant in our past; or
3. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. that have yielded, or may be likely to yield, information important in prehistory or history.

After a cultural resource has been determined eligible for inclusion in the National Register it is accorded the same level of protection as a property that is included. It then becomes formally known as a “historic property” regardless of age. The following law may also apply to the project:

American Indian Religious Freedom Act of 1978: Public Law 95-341; 42 U.S.C. 1966. The American Indian Religious Freedom Act makes it policy of the federal government to protect and preserve the inherent rights of American Indians, Eskimo, Aleut, and Native Hawaiian to believe, express, and exercise their traditional religions. This includes, but is not limited to, access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites. It directs federal agencies to evaluate their policies and procedures to determine if changes are needed to ensure such rights and freedoms are not

disrupted by agency practices. The act also requires the views of Native American leaders be obtained and considered where a proposed land use might conflict with traditional Native American religious beliefs or practices.

The type and degree of adverse effect(s) must be assessed and steps must be taken, in consultation with the State Historic Preservation Office and Tribal Historic Preservation Officer, to avoid, minimize, or mitigate adverse affects. In efforts to reduce vandalism and destruction of archaeological sites, it is illegal to collect or disturb historical artifacts located within a California State Park.

### **6.3.2.3 Historical-Period Cultural Resources**

Although the State Historic Preservation Office and Central Coastal Information Center did not identify the presence of cultural resources in MRS-05, according to both David Ragsdale and Mike Hall, both of Cal Poly, Native American cultural resources are present in MRS-05 and they are frequently visited by schoolchildren during scheduled field trips (Parsons Corporation, 2007).

### **6.3.2.4 Potential Impacts of Field Activities**

Nonintrusive and intrusive methods of field investigation will be used during field activities. Nonintrusive methods include visual surveys conducted by foot or by small utility vehicles (e.g. Polaris or gators).

Intrusive methods include digging up an item after it has been identified by (1) using either a handheld metal detector and digging when an item is discovered, or (2) using previously recorded data and digging a discrete anomaly identified as potentially containing MEC, or (3) blowing in place an item that cannot be removed safely. The method(s) used will be dictated by the topography, access, cultural and biological resource considerations, agency approval, and other similar considerations on a site-by-site basis. The fieldwork, as planned, has a potential to affect sensitive cultural and biological resources in and around the project site. Sections below address minimization of these impacts. Because of safety concerns, recording of cultural resources at UXO locations will take place after BIP operations.

#### **6.3.2.5 Mitigation Measures**

Nonintrusive methods, such as visual surveys and surface clearance operations, have a low potential of impacting cultural resources depending on what type of equipment is used to conduct the survey. Intrusive methods may impact a cultural resource if the dig area is within close proximity of a cultural resource. As noted above, every effort will be made to avoid resources once they have been identified.

#### **6.3.2.6 Worker Education Briefing**

Prior to commencement of field activities, all on-site personnel will be briefed on health and safety issues and on the cultural resources sensitivity of the area. A cultural responsible person will be identified during this briefing to ensure the field teams are educated and trained each day to avoid the cultural resources. Methods for minimizing potential impacts on cultural resources will form an integral part of the on-site training.

#### **6.3.2.7 Treatment of Unanticipated Finds**

Every effort will be made to identify cultural resources within the project area and to avoid them during UXO activities. However, unexpected cultural remains exist, particularly below the surface. If prehistoric or historical-period archaeological resources are encountered, the location will be noted in the field log and recorded using a GPS unit (if possible). If human remains are encountered during the project, the project archaeologist will notify the County Coroner. If the human remains are determined to be archaeological in nature, the USACE and state archaeologists will be contacted, as will the Native American Heritage Commission. All human remains will be left in place until the appropriate action is defined.

#### **6.3.2.8 NHPA Documentation**

The project archaeologist, in coordination with USACE and the state archeologist, will prepare all documentation required for compliance with NHPA § 106. The USACE archeologist will prepare all cultural resources sections as part of any environmental documentation required by the National Environmental Policy Act.

### **6.3.2.9 Treatment of Unanticipated Finds**

Every effort will be made to identify Paleontological resources within the project area and to avoid them during UXO activities. In the event that Paleontological resources are encountered, the location will be noted in the field log and recorded using a GPS unit.

## **6.4 BIOLOGICAL RESOURCES**

The former CSLO consists mainly of mountains and canyons classified as annual grassland, wooded grassland, oak woodland, and brush. A major portion of the site is identified as annual grassland and is used primarily for grazing. Los Padres National Forest (forest and woodland) is located to the north-northeastern portion of the site.

### **6.4.1 Plant Resources**

Coastal oak woodlands, including coast live oak as a dominant, occur along coastal foothills and valleys. On steep slopes, coast live oak occurs as relatively small woodland patches in mosaics with annual grassland, scrubland, and riparian habitats (Barbour et. al., 2007). Taxa associated with coast live oak on moister sites are Pacific madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), tanoak (*Lithocarpus densiflorus*), and canyon live oak. Overstores range from open to nearly closed, resulting in variable cover and richness of understory shrubs, grasses, and forbs. Annual grasses form most of the understory in open woodlands but are almost nonexistent in very dense woodlands. Coast live oak savannas occur adjacent to grassland habitats. Some invasive exotic vegetation, such as Eucalyptus, are present in the canyons. Vegetation type descriptions come from Terrestrial Vegetation of California (Barbour et. al., 2007, California Native Plant Society Press) and USACE, Planning Division, Environmental Resources Branch.

### **6.4.2 Animal Resources**

The following sections briefly summarize animal resources within the project site based on habitat type (California Natural Diversity Database, 2011). The Coastal woodlands, annual grasslands, scrubland and riparian habitats (ephemeral streams) are the primary habitat types within the project area.

#### **6.4.2.1 Fish**

Steelhead trout have been documented as occurring in association with Los Osos Creek and tributary channels (on or near the project site). This species should be considered as potentially present in riparian areas adjacent to the project site. During the proposed scheduled field operations, these tributaries are likely to be dry, thereby further reducing the potential for impacts to the species.

#### **6.4.2.2 Amphibians**

California red-legged frog has been documented as occurring in association with Los Osos Creek and tributary channels. This species should be considered as potentially present in riparian areas adjacent to the project site. During the proposed scheduled field operations, these tributaries are likely to be dry, thereby further reducing the potential for impacts to the species.

#### **6.4.2.3 Reptiles**

Representative animal species of oak woodlands that may occur onsite include arboreal salamander (*Aneides lugubris*), southern alligator lizard (*Gerrhonotus multicarinatus*), common king snake (*Lampropeltis getulus*).

Reptiles which commonly breed within annual grassland habitats may include western fence lizard, gopher snake, and western rattlesnake (*Crotalus viridis*).

Common lizards such as western fence lizard (*Sceloporus occidentalis*) may potentially occur within coastal scrub habitats of the project site. Coastal scrub communities on the project site may also provide potential habitat for species such as the silvery legless lizard (*Anniella pulchra pulchra*).

#### **6.4.2.4 Birds**

Bird species that may potentially occur in the oak woodland include scrub jay (*Aphelocoma corulescens*), plain titmouse (*Parus inornatus*), California towhee (*Pipilo crissalis*), and the dark-eyed junco (*Junco hyemalis*).

Raptors, such as red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus caeruleus*), barn owl (*Tyto alba*), and American kestrel (*Falco sparverius*), commonly use open grassland areas extensively for foraging purposes, while species such as western meadowlark (*Sturnella neglecta*) use open grassland areas for nesting.

Bird species that may potentially occur in coastal scrublands include American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), California thrasher (*Toxostoma redivivum*), and scrub jay (*Aphelocoma coerulescens*).

Riparian habitats support a wide diversity of wildlife due to the availability of important features such as nesting sites, escape and thermal cover, food, and dispersal corridors.

Animal species which utilize willow riparian habitat include, but are not limited to: Pacific-slope fly catcher (*Empidonax difficilis*), warbling vireo (*Vireo gilvus*), western scrub jay (*Aphelocoma californica*), Bewick's wren (*Thryomanes bewickii*), Wilson's warbler (*Wilsonia pusilla*) and American robin (*Turdus migratorius*).

#### **6.4.2.5 Mammals**

Coast live oak woodland areas on the project site are potential habitat for a wide variety of wildlife species, including foraging habitat for mule deer (*Odocoileus hemionus*), western gray squirrel, black-tailed deer, North American raccoon, and Virginia opossum.

Annual grasslands on the project site may provide foraging habitat for small mammals such as voles (*Microtus* sp.), white-footed mice (*Peromyscus* spp.), California mouse (*Peromyscus californicus*), Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Spermophilus beecheyi*), as well as predators that feed on them, such as coyote (*Canis latrans*).

Mammals that may potentially occur in coastal scrub habitat present on the project site, include brush rabbit (*Sylvilagus bachmanii*), California mouse, Botta's pocket gopher, California ground squirrel, and raccoon (*Procyon lotor*).

Riparian habitats support a wide diversity of wildlife due to the availability of important features such as nesting sites, escape and thermal cover, food, and dispersal corridors.

Animal species which utilize willow riparian habitat include species such as striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginianus*), common garter snake (*Thamnophis sirtalis*).

#### **6.4.3 Special Status Species**

Four special status listed taxa are present or may be present on the project site, which include those found in Table 6-4. Three of the species are present or may be present on the site,

including the Chorro Creek bog thistle (*Cirsium fontinale*), California red-legged frog (*Rana draytonii*), and the southern steelhead (*Oncorhynchus mykiss*).

**Table 6-1 Federally Threatened and Endangered Species List for CSLO<sup>1</sup>**

<b>Species</b>	<b>Common Name</b>	<b>Habitat Requirements</b>	<b>CDFG Status</b>	<b>USFWS Status</b>	<b>Habitat Present at Site</b>
<i>Cirsium fontinale</i> <i>var. obispoense</i>	Chorro Creek bog thistle	Chaparral, cismontane woodland, serpentinite seeps	<b>E</b>	<b>E</b>	<b>Yes</b>
<i>Rana draytonii</i>	California red-legged frog	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation and riparian species along the edges; may estivate in rodent burrows or cracks during dry periods	<b>NA</b>	<b>T</b>	<b>Yes</b>
<i>Oncorhynchus mykiss irideus</i>	Steelhead - south/central California coast DPS	All waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers	<b>NA</b>	<b>T</b>	<b>Yes</b>
<i>Arctostaphylos morroensis</i>	Morro manzanita	No critical habitat rules have been published for the Morro Manzanita	<b>NA</b>	<b>T</b>	<b>Yes</b>

Note:

<sup>1</sup>ERRG, July 2010

#### **6.4.3.1 Mitigation and Avoidance Measures for Listed Species**

The RI/FS investigation foot-print will be relatively small with respect to the total area for each of the individual MRS study areas as described in Chapter 3. Coverage ranges from 0.75% to 7.5% of the total area for each MRS study area. Because the RI/FS field investigation will be performed using a transect-based approach these relatively small coverage percentages result in fairly widely spaced transect spacing to achieve the desired investigation coverage. This fact alone will limit the effect on sensitive species and habitat. Recent sensitive species surveys have not been conducted at all MRS. Consequently, the specific areas within the project site in which these species may occur have not yet been determined. The information presented for this project was obtained from the Final TCRA WP (ERRG, July 2010), based on similar field operations.

##### **6.4.3.1.1 *Potential Effects to Wildlife***

Nonintrusive methods, such as visual surveys and surface clearance operations, have a low potential of impacting biological resources. The noise generated by the field crews and their equipment could disrupt wildlife at the site.

Intrusive activities have a small, temporary, localized impact at the site of the anomaly investigation. Although the disruption should only be temporary, minor disturbances may occur to wildlife foraging and cover requirements.

Minor vegetation damage could occur should items with only a partial aboveground presence require excavation to facilitate removal of potential MEC located at the excavation site. This minor vegetation disturbance may reduce the available foraging habitat and potentially decrease raptor prey populations. This disturbance would be temporary and is offset because suitable foraging habitat is present in adjacent areas. The project site will be reconnoitered for federal special status sensitive listed taxa prior to any work activity ensuing. All special status sensitive listed taxa will be avoided, thus there will be no effect to the species or their habitat.

#### **6.4.3.1.2      *Worker Education Briefing***

Prior to commencement of field activities, all on-site personnel will be briefed on health and safety issues and the ecology of sensitive species in the area. Methods for minimizing potential impacts to these species by avoidance will form an integral part of the on-site training.

#### **6.4.3.1.3      *Special Status Listed Taxa Avoidance***

Incorporated into the field activities will be avoidance of federal special status listed taxa. To avoid adverse effects to any federally listed threatened or endangered species, bird species protected under the Migratory Bird Treaty Act, and wildlife habitat in general, no activity or action will be taken that “may effect” their population or habitat, and field teams will be trained on endangered local flora and fauna of CSLO. A qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting, as described in Table 6-2.

**Table 6-2 Possible Mitigation Strategies for Biological Resources<sup>1</sup>**

Strategy	Avoidance	Monitoring
Procedure	Pre-surveys for sensitive resources.	Part-time monitor and qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting.
	Worker education	On-call monitor
Effectiveness	Biological resources can be identified and avoided during flowering and breeding and nesting seasons.	Outside the flowering and breeding and nesting seasons, the non-special status listed resources will be avoided to the extent practicable. Outside the flowering and breeding and nesting seasons, the non-special status listed resources will be avoided to the extent practicable. A qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting.
	Educate field personnel to environmental sensitivities. Good for avoiding unanticipated resources.	Most resources could be avoided through preserving and marking; possible hazard to individual species

Note:

<sup>1</sup>ERRG, July 2010

**6.4.3.1.4 Bird Species**

Field activities will avoid the flowering and nesting season for all bird taxa. Pre-project surveys will be conducted prior to and after the activities nesting season (March–September) in areas where transects may affect breeding species. All activity will be confined to after the spring and early summer flowering period. A qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting, as described in Table 6-2.

**6.4.3.1.5 Listed Plant and Animal Species**

Field activities will avoid the nesting season for all bird taxa. Pre-project surveys will be conducted prior to and after the activities flowering and nesting season (March–September) in areas where transects may affect breeding species. All activity will be confined to after the spring and early summer flowering period. A qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting, as described in Table 6-2.

### **6.4.3.2 Avoid Vegetation Impacts**

During field operations, only areas necessary to conduct surface clearance investigations and MEC disposal will be disturbed. Equipment staging areas will be established, when possible, in already disturbed sites. All listed taxa will be avoided. No vegetation will be removed during field operations. A qualified USACE biologist knowledgeable and experienced with plant and animal ecology will perform the necessary biological monitoring, observations, and reporting, as described in Table 6-2.

### **6.4.3.3 Mitigation Measures**

The application of mitigation measures, if required, may reduce impacts to plant and wildlife species as a result of project-related activities, as described in Table 6-2. The technical approach to field operations specifies avoidance of all listed biological resources.

## **6.5 MITIGATION**

Other foreseeable impacts to the environment can be created from normal logistical activities including waste removal and disposal, dust and emissions, storage areas and temporary facilities, access routes to the sites and post activity clean up. The following are mitigation measures that are to be followed to reduce impacts to the sites and logistical areas

### **6.5.1 Manifestation, Transportation, and Disposal of Wastes**

Waste generated during the day-to-day activities will be collected and removed from the site at the end of each day, and any IDW will be managed and disposed as described in the IDW Plan in Section 3-8. Upon leaving the site, all waste will be disposed of in dumpsters or other proper receptacles at the project office location. All pin flags and other marking devices will be collected and removed from the site when they are no longer needed.

MD that is collected during each day will be transported to the project's MD Storage Area location and placed in the bin/container designated for MD.

### **6.5.2 Burning Activities**

No burning activities will be taking place during this project.

### **6.5.3 Dust and Emission Control**

Survey activities will likely generate minimal fugitive dust and other emissions. The survey methods may include:

- Geophysical surveys with hand-help equipment or pulled by ATV;
- “Mag and Dig” survey method where personnel will have handheld metal and other detectors and dig up contacts using hand tools such as shovels;
- MC sampling using hand held tools such as trowels, shovels, an/or hand augers; and,
- BIPs - In-place detonation of UXO/MEC too hazardous to move.

Mitigation measures for these activities include driving any motorized vehicle used on site at a slow speed and digging only enough soil to uncover the contact or anomaly. In the event of BIPs, mitigation measures will include watering down area around the UXO/MEC to limit the amount of dust produced by the detonation. Other activities that may generate dust or emissions are traveling to and from the sites in the support vehicles. The survey crews will drive at speeds that minimize dust generation along the dirt roads in the MRS.

### **6.5.4 Spill Control and Prevention**

All vehicle fueling and maintenance of project vehicles will be conducted off-site at paved and contained areas. If a severe leak of fuel or other vehicle fluids occurs the following procedures will be accomplished:

- Berm the fuel spill site with dirt so that the fuel or fluid does not spread;
- Apply oil-absorbing material to the spill (each vehicle will be equipped with a spill kit);
- Report the spill to the SUXOS immediately; and,
- Remove the contaminated soil and dispose in an approved landfill.

### **6.5.5 Storage Areas and Temporary Facilities**

Storage areas and temporary facilities for logistic support will be located in off-site compounds that provide easy access to the project location. These sites will be utilized to store project equipment, such as vehicles, temporary offices for personnel and project management, dumpsters and roll-off bins for waste and UXO related material, and a secured area for the project explosive magazine.

Mitigation measures such as temporary fencing, erosion control, and other site specific measures may be necessary if the project base is not within an existing secured compound.

#### **6.5.6 Access Routes**

Mitigation measures regarding access routes will be dependent upon the protected status of the site and the protected status of the surrounding environment. In general, field crews will travel to and from the site only on established roadways (dirt or paved), unless the site is within a designated wilderness area. Wilderness designation will require the field crews to leave the support vehicles outside the boundaries of the wilderness site and walk in to the site. All motorized equipment will be left outside the boundaries of these designated areas.

#### **6.5.7 Trees and Shrubs Protection and Restoration**

Vegetation removal (trees and/or shrubs) will not be performed during the RI. Minimal vegetation impacts will occur if a contact or anomaly is located below the ground surface at the base of a tree or shrub. Field crews will remove as little soil as necessary to access the contact while working around any vegetation. Vegetation will not be removed to allow transects to pass through the area. If a large amount of vegetation is encountered while performing a transect, the field crew will go around the vegetation, and the location of the vegetation will be noted in the field log and transect log. The crew will continue the transect once they have passed around the vegetation.

#### **6.5.8 Water Run-on and Run-off**

The RI/FS field investigation will not alter drainage patterns therefore no mitigation procedures are required to control water run-on or run-off.

#### **6.5.9 Decontamination and Disposal of Equipment**

The project does not involve chemicals or practices that require decontamination; therefore, this section is not applicable. Decontamination procedures related to MC sampling are included in the Appendix E, Sampling and Analysis Plan.

#### **6.5.10 Minimizing Areas of Disturbance**

Efforts will be made to minimize any unnecessary disturbance within the MRS. Any disturbance to habitats required by field investigation activities will be carefully recorded and documented by the project biologist prior to ground disturbing activities. Photographs, drawings, or video recordings, and GPS readings will all be used to restore disturbed areas as close as possible to their original contours, soil strata, and compaction.

#### **6.5.11 Post-activity Cleanup**

Post-activity cleanup will be accomplished on a daily basis as field crews collect solid waste associated with lunch breaks and other daily breaks and remove them from the site. Solid waste will be disposed of in an approved off-site location.

#### **6.5.12 Air Monitoring Programs**

Air monitoring programs are not necessary and will not be implemented for the RI/FS.

(Intentionally blank)

## **7.0 PROPERTY MANAGEMENT PLAN**

A Property Management Plan is not required by the task order.

(Intentionally blank)

## **8.0 INTERIM HOLDING FACILITY SITING PLAN FOR RCWM PROJECTS**

An Interim Holding Facility Siting Plan for RCWM Projects is not required by the task order.

(Intentionally blank)

## **9.0 PHYSICAL SECURITY PLAN FOR RCWM PROJECT SITES**

A Physical Security Plan for RCWM Project Sites is not required by the task order.

(Intentionally blank)

## 10.0 REFERENCES

- Title 29 Code of Federal Regulations (CFR) 1910, Occupational Safety and Health Administration (OSHA) General Industry Standards
- Title 29 CFR, Construction Industry Standards
- Title 29 CFR 1910.120/29 CFR 1926.65 – Hazardous Waste Site Operations and Emergency Response
- Title 40 CFR 300, National Contingency Plan
- Barbour, M, Schoenherr, A., and Keeler-Wolf, T., 2007. *Terrestrial Vegetation of California*, 3<sup>rd</sup> Edition. University of California Press. July
- Banks Environmental, 2007. Water Well Report Camp San Luis Obispo, California. 30 August.
- CEHNC, 2005. Sampling and Analysis Plan Military Munitions Response Program Site Inspections, September.
- CEMVR, 1994. Archives Search Report Findings for Camp San Luis Obispo, San Luis Obispo, California. September.
- CEMVR, 2004. Archives Search Report Supplement for Camp San Luis Obispo, San Luis Obispo, California. November.
- CEMVS, 2006. Preliminary Historical Records Review Camp San Luis Obispo and Baywood Park Training Area, San Luis Obispo, California. 6 July.
- CEMVS, 2010. DRAFT Military Munitions Response Program Historic Map and Aerial Photo Analysis, Camp San Luis Obispo, California. FUDS Property Number J09CA203105. 11 April.
- California Department of Game and Fish, 2006. *Habitat Conservation Planning Branch*. [http://www.dfg.ca.gov/wildlife/nongame/t\\_e\\_spp/index.html](http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/index.html). Accessed January 2011.
- California Department of Health Services (CDHS), 2007. Drinking Water Source Assessment and Protection Program. Source Water Assessments-Public Access. <http://swap.ice.ucdavis.edu/TSinfo/TSSystemc.asp?myCounty=40>. Accessed January 2011.
- California Environmental Protection Agency, Central Coast Regional Water Quality Control Board. Basin Plan. [http://www.waterboards.ca.gov/centralcoast/publications\\_forms/publications/basin\\_plan/index.shtml](http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/index.shtml). Accessed January 2011.

- California Historic Districts, 2006. *Historic Districts in San Luis Obispo County*.  
<http://www.historicdistricts.com/ca/San+Luis+Obispo/districts.html>.
- California Natural Diversity Database, 2010. <http://www.dfg.ca.gov/biogeodata/cnddb/>.  
Accessed January 2011
- California Office of Historic Preservation, 2006. *Central Coastal Information Center. Department of Anthropology, University of California-Santa Barbara*.  
[http://ohp.parks.ca.gov/default.asp?page\\_id=1071](http://ohp.parks.ca.gov/default.asp?page_id=1071). Accessed January 2011.
- California State, 2004. “San Luis Obispo Valley Groundwater Basin.” *Groundwater Bulletin 118*.
- California Regional Water Quality Control Board (RWQCB), 1986. “The Designated Level Methodology for Waste Characterization and Cleanup Level Determination.” Central Valley Region. October. Updated June 1989. Available Online at:  
<[http://www.waterboards.ca.gov/centralvalley/plans\\_policies/guidance/dlm.pdf](http://www.waterboards.ca.gov/centralvalley/plans_policies/guidance/dlm.pdf)>.
- Carollo Engineers, 2003. State of California, California Men’s Colony/Corrections and Camp San Luis Obispo/Military Water Distribution System Evaluation, September.
- CEMVR, 2004. “Archives Search Report Supplement for Camp San Luis Obispo, San Luis Obispo, California.” November.
- City of San Luis Obispo, 2006. *Annual Water Quality Report*, Water testing performed in 2005.
- City of San Luis Obispo, 2007c. <http://www.slocity.org/utilities/sources.asp> and  
<http://www.slocity.org/utilities/distribution.asp>. Accessed January 2011.
- Department of Defense Explosives Safety Board, 2004. “Minimum Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel.” Technical Paper 18. December 20. Available Online at:  
<<http://www.ddesb.pentagon.mil/techpapers.html>>.
- Defense Environmental Programs (DEP), 2010. *Annual Report to Congress: Fiscal Year 2009*. <http://www.denix.osd.mil/arc/ARCFY2009.cfm>
- U.S. Army Corp of Engineers, Engineering Manual 385.1.1 “Safety and Health Requirements Manual.” September 15. Available Online at:  
<http://usace.army.mil/CESO/Documents/EM385-1-1FINAL.pdf>
- EM 1110-1-4009 (15 June 2007) Engineering and Design – Ordnance and Explosives Response
- EP 1110-1-18 (4 December 2007) Engineering and Design – Ordnance and Explosives Response

- ERRG, 2010. "Final Time-Critical Removal Action Work Plan Former Camp San Luis Obispo Mrs-05, San Luis Obispo, California". July.
- ERRG, 2011. "Final Time-Critical Removal Action Final Report Former Camp San Luis Obispo Mrs-05, San Luis Obispo, California". In Press.
- Federal Acquisition Regulation Clause 52.236.13, Accident Prevention
- National Oceanic and Atmospheric Administration, 2006. Coastal Zone Management Program, Office of Ocean and Coastal Resource Management, National Ocean Service. <http://coastalmanagement.noaa.gov/>. Accessed January 2011.
- National Park Service, 2006a. *List of National Parks by State*. <http://www.nps.gov/applications/parksearch/state.cfm?st=ca>. Accessed January 2011.
- National Park Service, 2006b. *National Register Information System, National Register of Historic Places*. <http://www.nps.gov/history/nr/>. Accessed January 2011.
- National Park Service, 2006c. *National Register Information System, National Register of Historic Districts*. <http://www.historicdistricts.com/ca/San+Luis+Obispo/state.html>. Accessed January 2011.
- National Park Service, 2006d. *List of National Historic Landmarks, National Historic Landmarks Program*. <http://www.cr.nps.gov/nhl/designations/Lists/CA01.pdf>. Updated June 2010. Accessed January 2011.
- National Park Service, 2006e. *List of National Heritage Areas, National Heritage Areas Program*. <http://www.cr.nps.gov/heritageareas/>. Accessed January 2011.
- NIOSH/OSHA/USCG/EPA (DHHS) (NIOSH) Publication #85-115) (OCT 85), Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities
- Office of the Deputy Undersecretary of Defense. 2001. Management Guidance for the Defense Environmental Restoration Program (DERP). September.
- Office of the Deputy Undersecretary of Defense, 2005. *Munitions Response Site Prioritization Protocol Primer*. Prepared by the Installation and Environment, Office of Environmental Management. December.
- Parsons Corporation, 2007. "Final Site Inspection Report, Former Camp San Luis Obispo, San Luis Obispo, California." Prepared for U.S. Army Corps of Engineers Southwest IMA Region. September.
- Parsons, 2006b. Final Technical Project Planning (TPP) Memorandum and Associated Documentation. Former Camp San Luis Obispo, San Luis Obispo, California. October.

Parsons, 2007. Final Site Specific Work Plan Addendum to the Programmatic Work Plan, Former Camp San Luis Obispo, San Luis Obispo, California. April.

San Luis Obispo County, 2007c. Integrated Regional Water Management Plan.  
<http://www.slocountywater.org>. Accessed January 2011.

San Luis Obispo County Parks, 2006.  
<http://www.slocountyparks.com/facilities/index.htm#webmap>. Accessed January 2011.

State of California, 2004. San Luis Obispo Valley Groundwater Basin, California's Groundwater Bulletin 118. Last update 27 February.

State of California, 2007. [http://waterboards.ca.gov/centralcoast/publications\\_forms/publications/basin\\_plan/index.shtml](http://waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/index.shtml). Accessed January 2011.

TM 9-1950, Rockets, February 1958.

U.S. Army Corps of Engineers (USACE), 1998. "Technical Project Planning (TPP) Process," EM 200-1-2. August. Available Online at: <<http://140.194.76.129/publications/engine-manuals/em200-1-2/entire.pdf>>.

USACE, 2001. Interim Guidance, Ordnance and Explosives Risk Impact Assessment. 27 March.

USACE, 2001. "Engineering and Design – Requirements for the Preparation of Sampling and Analysis Plans." EM 200-1-3. February 1. Available Online at: <<http://140.194.76.129/publications/engine-manuals/em200-1-3/toc.htm>>.

USACE, 2004. Formerly Used Defense Sites (FUDS) Program Policy, Engineer Regulation (ER) 200-3-1. 10 May.

USACE, 2005. Final Programmatic Sampling and Analysis Plan: Military Munitions Response Program Site Inspections. Prepared by USACE Engineering Support Center, Huntsville. September.

USACE Huntsville, 2005. "Military Munitions Center of Expertise [CX] Technical Update, Munitions Constituent Sampling." March. Available online at: <[http://www.hnd.usace.army.mil/oew/MMTechUpdates/MC\\_Tech\\_Update\\_Final.pdf](http://www.hnd.usace.army.mil/oew/MMTechUpdates/MC_Tech_Update_Final.pdf)>.

USACE, 2006. Screening-Level Ecological Risk Assessments for FUDS MMRP Site Inspections. Prepared by the USACE HTRW CS. 11 August.

U.S. Census Bureau, 2005-2009 Estimates. American Fact Finder.  
<http://factfinder.census.gov>. Accessed January 2011.

- U.S. Army Corps of Engineers, Rock Island District (CEMVR), 1994. "Archives Search Report Findings for Camp San Luis Obispo, San Luis Obispo, California." September.
- USACE, 2003. MMRP-09-002, Data Item Description, "Explosives Management Plan." August 19. Available Online at:  
<[http://www.hnd.usace.army.mil/oew/policy/dids/FY09\\_MMRP\\_DIDS/MMRP-09-002.pdf](http://www.hnd.usace.army.mil/oew/policy/dids/FY09_MMRP_DIDS/MMRP-09-002.pdf)>
- USACE, 2003b. MR-005-07, Data Item Description, "Geospatial Information and Electronic Submittals." December 1. Available Online at:  
<<http://www.hnd.usace.army.mil/oew/policy/dids/FY04DIDS/MR/mr005-07.pdf>>.
- USACE, 2004. "Munitions and Explosives of Concern (MEC) Support During Hazardous, Toxic, and Radioactive Waste (HTRW) and Construction Activities." EP 75-1-2. August 1. Available Online at: <<http://140.194.76.129/publications/eng-pamphlets/ep75-1-2/toc.htm>>.
- USACE, 2009. MMRP-09-001, Data Item Description, "Work Plans." August 19. Available Online at:  
<[http://www.hnd.usace.army.mil/oew/policy/dids/FY09\\_MMRP\\_DIDS/MMRP-09-001.pdf](http://www.hnd.usace.army.mil/oew/policy/dids/FY09_MMRP_DIDS/MMRP-09-001.pdf)>.
- U.S. Department of Agriculture Forest Service, 2006. <http://www.fs.fed.us>. Accessed January 2011.
- U.S. Environmental Protection Agency (USEPA), 1989. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), Interim Final*. Office of Emergency and Remedial Response. EPA/540/1-89/002. December.
- USEPA, 2006. *Guidance for Systematic Planning Using the Data Quality Objectives Process*, EPA QA/G-4, EPA/240/B-06/001. February.
- USEPA, 2010. "Regional Screening Levels (Formerly PRGs), Screening Levels for Chemical Contaminants." May. Available Online at:  
<<http://www.epa.gov/region09/superfund/prg/>>.
- U.S. Fish and Wildlife Service, 2006a. *Wetlands Online Mapper*, National Wetlands Inventory. <http://wetlandsfws.er.usgs.gov/wtlnds/launch.html>. Last modified 1 October 2010. Accessed January 2011.
- U.S. Fish and Wildlife Service, 2011. *Threatened and Endangered Species System (TESS) California*. Listings by State and Territory as of 11 January 2011.  
[http://ecos.fws.gov/tess\\_public/pub/stateListingIndividual.jsp?state=CA&status=listed](http://ecos.fws.gov/tess_public/pub/stateListingIndividual.jsp?state=CA&status=listed)  
. Updated 11 January 2011. Accessed January 2011.
- U.S. Fish and Wildlife Service, 2011. *National Wildlife Refuge System*.  
<http://www.fws.gov/refuges/profiles/ByState.cfm?state=CA>. Accessed January 2011.

U.S. Geologic Survey (USGS), 1995. *Groundwater Atlas of the United States: California, Nevada*. Prepared by Michael Planert and John S. Williams.  
[http://capp.water.usgs.gov/gwa/ch\\_b/](http://capp.water.usgs.gov/gwa/ch_b/). Accessed January 2011.

September 30, 2016

Ryan Lodge  
California Regional Water Quality Control Board  
Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, California 93401-7906

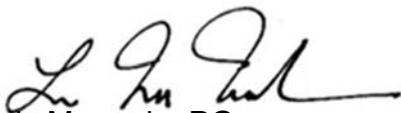
**Subject:** 2016 Annual Groundwater Monitoring and Sampling, and Wet Weather Preparedness Report  
Revised General Monitoring and Reporting Program No. R3-2004-0006  
Sutter Avenue Closed Class III Landfill  
Camp San Luis Obispo, San Luis Obispo County, California  
SWRCB Global ID L10002533210

Dear Mr. Lodge:

Please find enclosed the *2016 Annual Groundwater Monitoring and Sampling, and Wet Weather Preparedness Report* for former Sutter Avenue Landfill, located at Camp San Luis Obispo, California. The landfill is located in San Luis Obispo County. The Annual groundwater monitoring and sampling event and wet weather preparedness inspections were conducted at the landfill in 2016 to comply with the requirements of the Central Coast Regional Water Quality Control Board (CCRWQCB) *General Monitoring and Reporting Program No. R3-2004-0006 for Post-Closure Maintenance of Closed, Abandoned or Inactive Nonhazardous Waste Landfills within the Central Coast Region*, modified for the Sutter Avenue Closed Class III Landfill on July 5, 2007 (MRP). The June 8, 2015 modification to MRP calls for the annual groundwater sampling event to be performed in July; however, the sampling event was conducted on August 4, 2016, in order to improve field scheduling efficiencies. Wet weather preparedness inspection reports and descriptions of maintenance activities are also included in the report as suggested in the June 8, 2015 modification.

All groundwater analytical results are consistent with historical data. No violations were observed or reported since the last submittal. To the best of my knowledge the report is true, complete, and correct. If you have any questions, please contact me at (916) 419 - 7184.

Sincerely,



Luis Mercado, PG  
Senior Geologist

cc: John Reid, Camp San Luis Obispo  
Brian Pierskalla, CA ARNG

This page intentionally left blank.

# **2016 Annual Groundwater Monitoring and Sampling, and Wet Weather Preparedness Report**

**Sutter Avenue Landfill  
California Army National Guard  
Camp San Luis Obispo, California**

**SWRCB Global ID L10002533210**

***Prepared For:***



**California Army National Guard, Environmental Department  
3900 Roseville Road  
North Highlands, CA 95660**

Agreement No. E0865

***Prepared By:***



**ECM Consultants  
3525 Hyland Avenue, Suite 200  
Costa Mesa, CA 92626**

---

**September 30, 2016**

This page intentionally left blank.

---

# 2016 Annual Groundwater Monitoring and Sampling, Wet Weather Preparedness Report California Army National Guard Sutter Avenue Landfill Camp San Luis Obispo California

**Prepared by:**

Rafael Macedo  
Project Engineer



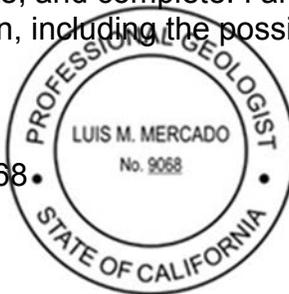
9/30/2016

Signature/Date

"I certify under penalty of perjury I have personally examined and am familiar with the information submitted in this document and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of a fine and imprisonment."

**Reviewed/Approved by:**

Luis Mercado, PG, No. 9068  
Senior Engineer



9/30/2016

Signature/Date

This page intentionally left blank

---

---

## TABLE OF CONTENTS

Acronyms and Abbreviations.....	iii
1 Introduction .....	1
1.1 Site History .....	1
1.2 Site Geology and Hydrogeology.....	4
2 Groundwater Monitoring Activities.....	5
2.1 Groundwater Gauging and Sampling .....	5
2.2 Groundwater Sample Analysis .....	6
3 Groundwater Monitoring Results .....	7
3.1 Groundwater Elevation and Gradient .....	7
3.2 Groundwater Analytical Results .....	7
3.2.1 Volatile Organic Compounds.....	8
3.2.2 General Chemistry Parameters .....	8
3.2.3 Field Parameters .....	8
4 Summary of Groundwater Monitoring Results.....	9
5 Quality Assurance and Quality Control.....	10
5.1 Groundwater Sampling Event QA/QC Results.....	10
6 Wet Weather Preparedness Landfill Observation and Maintenance .....	11
6.1 Sutter Avenue Landfill .....	11
6.1.1 Soil Cover and Landfill Cap .....	11
6.1.2 Drainage.....	12
6.2 Rainfall Summary .....	13
7 Summary of Groundwater Monitoring and Wet Weather Preparedness Activities	14
7.1 Analytical Results .....	14
7.2 Overall 2016 Compliance Summary.....	14
8 References.....	16

## FIGURES

- Figure 1 Site Vicinity Map  
Figure 2 Site Map Showing Soil Gas and Groundwater Monitoring Points  
Figure 3 Groundwater Elevation Contours – August 4, 2016

## **TABLES**

Table 1	Monitoring Well Completion Details
Table 2	Groundwater Level Data
Table 3	Volatile Organic Compounds in Groundwater Samples
Table 4	1,4-Dioxane in Groundwater Samples
Table 5	General Chemistry Parameters in Groundwater Samples
Table 6	Field Parameters in Groundwater Samples

## **APPENDICES**

Appendix A	Groundwater Monitoring Well Purging and Sampling Forms
Appendix B	Hydrograph and Summary of Water Level Data
Appendix C	Historical Groundwater Monitoring and Analytical Data Tables
Appendix D	Laboratory Analytical Reports and Chain-of-Custody Records
Appendix E	Landfill Inspection Photographs
Appendix F	Landfill Inspection Documentation
Appendix G	Rainfall Data Sheets

---

## Acronyms and Abbreviations

1SA14	2014 first semiannual
1SA15	2015 first semiannual
2SA15	2015 second semiannual
µg/L	micrograms per liter
µS/cm	microsiemens per centimeter
°C	degrees Celsius
amsl	above mean sea level
bgs	below ground surface
CA ARNG	California Army National Guard
CalRecycle	California Department of Resources Recycling and Recovery
CCRWQCB	Central Coast Regional Water Quality Control Board
CFR	Code of Federal Regulations
COC	constituents of concern
CSLO	Camp San Luis Obispo
DO	dissolved oxygen
DPW	Directorate of Public Works
EC	electrical conductivity
ECM	ECM Consultants
Eco	Eco & Associates, Inc.
FML	flexible-membrane liner
ft/ft	feet per foot
HDPE	high-density polyethylene
J	estimated (result between detection limit and reporting limit)
LCS/LCSD	laboratory control sample and duplicate
MRP	Monitoring and Reporting Program
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
MS/MSD	matrix spike/matrix spike duplicate
N	nitrogen
NTU	Nephelometric Turbidity Units
pH	potential of hydrogen
QA	quality assurance
QC	quality control
QCEB	quality control equipment blank
QCTB	quality control trip blank
RPD	relative percentage difference
Star	Star Resources Corporation, Inc.
TDS	total dissolved solids
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

## 1 INTRODUCTION

In accordance with Agreement No. E0865, ECM Consultants (ECM) prepared this *2016 Annual Monitoring and Sampling, and Wet Weather Preparedness Report* for the California Army National Guard (CA ARNG) to document the annual groundwater monitoring and sampling results and the current condition of the former Sutter Avenue Class III Landfill (known henceforth as the “landfill”) (**Figure 1**) located at Camp San Luis Obispo in San Luis Obispo County, California. This report details the groundwater monitoring activities performed during the 2016 annual event completed by ECM. It also includes wet weather preparedness inspections and activities completed between October 1, 2015 and September 30, 2016. Landfill gas detection results are not presented in this report but can be found in the landfill gas monitoring reports submitted semiannually.

Camp San Luis Obispo (CSLO) was established in 1928 as the original home of the CA ARNG. It was then known as Camp Merriam and originally occupied approximately 2,000 acres of ranch land secured by the State of California on a lease-purchase basis. By 1940, CSLO grew to 5,800 acres of state-owned land. CSLO was leased to the federal government between 1940 and 1947 for use as a military training facility during World War II, during which time the facility expanded to approximately 15,000 acres of both state and federal land. In 1947, the state-owned portion of the facility reverted to state control, and the federal land was “ceded to the state in lieu of restoration” (Ecology and Environment, Inc., 1991). In 1951, the U.S. Army opened its Southwest Signal Center at CSLO, where it trained soldiers during the Korean War. In 1953, part of CSLO remained under U.S. Army control in stand-by readiness as a military mobilization site. CSLO returned to state control on July 1, 1965 (England Geosystem, 2004).

CSLO currently occupies approximately 5,320 acres and provides operational, training, and logistical support to a wide variety of civilian and military agencies at the federal, state, and local levels. Cuesta College, the California Men’s Colony, California Polytechnic State University at San Luis Obispo, and other state and local government agencies now occupy land that was formerly part of CSLO. Also, portions of the current facility are leased to other state agencies, such as the California Department of Forestry and the California Conservation Corps.

### 1.1 Site History

The Sutter Avenue Landfill is a 5.2-acre, closed Class-III landfill that was operated by the CA ARNG and is located on CSLO, a CA ARNG operated facility. The landfill is located in the southwest corner of CSLO and is bounded by Poison Oak Creek to the southwest, Sutter Avenue to the north, a former California Department of Transportation facility to the north and east, and privately owned range land to the south (**Figure 2**). The majority of waste-disposal activities in the general area of the landfill occurred between 1970 and 1985, although a final cover system was not constructed until 1996-1997.

A trench-and-cover waste-disposal method was used at the landfill. The trenches were reportedly approximately 200 to 300 feet long, 8 feet wide and 8 feet deep (State of California Military Department, 1976). Reportedly, the trenches were covered with at least 6 inches of daily cover and a minimum of 2 feet of compacted earth as an interim cover. In addition, inspections of the disposal were conducted at a frequency of at least three times per week by the Facilities Engineer and monthly by the San Luis Obispo Division of Environmental Health (State of California Military Department, 1976; State of California Military Department, 1977; Geosystem Consultants, Inc., 1998).

Records indicate that the type of waste material deposited at the Site consisted of the following: decomposable organic refuse (such as ordinary household, industrial, agricultural and commercial refuse), garbage and scrap metal (US Army Environmental Hygiene Agency, 1986; Staal, Gardner & Dunne, Inc. [SGD], 1989; Ecology & Environment, Inc., 1991). Reportedly, less than one half of the landfill's original capacity of approximately 36,000 cubic yards was used (SGD, 1989; ERM-West, Inc., 2003).

The final cover was constructed over the landfill in general accordance with a Central Coast Regional Water Quality Control Board (CCRWQCB)-approved final closure and post-closure maintenance plan (Geosystem Consultants, Inc., 1995). The final cover system consisted of a 24-inch-thick foundation layer, a 60-mil barrier layer of high-density polyethylene (HDPE) with flexible membrane liner (FML) texture on each side, a lateral drainage layer of non-woven polypropylene fabric and an 18-inch-thick vegetative cover layer. To minimize the volume of fill required, the cover was designed with 4 percent slopes and was "recessed" into the existing ground surface. A toe drain around the perimeter of the final cover was to serve the dual purpose of anchoring the HDPE FML and draining water transmitted through the lateral drainage layer (Geosystem Consultants, Inc., 1995).

The former Sutter Avenue Landfill is fenced off, secured and not readily accessible to unauthorized personnel. In addition, warning notices are posted along the fence, indicating that the landfill is closed and that no wastes of any description should be deposited within the landfill boundary.

In late August 2013, CA ARNG was notified that the United States Army Corps of Engineers (USACE) no longer considered the former Sutter Landfill to be a Formerly Used Defense Site and eliminated the funding for compliance efforts at the landfill previously conducted by Eco and Associates, Inc. (Eco) for calendar year 2013. Upon notification from USACE, CA ARNG completed a dry season landfill inspection on 30 September 2013 and a full round of groundwater sampling in December 2013 to constitute the second semiannual monitoring event in accordance with the Monitoring and Reporting Program (MRP).

From 2009 through the 2014 first semi-annual (1SA14) period, Eco was under contract to conduct groundwater monitoring to comply with MRP. During the period from August

2014 through September 2015, Star Resources, Inc. (Star). conducted the groundwater sampling activities at the site. In February 2015, Star conducted the 2015 first semi-annual (1SA15) groundwater monitoring and sampling activities at the landfill (Star, 2015).

On June 8, 2015, CA ARNG received notification from CCRWQCB that the MRP had been revised in order to keep in line with current landfill site conditions. The following changes were made to the MRP:

- Reduction in sampling frequency for wells MW-1, MW-3, MW-6, MW-7, and MW-8 from semi-annual to annual for measurement of groundwater elevations and MRP's Table 1 field and laboratory parameters;
- The Annual Monitoring Period changed from January 1 – December 31 to July 1 – June 30;
- The Report Due Date changed from January 31 to September 30. This revision allows CA ARNG to include the Wet Weather Preparedness Report with the Annual Groundwater Monitoring and Sampling Report;
- Upgradient detection wells MW-2, MW-4, and MW-5 to be removed from the monitoring program and should be properly destroyed;
- Wells MW-9 and MW-10 would only be sampled when volatile organic compounds are detected above the practical quantitation limits in well MW-6; and,
- Passive gas vent wells V1 through V9 to be removed from the monitoring program and should be properly destroyed.

The reduction in sampling frequency resulted completion of the second semiannual 2015 sampling event in July 2015, instead of August 2015. Sutter Avenue Landfill activities completed prior to January 1, 2015 were reported in the *Groundwater Monitoring and Sampling Report, 2014 Annual Summary* (Star, 2015a). The event originally planned as the 2015 second semi-annual (2SA15) event was actually the annual 2015 event (Star, 2015b).

Between October 2015 and September 2016, CA ARNG conducted at a minimum, quarterly dry season (May 1 to September 30) landfill inspections, monthly wet season (October 1 to April 30) landfill inspections, and additional landfill inspections following each storm event that produced a minimum of 1 inch of rain within a 24-hour period. Monthly rainfall data was obtained from the Rancho de Caballo weather station KCASANLU47 located approximately 2.85 miles east of the landfill (see Section 2.2 for more information).

Constituents of concern (COCs) listed in Table 2 of MRP that are not analyzed as part of the routine monitoring program are to be analyzed once every five years at each of the landfill monitoring points listed in MRP (see 40 Code of Federal Regulations [CFR], Part 258). If there is an indication of release, then the monitoring must include the indicated

COCs. All existing wells were last sampled for COCs by Eco during the 1SA14 monitoring event completed on February 27, 2014.

The current regulatory point of contact information is provided below:

- CCRWQCB, Ryan Lodge; (805) 549 - 3506
- California Department of Resources Recycling and Recovery (CalRecycle), Catherine Blair; (916) 341 - 6803

## 1.2 Site Geology and Hydrogeology

The Camp SLO area is located on Mesozoic metamorphic rocks of the Franciscan Formation, and undifferentiated Mesozoic ultramafic rocks (Society of Economic Paleontologists and Mineralogists [SEPM], 1982). The Franciscan Formation is a *mélange* consisting of a disordered arrangement of sandstone and associated shale, altered volcanic rocks, and lesser amounts of chert, serpentine, diabase gabbro, conglomerate, and blueschist facies metamorphic rocks (Hart, 1973). The Franciscan sandstone, which comprises a large portion of the formation, is a massive grayish-brown greywacke with little or no bedding. Studies of the geologic history and setting of the Franciscan Formation give evidence that the *mélange* was formed in the late Mesozoic in the subduction zone between continental and oceanic plates.

Presently, the formation appears as small to large fault blocks ranging in size from a few inches to half mile in length. The fault blocks typically appear as rounded monoliths that stand out above a generally hummocky terrain (Hart, 1973). The Mesozoic ultramafic rocks that crop out in the area consist of serpentine and intrusive igneous rocks. The serpentine was derived from olivine and pyroxene-rich ultramafic rocks. Dark green and gray diabase is found intermingled with the serpentine. Recent alluvium is noted along modern stream channels, creeks, and similar tributaries. The Quaternary-aged alluvial deposits are composed of Franciscan-derived sediments (quartz, quartzite, serpentinite) and fine-grained sediment (Hart, 1973).

The major structural features of the area are right-lateral, strike-slip faults having near vertical fault planes, which are generally three to five miles in length. The faults are believed to be associated with the Rinconada fault zone to the east. The faults truncate all the pre-Quaternary rocks in the area (Hart, 1973).

The landfill is located in the southwest corner of CSLO, in a flat, low-lying area of the Poison Oak Creek valley between Cerro Romualdo and Conner Peak. The landfill is bounded by an unnamed tributary of Poison Oak Creek to the southwest. The landfill ranges in elevation from approximately 232 feet above mean sea level (amsl) on the east to 222 feet amsl on the west. It is underlain by Holocene-aged alluvial soils consisting of clay, silty clay, and sandy clay inter-bedded with sand and gravel derived from bedrock formations that flank the landfill.

The Mesozoic-age Franciscan Formation and associated ultramafic rocks (on which CSLO is located) are generally not recognized as water-bearing formations. Water-bearing formations relatively near to the site are found in the Los Osos Valley, a 20-square mile coastal drainage basin composed of younger alluvium (Department of Water Resource [DWR] Bull. No. 118). The major portion of the drainage basin is located 2 to 3 miles south of the landfill.

Groundwater in the Los Osos Valley is found at depths of approximately 10 to 50 feet below ground surface (bgs). The water-bearing zone is estimated to extend to a depth of 200 feet. The water from the Los Osos Basin has been extracted primarily for irrigation and municipal purposes.

The groundwater flow direction beneath the Site is north-northwesterly along an unnamed tributary of Chorro Creek located between Cerro Romualdo and Conner Peak. Groundwater levels beneath the landfill fluctuate seasonally and yearly, and have ranged from approximately 5 to 24 feet bgs in well MW-8 (upgradient) to approximately 14 to 40 feet bgs in MW-9 (downgradient).

Cerro Romauldo is flanked by the Chorro Creek valley on the north. Chorro Creek flows westward through this valley to Morro bay. The flow of water in Chorro Creek is usually seasonal, but often flows year round.

Chorro Creek and its tributaries flow down Cuesta ridge into CSLO. This watershed has been significantly disturbed by quarrying and mining, military maneuvers, and by the 1994 Highway 41 fire (Cal Poly Land, 2016 and CA ARNG, 2014).

## **2 GROUNDWATER MONITORING ACTIVITIES**

Activities associated with the 2016 annual monitoring event included the gauging of groundwater monitoring wells for depth to groundwater and the collection and analysis of groundwater samples. All sampling activities associated with the monitoring event were performed in accordance with the latest modified MRPs (No. R3-2004-0006), and ECM's Site-Specific Health and Safety Plan (ECM, 2016).

### **2.1 Groundwater Gauging and Sampling**

The seven groundwater monitoring wells currently being monitored as part of the revised monitoring and reporting program for the landfill include MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, and MW-10. Well MW-8 is located in the southern (upgradient) part of the landfill. MW-1 and MW-3 are located along the northern (downgradient) edge of the landfill. Wells MW-6, MW-7, MW-9, and MW-10 are located downgradient and outside of the landfill boundaries (**Figure 2**).

Formerly, groundwater monitoring and sampling was conducted on a semiannual basis (February and August). Per the June 8, 2015 revised MRP, groundwater monitoring and sampling occurs annually (July). Wells MW-9 and MW-10 are only sampled when volatile

organic compounds (VOCs) are detected above the practical quantitation limits in well MW-6. Wells MW-2, MW-4, and MW-5 are no longer required to be sampled and will be properly destroyed in the future.

Groundwater monitoring wells were gauged for depth to groundwater on August 4, 2016 using an electric water level meter, and depths were recorded to the nearest 0.01 foot, relative to the top of the well casing. Groundwater elevations were calculated and are shown in **Table 2** and on **Figure 3**. Results were recorded on groundwater monitoring gauging data sheets (Appendix A). A graphical representation of the groundwater elevations (hydrograph) can be found in Appendix B, and historical groundwater elevations and analytical data are presented in Appendix C.

The wells were purged using low-flow (minimal-drawdown) purging methods and sampled using new tubing at each location and a bladder sampling pump. Field parameters including temperature, potential of hydrogen (pH), electrical conductivity (EC), turbidity, and dissolved oxygen (DO) were measured for stability during well purging. Purging continued until parameters stabilized in three or more successive readings as follows:

- Temperature to within  $\pm 0.5$  degrees Celsius ( $^{\circ}\text{C}$ )
- pH to within  $\pm 0.1$  pH units
- EC to within  $\pm 3$  percent microsiemens per centimeter ( $\mu\text{S}/\text{cm}$ )
- Turbidity to less than 5.0 Nephelometric Turbidity Units (NTU), desired; however, it is not critical to reach this parameter prior to sampling

Well purging data is recorded on groundwater monitoring well sampling forms (Appendix A).

One trip blank, one blind field duplicate sample, and one equipment rinsate blank were submitted for laboratory analysis. The trip blank was prepared by the laboratory and remained with the samples and cooler through the sampling event. The blind field duplicate sample was collected from one groundwater monitoring well for quality assurance/quality control (QA/QC) purposes.

Purge water from groundwater monitoring well sampling activities was placed in a labeled 55-gallon drum and stored near Building FMS #19 at Camp San Luis Obispo, per indications from the Directorate of Public Works (DPW), pending waste characterization and eventual off-site disposal.

## **2.2 Groundwater Sample Analysis**

The groundwater samples were transported under chain-of-custody protocols to BC Laboratories, Inc. (BC Labs) in Bakersfield, California. BC Labs is accredited by the State of California under the Environmental Laboratory Accreditation Program (ELAP #1186) to perform the specified analyses. Groundwater samples from wells MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, MW-10 were analyzed for the following constituents:

- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B.

In addition, groundwater samples from wells MW-1, MW-3, MW-6, MW-7 and MW-8 were analyzed for the following constituents:

- General Chemistry Analysis:
  - Nitrate as nitrogen (N), Sulfates, and Chloride by EPA Method 300.0, and
  - Total dissolved solids (TDS) by EPA Method 160.1

Additionally, the trip blank and equipment blank were analyzed for VOCs by EPA Method 8260. The blind field duplicate sample, labeled QCBD, was collected from monitoring well MW-6. The field duplicate was analyzed for VOCs and general chemistry parameters per the EPA methods listed previously.

### 3 GROUNDWATER MONITORING RESULTS

On August 4, 2016, ECM conducted the 2016 Annual Monitoring and Sampling event. Groundwater samples were collected from wells MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, and MW-10. Monitoring well completion details are presented in **Table 1**. Groundwater data for the 2016 Annual Monitoring and Sampling event are summarized in **Tables 2 through 6**.

#### 3.1 Groundwater Elevation and Gradient

Depth to groundwater measurements ranged from approximately 16.77 feet bgs in well MW-8 to 34.11 feet bgs in well MW-9. Groundwater elevations in the gauged monitoring wells increased between July 2015 and August 2016. Elevation increases ranged from 1.54 feet in well MW-1 to 6.53 feet in well MW-8. Average groundwater elevation across the landfill area was 199.27 feet amsl. **Table 2** summarizes the depth to water measurements collected during the 2016 Annual monitoring event. A table summarizing historical groundwater elevation data since April 2005 is presented at **Table C-1** in Appendix C.

Consistent with previous groundwater monitoring event observations, the apparent groundwater flow direction during the 2016 Annual Monitoring and Sampling event was generally toward the north-northwest (**Figure 3**). The gradient ranged from approximately 0.0139 feet per foot (ft/ft) in the southern area of the Site, to 0.0106 ft/ft in the northern area of the Site.

#### 3.2 Groundwater Analytical Results

The groundwater sample results for VOCs, general chemistry, and field parameters are discussed in the following sections. Historical groundwater quality data for all sampling events are summarized in Appendix C, Tables C-2 through C-4. Analytical laboratory reports are provided in Appendix D.

### 3.2.1 Volatile Organic Compounds

Carbon tetrachloride was detected in well MW-6 and its field duplicate (0.76 micrograms per liter [ $\mu\text{g/L}$ ] and 0.70  $\mu\text{g/L}$ , respectively), which are above the California EPA Maximum Contaminant Level (MCL) of 0.5  $\mu\text{g/L}$ . Chloroform was detected in MW-6 and its field duplicate (3.5  $\mu\text{g/L}$  and 3.4  $\mu\text{g/L}$ , respectively), which are below the MCL of 80  $\mu\text{g/L}$ . For this event, carbon tetrachloride and chloroform concentrations were reported above their respective PQLs. Per the revised MRP, samples collected from wells MW-9 and MW-10 were analyzed for VOCs after the detections at well MW-6 had concentrations above applicable PQLs were reported by the laboratory. No other VOCs, including methyl tertiary butyl ether (MTBE) and 1,4-dioxane, were detected in any of the groundwater samples, including wells MW-9 and MW-10. Analytical results for VOCs are summarized in **Table 3** and historical 1,4-dioxane results are presented in **Table 4**. Historical analytical results for VOCs are presented in Table C-2 of Appendix C.

### 3.2.2 General Chemistry Parameters

Collected groundwater samples were analyzed for general chemistry, as discussed in Section 3.2. Ranges of the concentrations reported for the 2016 Annual Monitoring and Sampling event are presented below and in **Table 5**.

Parameter	Value Range	Location of Maximum Value
TDS	180 – 1100 mg/L	MW-1
Nitrate as N	1.6 – 4.0 mg/L	MW-6 (field duplicate)
Sulfate	7 – 30 mg/L	MW-1
Chloride	8 – 73 mg/L	MW-3

TDS was detected above its secondary MCL of 500 milligrams per liter (mg/L) in three wells. All concentrations of nitrate as N, sulfate, and chloride were detected below their respective MCLs. Analytical results for general chemistry parameters are presented in **Table 5**. Historical analytical results for general chemistry are presented in Table C-3 of Appendix C.

### 3.2.3 Field Parameters

During the 2016 Annual Monitoring and Sampling event the following field parameter concentration ranges were measured at the monitoring wells:

Parameter	Value Range	Location of Maximum Value
pH	6.73 – 7.28	MW-6
EC	250 – 1,921 $\mu$ S/cm	MW-1
Temperature	17.8 -20.8° C	MW-1
Turbidity	0.9 – 3.18 NTUs	MW-7
DO	0.60 – 3.60 mg/L	MW-7

Field parameters are presented in **Table 6**. Historical field parameter data are presented in Table C-4 of Appendix C.

#### 4 SUMMARY OF GROUNDWATER MONITORING RESULTS

The results from CSLO former Sutter Avenue Landfill groundwater monitoring event are summarized below:

- Seven groundwater monitoring wells (MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, and MW-10) were sampled during the 2016 Annual monitoring and sampling event.
- Groundwater elevation increased across the site between July 28, 2015, and August 4, 2016, with an average groundwater elevation increase of 3.66 feet for the seven monitored wells. Consistent with previous groundwater monitoring events, the apparent groundwater flow direction was generally toward the north-northwest. The groundwater gradient ranged from approximately 0.0139 ft/ft in the southern area of the landfill, to 0.0106 ft/ft in the northern area of the landfill.
- Carbon tetrachloride was detected in well MW-6 and its field duplicate at 0.76  $\mu$ g/L and 0.70  $\mu$ g/L, respectively, which are above MCL of 0.5  $\mu$ g/L.
- Chloroform was detected in MW-6 and its field duplicate at 3.5  $\mu$ g/L and 3.4  $\mu$ g/L, respectively, which are below the MCL of 80  $\mu$ g/L.
- TDS was detected above MCL of 500 mg/L in three wells (MW-1, MW-3 and MW-8) with a maximum concentration of 1,100 mg/L at well MW-1.
- Nitrate as N, sulfate, and chloride concentrations were detected below their MCLs in all wells.
- Field parameters included pH, EC, temperature, turbidity, and DO. The recorded values of these parameters were found to be consistent with historical data.

## **5 QUALITY ASSURANCE AND QUALITY CONTROL**

QA/QC activities for the 2016 Annual Monitoring and Sampling event were conducted in accordance with MRP. Field QA/QC measures included the collection and analyses of the following samples:

- Field duplicate groundwater samples at 10 percent frequency or greater
- One trip blank sample per sample container
- One equipment rinsate blank

Field duplicate samples are collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. Trip blanks are used to evaluate representativeness by identifying any VOCs that may have been introduced to the environmental samples during shipment, handling, or storage onsite and at the laboratory. Rinsate blanks are collected to indicate whether reusable equipment is properly decontaminated between wells. Note that new tubing was used for each well.

Laboratory QA/QC procedures were carried out according to EPA Method specifications and data was accepted based on QA/QC criteria established by the EPA. Laboratory QA/QC procedures included analysis of the following samples:

- Method blanks
- Matrix spike and matrix spike duplicate (MS/MSD)
- Laboratory control sample and laboratory control sample duplicate (LCS/LCSD)
- Post-digestion spike and duplicate
- Laboratory duplicate
- Surrogate spike

### **5.1 Groundwater Sampling Event QA/QC Results**

For the analysis of groundwater samples, one field duplicate sample was collected: Sample QCBD was collected at well MW-6 approximately 40 minutes prior to collection of the primary sample. The reported analytical results of the field duplicate were very similar to the primary sample with an estimated relative percentage difference (RPD) of 8% for carbon tetrachloride and 3% for chloroform.

Field blank samples included one trip blank sample (QCTB) that was analyzed for VOCs. No VOCs were detected in the trip blank sample, indicating that there was no cross contamination of VOCs in groundwater samples during transportation of samples to the laboratory.

Once sampling was completed, an equipment blank sample was collected (QCEB) and analyzed for VOCs. VOCs constituents were not detected in the equipment blank sample.

A laboratory method blank was analyzed for VOCs. No VOCs were detected in the method blank (Appendix D).

## **6 WET WEATHER PREPAREDNESS LANDFILL OBSERVATION AND MAINTENANCE**

The wet weather preparedness section of this report will address items of concern at the landfill, including the soil cover, cap, and drainage of the landfill. Areas of concern and recommended repairs are provided below. Preparedness actions should be completed by DPW prior to September 30, 2016 in order to maintain compliance with the June 8, 2015 modified General MRP No. R3-2004-0006. In accordance with Waste Discharge Requirements, maintenance and repairs are required to *“minimize rainfall infiltration, prevent ponding, resist erosion or flooding of the landfill, and to prevent surface drainage from contracting or percolation through wastes.”* These actions are reported in this *Wet Weather Preparedness Report*.

Inspections of the former Sutter Avenue Landfill occurred monthly during the wet season (October 1 through April 30) and quarterly (twice) during the dry season (May 1 through September 30).

### **6.1 Sutter Avenue Landfill**

ECM completed dry season inspections on June 15 and August 5, 2016, to determine the current state of the landfill and landfill drainages, the landfill perimeter, and possible receiving waters. A *Wet Weather Preparedness Assessment Plan* was prepared by ECM detailing maintenance actions recommended to ensure the landfill is adequately prepared for the rainy season. This report was submitted to CA ARNG on August 31, 2016 to allow DPW time to complete the landfill maintenance work prior to the rainy season.

#### **6.1.1 Soil Cover and Landfill Cap**

The landfill cap and the immediately surrounding areas are occupied with animal burrows (Photographs 1 through 4 in Appendix E). Some of the burrows are very large in size creating areas where water can pool in a rain event. These items will be corrected through the replacement of the landfill cap, which already has been contracted by CSLO in the related Landfill Corrective Action Work Plan (Tetra Tech, 2016) which is in progress and tentatively approved by CCRWQCB. This field procedure is planned to be started during the construction season of 2017.

Removal of large plant growth and trash from the drainage on the west side of the landfill (Photograph 5 in Appendix E) will be completed by a DPW work crew under word order #SL2016-001098, following the approval of a Project Information Package (PIP) through the CSLO Environmental Conservation Office, and the scheduling of the plant and trash removal itself.

Removal of the accumulation of cut plant material from the base of the fence at the southwest corner of the landfill (Photograph 6 in Appendix E), at its entry to Poison Oak Creek will be completed by a DPW work crew under work order #SL2016-001095, following scheduling. This work may be done at the same time as the plant and trash removal required above.

Replacement or repainting of warning sign advising of the location of the solid waste landfill and advising no trespassing through the landfill (Photograph 7 in Appendix E), as located on the fence line along Sutter Avenue will be performed by DPW sign painting trade under work order #SL2016-001096, following scheduling of this work.

Replacement and repair of damaged barb wire along the Sutter Avenue fence of the landfill (Photograph 8 in Appendix E), both south and north of the warning sign in the previous item, will be performed by a DPW work crew under work order #SL2016-00197, following scheduling and the ordering of replacement barb wire fencing.

Repair or replacement of the cyber lock on the Sutter Avenue Landfill gate, located at the northeast corner of the landfill (Photograph 9 in Appendix E), will be done by DPW locksmith trade under work order #SL2016-001098, following scheduling and possibly the purchase of a replacement cyber lock, if required.

With the exception of the animal burrows to be fixed with the replacement of the land cap, it is expected that the correction of the listed items will be completed by November 1, 2016.

### **6.1.2 Drainage**

The concrete v-ditches along the entire northern northeastern boundary should be cleared of soil (Photograph 1 in Appendix E). This soil gets washed into the drainage system downstream. The burrows along the concrete v-ditches should be eliminated to prevent the loose soil from washing back into the v-ditch during the next storm and to minimize rainfall infiltration.

Before and after the replacement of the landfill cap, CA ARNG should consider options for decreasing the burrowing animal population. Currently, there are owl boxes located along the western boundary of the landfill. These owl boxes should be repaired or replaced to encourage use by natural predators to reduce the burrowing animal population at the landfill. The raptor boxes should be cleaned and the posts should be re-set. A couple of the posts appear to be bent and should be replaced and then reinstalled. Installation of additional raptor perches in the landfill would be beneficial, as there are no other areas for raptors to perch and hunt.

The CA ARNG and DPW are completing repairs related to the above-mentioned concerns at the time of issuance of this report. Work should be completed by November 1, 2016; however, ongoing work at the landfill should continue to ensure the landfill is ready for a

large rain event. Additional photographs showing the landfill after maintenance activities can be requested from the CA ARNG.

## 6.2 Rainfall Summary

Historical data obtained from the Internet site “www.wunderground.com” was used to determine precipitation totals for the 2015 - 2016 period. Historical weather data presented in the previous report (Star, 2015b) were obtained from weather station Cuesta College KCASANLU17, located approximately 2,500 feet northwest of the landfill, however, when consulted by ECM this station only had data available through March 9, 2016. In the interest of obtaining a complete set of annual historical weather data for the current report, data were obtained from weather station Rancho de Caballo KCASANLU47, located approximately 2.85 miles east of the landfill. Historical weather data were obtained for the period October 1, 2015 through September 29, 2016; data were not obtained for the September 30, 2016 due to time requirements involved in preparation of this report.

Quarterly precipitation totals are as follows:

- October - December 2015      6.19 inches
- January – March 2016          19.35 inches
- April - June 2016              0.50 inches
- July - September 2016        0.00 inches

The heaviest 24-hour rainfall from October 2015 through December 2015, occurred on November 2, 2015 (1.09 inches). The heaviest 24-hour rainfall from January 2016 through March 2016, which had the most rain out of all the quarters, occurred on March 5, 2016 (3.01 inches). The heaviest 24-hour rainfall from April 2016 through June 2016, occurred on April 8, 2016 (0.38 inches). For the period July 2016 through September 2016, there was no recorded rainfall. The rainfall history for the 2015-2016 wet season is depicted on rainfall data logs provided in Appendix G.

There was one storm event with precipitation greater than one inch in 24-hours during the October 2015 through December 2015 period. As indicated previously, it occurred on November 2, 2016 (1.09 inches).

There were seven storm events with precipitation greater than one inch in 24-hours during the January 2016 through March 2016 period as follows:

- January 5, 2016 - 2.08 inches;
- January 6, 2016 - 1.1 inches;
- January 19, 2016 - 2.56 inches;
- January 31, 2016 - 1.83 inches;
- February 17, 2016 - 1.17 inches;
- March 5, 2016 - 3.01 inches; and,
- March 7, 2016 - 1.9 inches.

There were no storm events with precipitation greater than one inch in 24-hours during the May 2016 through June 2016 period and July 2016 through September 2016 period.

Star completed wet weather inspections after these rain events. The inspection forms are included in Appendix F.

## **7 SUMMARY OF GROUNDWATER MONITORING AND WET WEATHER PREPAREDNESS ACTIVITIES**

In accordance with the revised MRP No. R3-2004-0006, a summary of events that occurred in the 2016 monitoring year is to be submitted as part of the annual report. The following sections fulfill this requirement.

### **7.1 Analytical Results**

On August 4, 2016, groundwater monitoring and sampling was conducted at the former Sutter Avenue Landfill. The monitoring program includes groundwater monitoring wells MW-1, MW-3, MW-6, MW-7, MW-8, MW-9, and MW-10.

Carbon tetrachloride was detected in well MW-6 at 0.76 µg/L, above its respective MCL of 0.5 µg/L. Chloroform was detected in well MW-6 at 3.5 µg/L, below its respective MCL of 80 µg/L. All other VOC concentrations were reported below their respective MCLs and mostly below the laboratory reporting limits.

TDS exceeded its MCL of 500 mg/L at wells MW-1, MW-3, and MW-8. Concentrations of chloride, nitrate as N, and sulfate did not exceed their MCLs in any wells.

All laboratory analytical results can be found in Appendix D.

### **7.2 Overall 2016 Compliance Summary**

The former Sutter Avenue Landfill has been properly inspected and prepared for the upcoming rainy season. Monthly inspections were performed during the rainy season (October 1 through April 30), and quarterly inspections were performed during the dry season (May 1 through September 30). Key concerns included erosion control measures, animal burrowing control measures, controlling vegetation, and maintaining integrity of the compacted soil cover before replacement. DPW will continue to conduct maintenance activities at the landfill as necessary.

The detection monitoring events performed in 2016 complied with all current CCRWQCB and CalRecycle requirements and the revised MRP related to subsurface groundwater and landfill gas monitoring. Landfill gas results are reported under a separate cover.

The results for the 1SA16 detection monitoring event indicated no significant groundwater impacts. The results for the 2SA16 detection monitoring event also indicated no significant groundwater impacts. Per the MRP schedule, COC monitoring was not conducted during this period; however, the next COC monitoring event will be completed during the annual event in 2019.

Animal burrowing and erosion of the landfill cap into the drainage areas are the main concerns at Sutter Avenue Landfill. It is recommended that these issues be addressed in order to maintain integrity of the landfill cap before and after cap replacement.

---

## 8 REFERENCES

- California Army National Guard (CA ARNG), 2014. *2013 Annual Groundwater Sampling and Analysis Report, California Army National Guard, Camp San Luis Obispo, Sutter Avenue Closed Class III Landfill, San Luis Obispo County, California*. January 31.
- ECM Consultants (ECM), 2016. *Site-Specific Health and Safety Plan, Landfill Gas and Groundwater Monitoring, California Army National Guard Former Sutter Avenue Landfill Camp San Luis Obispo San Luis Obispo County, California*. June 13.
- Ecology and Environment, Inc., 1991. *CERCLA Screening Site Inspection, Camp San Luis Obispo, Highway 1 – 7 Miles West of San Luis Obispo, California, San Luis Obispo County, report prepared for U.S. Environmental Protection Agency, Region IX*. May 10.
- England Geosystem, Inc. 2004. *Annual Report, Ground Water Monitoring – 2003, (Revised MRP No. 94-79), Sutter Avenue Landfill, Camp San Luis Obispo, California*. January 26.
- ERM-West, Inc., 2003. *Storm Water Pollution Prevention Plan for Camp San Luis Obispo, California*. July.
- Geosystems Consultants, Inc. (Geosystems), 1998. *As-Built Report, final Cover Construction, Sutter Avenue Landfill, Camp San Luis Obispo, California*. May 20.
- Geosystems, 1995. *Final Closure and Post-Closure Maintenance Plan, Sutter Avenue Landfill, Camp San Luis Obispo, California. Prepared for the Division of the State Architect*. November 30.
- Hart, 1973. *Unreferenced document from Riedel Environmental Services Inc., Architect-Engineer Work Plan Remedial Investigation at Former Camp San Luis Obispo, San Luis Obispo, California, prepared for U.S. Army Corps of Engineers, Los Angeles District*. June 1991.
- Cal Poly Land, 2016. Website at: [polyland.calpoly.edu/places/Adjoiningland/index.html](http://polyland.calpoly.edu/places/Adjoiningland/index.html).
- Staal, Gardner & Dunne, Inc. (SGD), 1989. *Investigation Proposal, Water Quality Solid Waste Assessment Test, Camp San Luis Obispo Landfill, San Luis Obispo County, California, prepared for the Department General Services, Office of the State Architect*. June.
- Star Resources, Inc. (Star), 2015a. *Groundwater Monitoring and Sampling Report, 2014 Annual Summary*. February 2, 2015.
- Star Resources, Inc. (Star), 2015b. *Wet Weather Preparedness Report and 2015 Annual Groundwater Monitoring and Sampling Report, California Army National*

*Guard, Sutter Avenue Landfill, Camp San Luis Obispo California.* September 30, 2015.

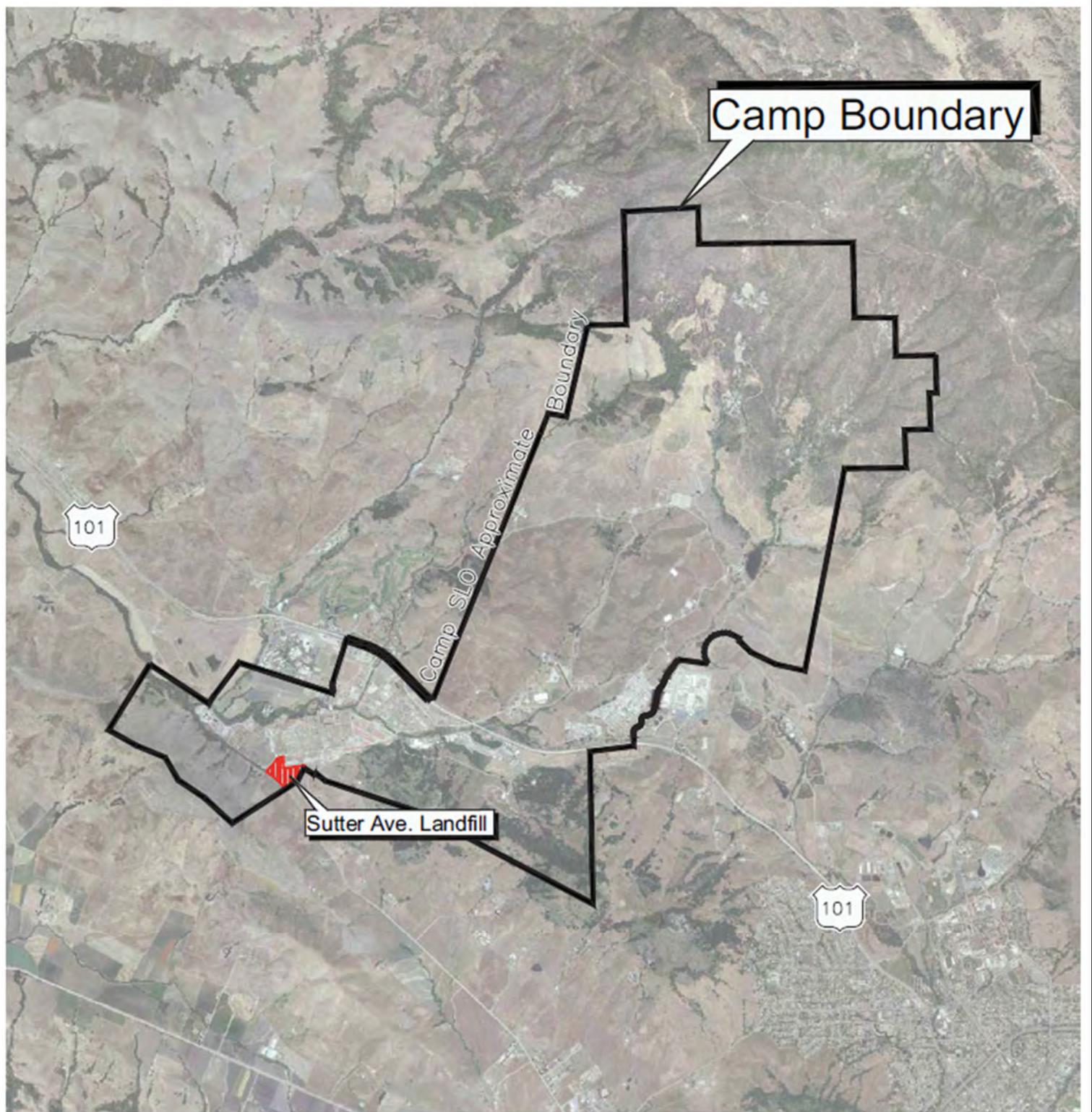
State of California Military Department, 1977. *Operations Plan: Solid Waste Disposal Site.* March 31.

State of California Military Department, 1976. *Technical Report, Camp San Luis Obispo Solid Waste Disposal Site, San Luis Obispo County.* November 12.

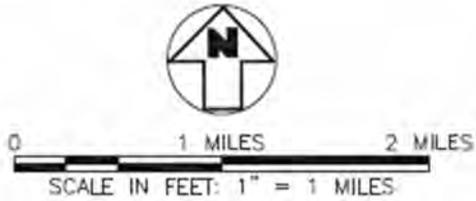
Tetra Tech, Inc. (Tetra Tech), 2016. *Draft Sutter Avenue Landfill, Landfill Corrective Action Work Plan, San Luis Obispo County, California.* September (DRAFT).

United States Army Environmental Hygiene Agency, 1986. *Ground-Water Monitoring Plan, Camp San Luis Obispo Active Sanitary Landfill, San Luis Obispo County, California for Central Coast Regional Water Quality Control Board.* May.

## **FIGURES**



Original map source: Star Resources



California Army National Guard  
Camp San Luis Obispo, CA  
Sutter Avenue Landfill



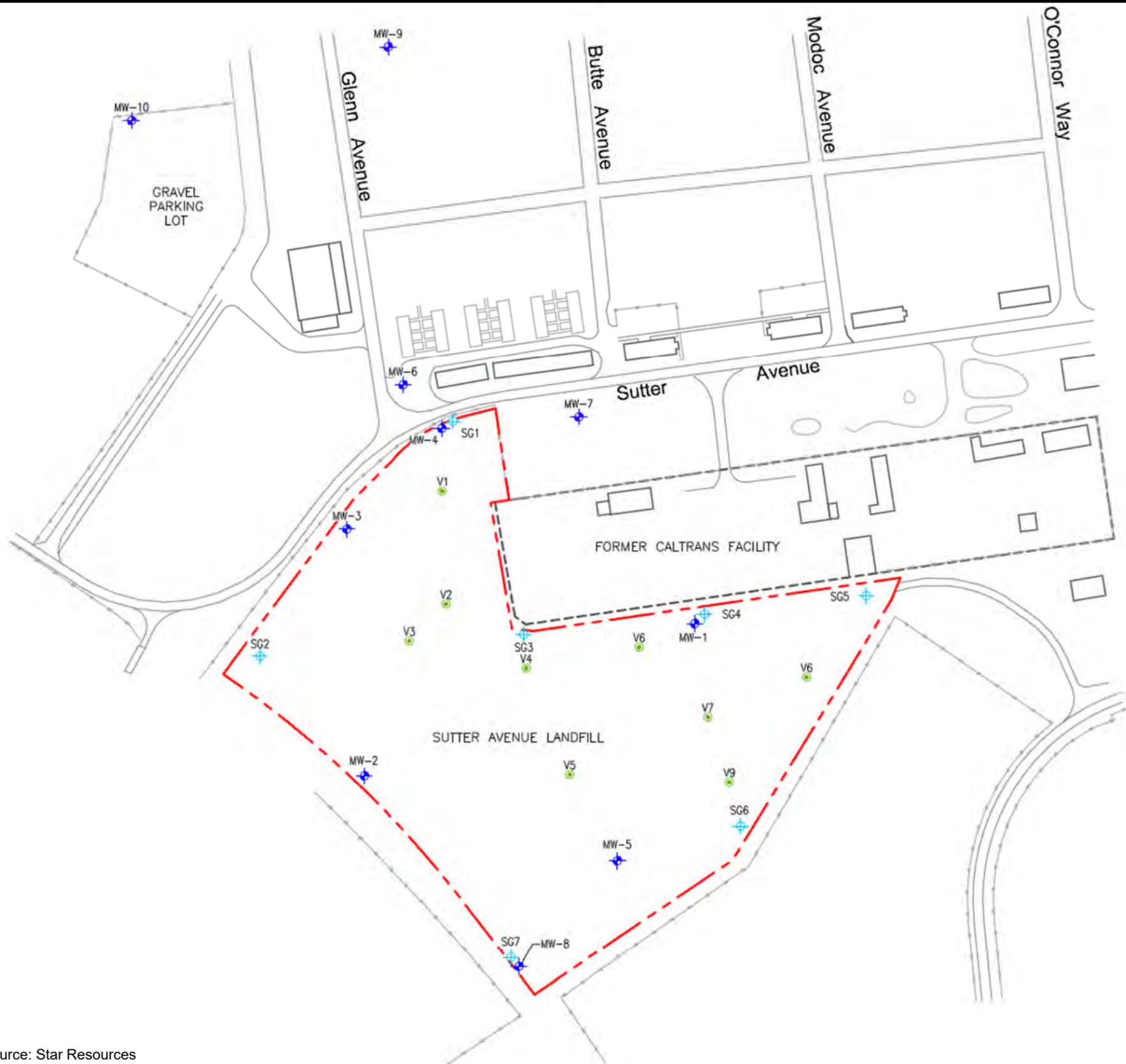
address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com



Site Location Map

Figure

1

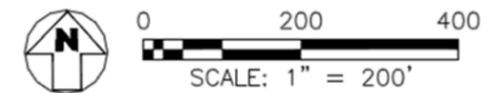


**Legend**

- - - Approximate Landfill Boundary
- SG-1 + Soil Gas Monitoring Well
- V-6 ● Gas Vent
- MW-10 ★ Groundwater Monitoring Well

**Notes:**

1. Not a surveyed map, soil gas and gas vent well locations are approximate.
2. Groundwater monitoring well locations surveyed on June 23, 2009.



Original map source: Star Resources

California Army National Guard  
Camp San Luis Obispo, CA  
Sutter Avenue Landfill



address 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone 714.662.2759  
web ecmconsults.com

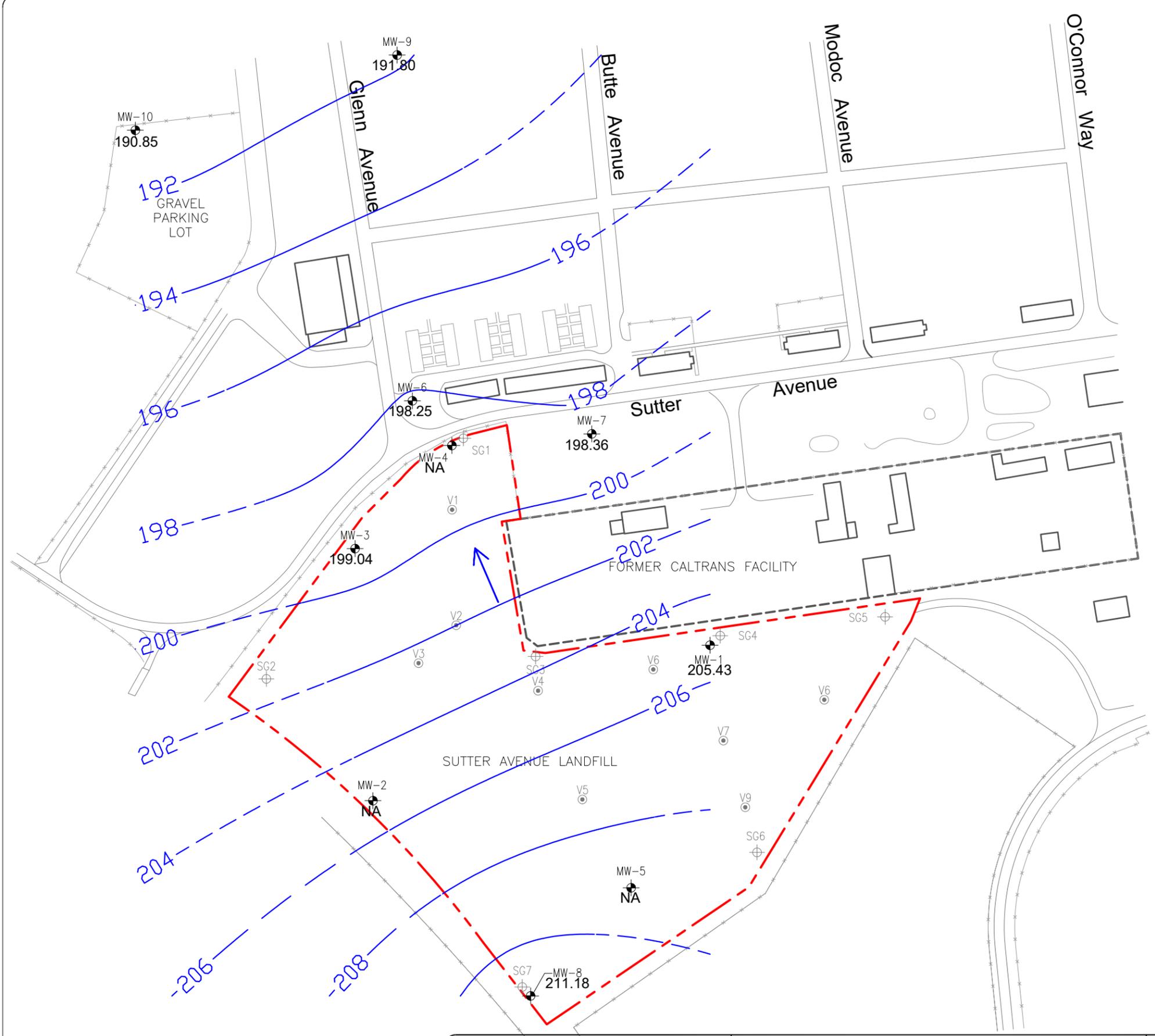


Site Map Showing Soil Gas  
And Groundwater Monitoring Points

Figure

2

Project: CA ARNG  
 Proj. Manager: R. Macado  
 Date drafted: 9/15/2016  
 Chkd by: TL  
 Drafter: JWP  
 File Path: S:\CA ARNG\Camp SLO

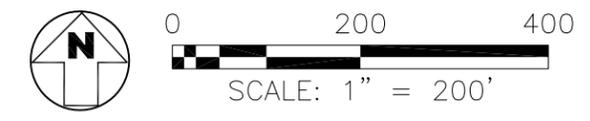


**Legend**

- Approximate Landfill Boundary
- Soil Gas Monitoring Well
- Gas Vent
- Groundwater Monitoring Well
- Interpreted Groundwater Elevation contours in ft-AMSL. Contour intervals are 2.0 feet (Dashed where inferred)
- 190.85** Groundwater Elevation (ft-AMSL)
- Groundwater Flow Direction

Groundwater monitoring wells gauged 8/4/16

- Notes:**
1. Not a surveyed map, soil gas and gas vent well locations are approximate.
  2. Groundwater monitoring well locations surveyed on June 23, 2009.
  3. NA – Not applicable – well dry, or water only in sump below screen interval, or well not present – could not calculate groundwater elevation.
  4. Original map source: Star Resources



California Army National Guard  
 Camp San Luis Obispo, CA  
 Sutter Avenue Landfill



address 3525 Hyland Ave. #200  
 Costa Mesa, CA 92626  
 phone 714.662.2759  
 web ecmconsults.com



Groundwater Elevation Contours  
 August 4, 2016

Figure  
 3

## **TABLES**

<p style="text-align: center;"><b>Table 1</b>  <b>Monitoring Well Completion Details</b>  Sutter Avenue Landfill, Camp San Luis Obispo, California</p>							
Well No.	Boring Depth <sup>1</sup> (feet)	Casing Depth <sup>1</sup> (feet)	Perforated Interval <sup>1</sup> (feet)	Casing Material/ Diameter/ Slot Size (inches)	Reference Elevation (feet AMSL)	Date Completed	COC Monitoring Due Date
MW-1	32.0	32.0	12.0 - 32.0	PVC / 4 / 0.02	233.87 <sup>2</sup>	05/05/89	2019
MW-3	33.0	33.0	13.0 - 32.0	PVC / 4 / 0.02	223.82 <sup>2</sup>	05/04/89	2019
MW-6	41.0	38.4	18.2 - 38.0	PVC / 4 / 0.01	222.93	10/18/94	2019
MW-7	40.0	39.5	19.3 - 39.1	PVC / 4 / 0.01	227.59	10/17/94	2019
MW-8	36.0	35.0	9.8 - 34.5	PVC / 4 / 0.01	228.29	10/17/94	2019
MW-9	51.5	51.5	29.5 - 49.5	PVC / 4 / 0.01	224.72	12/14/95	2019
MW-10	51.5	51.5	29.5 - 49.5	PVC / 4 / 0.01	219.26	12/15/95	2019

**Notes:**

- 1 Relative to surrounding grade.
- 2 Well locations resurveyed on April 7, 1997.
- PVC polyvinyl chloride
- AMSL above mean sea level
- COC Constituents of concern

<b>Table 2</b> <b>Groundwater Level Data</b> <b>2016 Event</b> Sutter Avenue Landfill, Camp San Luis Obispo, California				
<b>Well ID</b>	<b>Reference Elevation (feet amsl)</b>	<b>Date</b>	<b>Depth to Water (feet TOC)</b>	<b>Ground Water Elevation (feet amsl)</b>
<b>MW-1</b>	233.38	08/04/16	27.95	205.43
<b>MW-3</b>	223.55	08/04/16	24.51	199.04
<b>MW-6</b>	222.67	08/04/16	24.42	198.25
<b>MW-7</b>	228.45	08/04/16	30.09	198.36
<b>MW-8</b>	227.95	08/04/16	16.77	211.18
<b>MW-9</b>	225.91	08/04/16	34.11	191.80
<b>MW-10</b>	222.16	08/04/16	31.31	190.85

Notes:

NA Not applicable - well dry, or water only in sump below screen interval, or well not present - could not calculate groundwater elevation.

amsl above mean sea level

TOC Below top of casing

**Table 3**  
**Volatile Organic Compounds in Groundwater Samples**  
**2016 Event**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Date	Acetone	Carbon Tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene Chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoromethane	Toluene	Methyl t-butyl Ether
		µg/L										
MCL:		-	0.5	70	5	5	4	-	80	150	150	5
MW-1	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11
MW-3	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11
MW-6	08/04/16	<4.6	<b>0.76</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>3.5</b>	<0.13	<0.093	<0.11
MW-6 (QCBD)	08/04/16	<4.6	<b>0.70</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>3.4</b>	<0.13	<0.093	<0.11
MW-7	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11
MW-8	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11
MW-9	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11
MW-10	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11

Notes:

**BOLD** values indicate detected concentrations.

"<" Constituents not detected at or above the method detection limit (MDL) cited.

J Estimated value. Concentration detected above the Method Detection Limit but below the Reporting Limit.

MCL California Maximum Contaminant Level

µg/L micrograms per liter

NS Not sampled

**Table 4**  
**1,4-Dioxane in Groundwater Samples**  
**2016 Event**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Sample ID	1,4-Dioxane (µg/L)								
	2/23/2012	8/6/2012	2/1/2013	12/19/2013	2/27/2014	8/13/2014	2/23/2015	7/29/2015	8/4/2016
MW-1	<0.66	NS	NS	<1.0	<0.56	NS	<42*	<42	<42
MW-3	<0.56	NS	NS	<1.0	<0.50	NS	<42*	<42	<42
MW-4	<0.61	NS	NS	<1.0	<0.49	NS	<42*	NS	NS
MW-6	<0.61	NS	NS	<1.0	<0.52	NS	<42	<42	<42
MW-7	<0.62	NS	NS	<1.0	<0.50	NS	<42	<42	<42
MW-8	<0.61	NS	NS	<1.0	<0.52	NS	<42*	<42	<42
MW-9	<0.61	<0.62	NS	<1.0	<0.52	<42	<42	NS	<42
MW-10	<0.65	<0.64	NS	<1.0	<0.51	<42	<42	NS	<42

Notes:

- "<" Constituents not detected at or above the method detection limit (MDL) cited.
- mg/L micrograms per liter
- NS Not sampled
- \* Wells sampled on 2/24/15

**Table 5**  
**General Chemistry Parameters in Groundwater Samples**  
**2016 Event**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Date	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids
		mg/L			
<b>MCL:</b>		250	45	250	500
<b>MW-1</b>	08/04/16	<b>41</b>	<b>1.6 A07</b>	<b>30</b>	<b>1,100</b>
<b>MW-3</b>	08/04/16	<b>73</b>	<b>3.1</b>	<b>17</b>	<b>700</b>
<b>MW-6</b>	08/04/16	<b>23</b>	<b>3.9</b>	<b>25</b>	<b>390</b>
<b>MW-6 (QCBD)</b>	08/04/16	<b>23</b>	<b>4.0</b>	<b>25</b>	<b>400</b>
<b>MW-7</b>	08/04/16	<b>8</b>	<b>1.6</b>	<b>7</b>	<b>180</b>
<b>MW-8</b>	08/04/16	<b>53</b>	<b>2.5</b>	<b>12</b>	<b>530</b>
<b>MW-9</b>	08/04/16	NA	NA	NA	NA
<b>MW-10</b>	08/04/16	NA	NA	NA	NA

Notes:

**BOLD** values indicate detected concentrations.

"<"                    Constituents not detected at or above the method detection limit (MDL) cited.

J                        Estimated value. Concentration detected above the Method Detection Limit but below the Reporting Limit.

MCL                    California Maximum Contaminant Level

µg/L                    micrograms per liter

NA                      Not analyzed for that parameter.

**Table 6**  
**Field Parameters in Groundwater Samples**  
**2016 Event**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Date	pH	Electrical Conductivity (µS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)
MW-1	08/04/16	6.73	1,921	20.8	1.65	0.60
MW-3	08/04/16	6.87	1166	19.5	2.48	2.86
MW-4	08/04/16	NA	NA	NA	NA	NA
MW-6	08/04/16	7.28	642	19.1	1.39	2.58
MW-7	08/04/16	7.18	250	20.4	3.18	3.60
MW-8	08/04/16	6.93	852	19.5	1.47	1.95
MW-9	08/04/16	7.10	961.00	19.40	2.31	2.83
MW-10	08/04/16	7.16	912	17.8	0.9	1.28

Notes:

- NS Not sampled
- °C Degrees Celsius
- \* electrical conductivity measured in µmhos per centimeter (same as µSiemens/cm) at 25° C
- µS/cm microsiemens per centimeter
- NTU Nephelometric turbidity units
- DO dissolved oxygen
- mg/L milligrams per liter

## **APPENDICES**

## **APPENDIX A**

### **GROUNDWATER MONITORING WELL PURGING AND SAMPLING FORMS**

# Daily Field Report



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com

Client: CA ARNG	Date: 8/4/2016	Mo	Tu	We	Th	Fr	Sa	Su
Job Site: Camp San Luis Obispo Sutter Ave Landfill	Weather: Mostly Cloudy, 57°F, High 73°F, Wind 14 mph 88%RH							
Location: Sutter Ave Landfill	Subcontractors onsite: None							
Observer: Mark Czipka								

Daily Activities: Gauge wells, low flow sampling

Time	Description
05:30	Load truck, review scope and map, review 2015 analysis and pick sample order, *note 1,4 Manganese not on COC's
06:00	Breakfast to 06:20
06:25	Depart hotel to buy ice for samples (209405)
06:37	Travel to SLO
07:14	Arrived SLO, getting pass to 7:22
07:25	Arrive bus 1300 for meeting at 8:00. Calibrated YSI and LaMotte to 07:52
08:00	Meeting with Col Herman to 9:15
	Got site key to 9:30
09:40	Arrived at Sutter Ave Landfill
	Code 2009 Soil Gas Master Lock 3379 GW Wells Gave 3 Cyber Key
	Began gauging on site wells during site tour for Col Herman.
11:41	Finished gauging MW-10 has sheet high needs - very dry
11:50	Set up on MW-1
13:10	Purge and sample MW-3
14:25	Purge and sample MW-8
15:50	Purge and sample MW-7
17:15	used old well tubing as extended air line from street, need 60ft 1.5" tube
	Purge and sample MW-9
	used old well tubing as extended air line from street, need 65ft
	flow rate was not steady, possibly due to extended air to
16:30	Access to MW-10 overpass used truck to flatten path to create better surface
	purged and sample well
20:40	purged and sample MW-6 duplicate
21:17	Depart site
21:30	Dinner to 21:52
22:23	Arrive hotel (209485)
22:40	Print new COC's

# Tailgate Safety Meeting



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | eciconsults.com

Project Name: Camp San Luis Obispo - Sutter Ave Landfill Date: 8/4/2016

Project Manager: Rafael Macedo

Presented By: Mark Czapka

Daily Activities: Groundwater seepage and sampling

- emergency procedures & evacuation route
- site safety plan review and location
- Safety First / self-check before every task
- equipment and machinery familiarization
- sharp object, rebar, and scrap metals
- slips, trips, and falls
- vehicle safety and driving/road conditions
- overhead utility locations and clearance
- open pits, excavations, and site hazards
- excavation/trenching inspections/documentation
- Smoking in designated areas
- Eye wash station locations
- employee Right-To-Know/MSDS location
- no short cuts
- heat and cold stress
- operational discipline
- hazard identification

- daily work scope
- directions to hospital
- Stop Work Authority
- pinch points
- lifting techniques
- orderly site and housekeeping
- traffic safety
- backing up hazards
- electrical ground fault
- noise hazards
- refueling procedures
- decontamination procedures
- first aid, safety, and PPE location
- no horseplay
- visitors
- cell phones
- securing loads/cargo

- site specific hazards
- personal protective equipment
- strains and sprains
- buddy system (as needed)
- portable tool safety and awareness
- public safety and fences
- parking & lay down/ wheel chocks
- hot work permits
- flying debris hazards
- fire extinguisher location
- excavator swing and loading
- dust and vapor control
- effects of the night before
- demobilization safety
- bee stings, insects, biological hazards
- Critical Allergies
- NOBODY GETS HURT!

Level D personal protection equipment is required on site. If hazardous conditions specified in the Site Health and Safety Plan are met, Onsite personnel will upgrade to level C or above as appropriate. The project manager will be notified immediately of condition change and field personnel will be authorized to continue or stop work, as necessary.

LIST JHAs REVIEWED (As Applicable)	General Utility Activities	Collection of Groundwater Samples
Monitoring of Landfill Gases	Driving	Decon - Missing?

NAME	DATE	LOCATION
Mark Czapka Brian Pierskalla	8/4	ECM CA ARNG

AFTERNOON SAFETY BREAK TOPICS	TIME:
Watch out uneven ground	13:20

Conduct a daily safety meeting prior to beginning each day's site activities. Follow-up on any noted items and document resolution.

**FIELD CALIBRATION FORM**

Project Name: CAARNG SLO Sutter Ave Landfill  
 Calibration by: Marie Czapka Date: 8/7/2016

Time: 07:30

**pH/TEMPERATURE/CONDUCTIVITY/DISSOLVED OXYGEN METER**

Instrument Manufacturer: YSI Model: Professional Plus  
 Instrument Serial Number: 14H100260

**TURBIDITY METER**

Instrument Manufacturer: Lamotte Model: 2020WE  
 Instrument Serial Number: 2763

**CALIBRATION SOLUTIONS / STANDARDS**

Solution Manufacturer	Solution	Lot Number	Expiration Date
<u>Geotech</u>	<u>pH 4.00</u>	<u>66B646</u>	<u>Feb 18</u>
	<u>pH 7.00</u>	<u>66A544</u>	<u>Jan 18</u>
	<u>pH 10.0</u>	<u>56L705</u>	<u>Dec 17</u>
	<u>Conductivity</u>	<u>56L691</u>	<u>Dec 16</u>
	<u>ORP</u>	<u>66D1136</u>	<u>Jan 17</u>

**INSTRUMENT CHECK-OUT**

Solution Parameters	Standard Solution	Instrument Response	
		Pre-Sampling	Post-Sampling
pH Buffer	<u>4.00</u>	<u>4.08</u>	
	<u>7.00</u>	<u>7.04</u>	
	<u>10.0</u>	<u>10.05</u>	
Dissolved Oxygen <sup>(1)</sup>	<u>0% Saturation</u>	<u>NA</u>	
	<u>100% Saturation</u>	<u>100%</u>	
Conductivity	<u>1413 uS/cm</u>	<u>1413 uS/cm</u>	
Turbidity (NTUs)	<u>0 / 1 / 10</u>	<u>0.02 / 0.99 / 0.98</u>	<u> / /</u>
ORP	<u>220 <del>240</del> mV</u>	<u>220.1 mV</u>	
Temperature	<u>NA</u>	<u>N/A</u>	

<sup>(1)</sup> Instrument response was calibrated to the air (i.e. 100% saturation) per manufactures instructions.

Comments: Replace Buffers in YSI Pro Plus



# Groundwater Elevation Log

**Project Name:** Camp SLO Sutter Avenue Landfill  
**Location:** San Luis Obispo, California  
**Project Manager:** Rafael Macedo

**Project No.:** N/A  
**Date:** 8/4/2016  
**Field Personnel:** Mark Cz. pcc

Well ID	Previous Measurement Date	Previous Water Depth (feet)	Measurement Point	Gauging Time (00:00)	Casing Diameter (inches)	Depth to Water (feet)	Total Depth (feet)	Historical Total Depth (feet)	Comments
MW-1	7/29/2019	29.49	TOC	10:17	4"	27.95	34.40	34.54	
MW-3	7/29/2019	28.53	TOC	10:23	4"	24.51	34.73	34.85	
MW-6	7/29/2019	27.83	TOC	11:34	4"	24.42	39.07	39.03	
MW-7	7/29/2019	33.57	TOC	10:54	4"	30.09	41.00	41.10	Soft
MW-8	7/29/2019	23.30	TOC	10:29	4"	16.77	36.90	36.88	Soft
MW-9	7/29/2019	37.46	TOC	11:02	4"	34.11	50.58	50.45	Lab Analysis contingent of VOC results at MW-6 Soft
MW-10	7/29/2019	34.59	TOC	11:18	4"	31.31	44.65	49.65	Lab Analysis contingent of VOC results at MW-6

Notes:

---



---



---



---



---

Site Address: Camp San Luis Obispo Sutter Ave Landfill  
Client: CA ARNG

Date: 8/4/18  
Recorded by: Mark Czipka

WELL ID	RIM SEAL <i>D=Deteriorated M=Missing</i>		BOLTS <i>(Missing) X/X</i>	REPAIR TABS <i>B=Broken S=Stripped</i>		CRACKED APRON <i>(Mild Moderate Severe)</i>	GROUND SEAL <i>(Deficient)</i>	PVC <i>(condition prevents tight cap seal)</i>	REPLACE CAP	REPLACE LOCK	WELL LID			Notes
	D	M		B	S						(Type & Diameter)	C = Cracked B = Broken		
			C			B								
MW-1	-	NA	NA	NA	NA	Good	Good	OK	NO	NO	4"			Re-marked IP
MW-3	-	NA	NA	NA	NA	Good	<del>Good</del> Re-bar	OK	NO	NO	4"			Re-mark
MW-6	OK	OK	2/0	OK	OK	Good	Good	OK	NO	NO	4"			both very difficult to remove
MW-7	-	NA	NA	NA	NA	Good	OK	OK	NO	NO	4"			1 rodent hole
MW-8	-	NA	NA	NA	NA	Good	Deep	OK	NO	NO	4"			
MW-9	-	NA	NA	NA	M	Severe	OK	OK	NO	NO	4"			
MW-10	-	NA	NA	NA	NA	Good	OK	OK	NO	NO	4"			tail chest high weeds
														replace bolts

# Sampling and Monitoring Form



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com

Client: CA ARNG

Sample Location: MW-1

Site Name: Camp San Luis Obispo Sutter Ave Landfill

Date: 8/4/2016

Well Type: Flush Mount Stove pipe Is well cap sealed? YES NO (explain in remarks)  
Bolts: \_\_\_/\_\_\_ (Size? ) Well O-ring? YES NO NA Tabs Broken? YES (# \_\_\_/\_\_\_) NO  
General condition of Wellhead assembly: Excellent Good Fair Poor (explain in remarks)

Sample Type: 3 Casing Volumes Low Flow No Purge  
Sample Method: Submersible Bladder Pump Peristaltic Pump Watera None  
Sampled with: Disposable bailer From Pump tubing PDB  
Well diameter: 1" \_\_\_ 2" \_\_\_ 4" X 6" \_\_\_ 8" \_\_\_  
Purge Vol. Multiplier: 0.04 0.163 0.653 1.47 2.61 gal/ft.

Initial Measurement Recharge Measurement Purge Volume  
Time: 10:17 Time: NA Calculated: NA  
Depth of well: 34.40 Depth to water: NA Actual: NA  
Depth to water: 27.95 80% recharge depth: NA

Low Flow: Discharge (sec): 16 Recharge (sec): 45 Pressure (psi): 36  
3 Vol: VFD Hertz: N/A Pump intake at 32 feet BTOC.

Time	Temp (C)	E.C. (µS)	pH	ORP	Turb (NTU)	Dissolved Oxygen	DTW (FT BTOC)	Flow Rate (LPM/GPM)	Vol. (L/Gal)
12:18	20.6	1925	6.73	66.3	1.80	0.61	28.20	0.300	0.900
12:21	21.0	1939	6.73	55.8	1.48	0.64	28.27	0.300	1.800
12:24	20.9	1932	6.74	51.2	1.66	0.60	28.33	0.300	2.700
12:27	20.9	1927	6.73	49.5	1.51	0.61	28.38	0.300	3.600
12:30	20.8	1921	6.73	48.5	1.65	0.60	28.45	0.300	4.500

Sample appearance: clear, no odor Sample Time: 12:46

QC samples collected? YES NO QC sample ID: QCTB Time: 12:10

Remarks: Removed old tubing, 145' tilted near banded tubing

Sampler: Mark Czips Signature: [Signature]





# Sampling and Monitoring Form



address 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone 714.662.2759  
web ecmconsults.com

Client: CA ARNG  
Site Name: Camp San Luis Obispo Sutter Ave Landfill

Sample Location: MW-7  
Date: 01/16

Well Type: Flush Mount Stove pipe Is well cap sealed? YES NO (explain in remarks)  
Bolts:    /    (Size? ) Well O-ring? YES NO N/A Tabs Broken? YES (#    /   ) NO  
General condition of Wellhead assembly: Excellent Good Fair Poor (explain in remarks)

Sample Type: 3 Casing Volumes Low Flow No Purge  
Sample Method: Submersible Bladder Pump Peristaltic Pump Watera None  
Sampled with: Disposable bailer From Pump tubing PDB  
Well diameter: 1"     2"     4" X 6"     8"      
Purge Vol. Multiplier: 0.04 0.163 0.653 1.47 2.61 gal/ft.

Initial Measurement 10:54 Recharge Measurement N/A Purge Volume  
Time: 10:54 Time: N/A Calculated: N/A  
Depth of well: 41.00 Depth to water: N/A Actual: N/A  
Depth to water: 30.09 80% recharge depth: N/A

Low Flow: Discharge (sec): 15 Recharge (sec): 35 Pressure (psi): 30  
3 Vol: VFD Hertz: N/A Pump intake at 35 feet BTOC.

Time	Temp (C)	E.C. (µS)	pH	ORP	Turb (NTU)	Dissolved Oxygen	DTW (FT BTOC)	Flow Rate (LPM/GPM)	Vol. (L/Gal)
16:19	20.5	249.2	7.23	60.3	3.31	3.71	30.06	0.300	0.900
16:22	20.4	249.2	7.19	58.1	3.39	3.68	30.07	0.300	1.000
16:25	20.4	250.4	7.14	57.6	3.32	3.64	30.07	0.300	2.700
16:28	20.4	250.5	7.15	54.3	3.25	3.61	30.07	0.300	3.600
16:31	20.4	249.8	7.18	50.1	3.18	3.60	30.07	0.300	4.500

Sample appearance: clear, No odor Sample Time: 16:53

QC samples collected? YES NO QC sample ID:     Time:    

Remarks: Ran old well tubing as extended air line from street, installed new tubing. \* Requires 60ft 1/4" for air line extension.

Sampler: Mark Czaplak Signature: [Signature]

# Sampling and Monitoring Form



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com

Client: CA ARNG  
Site Name: Camp San Luis Obispo Sutter Ave Landfill

Sample Location: MW-9  
Date: 8/4/16

Well Type: Flush Mount Stove pipe Is well cap sealed? YES NO (explain in remarks)  
Bolts:      /      (Size? ) Well O-ring? YES NO NA Tabs Broken? YES (#      /     ) NO  
General condition of Wellhead assembly: Excellent Good Fair Poor (explain in remarks)

Sample Type: 3 Casing Volumes Low Flow No Purge  
Sample Method: Submersible Bladder Pump Peristaltic Pump Watera None  
Sampled with: Disposable bailer From Pump tubing PDB  
Well diameter: 1"      2"      4" X 6"      8"       
Purge Vol. Multiplier: 0.04 0.163 0.653 1.47 2.61 gal/ft.

Initial Measurement Recharge Measurement Purge Volume  
Time: 11:02 Time: NA Calculated: NA  
Depth of well: 50.58 Depth to water: NA Actual: NA  
Depth to water: 34.11 80% recharge depth: NA

Low Flow: Discharge (sec): 15 Recharge (sec): 38 Pressure (psi): 32  
3 Vol: VFD Hertz: NA Pump intake at 39 feet BTOC.

Time	Temp (C)	E.C. (µS)	pH	ORP	Turb (NTU)	Dissolved Oxygen	DTW (FT BTOC)	Flow Rate (LP/GPM)	Vol. (L/Gal)
17:40	19.8	968	7.08	85.2	2.42	2.93	34.10	±0.300	0.900
17:44	19.6	966	7.08	82.8	2.38	2.85	34.11	±0.300	1.800
17:48	19.5	964	7.09	80.6	2.66	2.83	34.11	±0.300	2.700
17:53	19.5	963	7.10	78.5	2.42	2.82	34.11	±0.300	3.600
17:58	19.4	961	7.10	77.4	2.31	2.83	34.11	±0.300	4.500

HTT 1  
HTT 1  
HTT 1  
HTT 1  
HTT 1

Sample appearance: clear, no odor Sample Time: 18:25

QC samples collected? YES NO QC sample ID: QCEB Time: 18:40

Remarks: Concrete apron cracked into 3 pieces. Removed old tubing, used as air line extension need 55ft. Installed new tubing. Check flow throughout purg = 280 ml/m

Sampler: Mark Czeka Signature: [Signature]

might be the extended air line adjusted time between readings

# Sampling and Monitoring Form



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com

Client: CA ARNG  
Site Name: Camp San Luis Obispo Sutter Ave Landfill

Sample Location: MW-10  
Date: 8/4/16

Well Type: Flush Mount Stove pipe Is well cap sealed? YES NO (explain in remarks)  
Bolts:    /    (Size? ) Well O-ring? YES NO NA Tabs Broken? YES (#    /   ) NO  
General condition of Wellhead assembly: Excellent Good Fair Poor (explain in remarks)

Sample Type: 3 Casing Volumes Low Flow No Purge  
Sample Method: Submersible Bladder Pump Peristaltic Pump Watera None  
Sampled with: Disposable bailer From Pump tubing PDB  
Well diameter: 1"     2"     4" X 6"     8"      
Purge Vol. Multiplier: 0.04 0.163 0.653 1.47 2.61 gal/ft.

Initial Measurement Recharge Measurement Purge Volume  
Time: 11:18 Time: NA Calculated: NA  
Depth of well: 44.65 Depth to water: NA Actual: NA  
Depth to water: 31.31 80% recharge depth: NA

Low Flow: Discharge (sec): 15 Recharge (sec): 35 Pressure (psi): 34  
3 Vol: VFD Hertz: NA Pump intake at 39 feet BTOC.

Time	Temp (C)	E.C. (µS)	pH	ORP	Turb (NTU)	Dissolved Oxygen	DTW (FT BTOC)	Flow Rate (LPM/GPM)	Vol. (L/Gal)
19:13	17.7	912	7.17	84.0	1.06	1.46	31.25	0.300	0.900
19:16	17.7	912	7.17	80.4	1.06	1.34	31.34	0.300	1.800
19:19	17.8	912	7.17	78.1	0.68	1.30	31.36	0.300	2.700
19:22	17.8	912	7.16	75.9	1.02	1.28	31.36	0.300	3.600
19:25	17.8	912	7.16	73.7	0.88	1.28	31.36	0.300	4.500

171  
111  
111  
111  
111

Sample appearance: Clear, no odor Sample Time: 19:40

QC samples collected? YES NO QC sample ID:     Time:    

Remarks: Removed old tubing, installed new tubing, measured flow for entire purge - very steady unlike MW-9.

Sampler: Mark Czipt Signature: [Signature]

# Sampling and Monitoring Form



address | 3525 Hyland Ave #200  
Costa Mesa, CA 92626  
phone | 714.662.2759  
web | ecmconsults.com

Client: CA ARNG  
Site Name: Camp San Luis Obispo Sutter Ave Landfill

Sample Location: MW-6  
Date: 8/4/16

Well Type: Flush Mount Stove pipe Is well cap sealed? YES NO (explain in remarks)  
Bolts: 2/0 (Size? 1/2") Well O-ring? YES NO Tabs Broken? YES (# 1) NO  
General condition of Wellhead assembly: Excellent Good Fair Poor (explain in remarks)

Sample Type: 3 Casing Volumes Low Flow No Purge  
Sample Method: Submersible Bladder Pump Peristaltic Pump Watera None  
Sampled with: Disposable bailer From Pump tubing PDB  
Well diameter: 1" \_\_\_\_\_ 2" \_\_\_\_\_ 4" X 6" \_\_\_\_\_ 8" \_\_\_\_\_  
Purge Vol. Multiplier: 0.04 0.163 0.653 1.47 2.61 gal/ft.

<u>Initial Measurement</u>	<u>Recharge Measurement</u>	<u>Purge Volume</u>
Time: <u>11:34</u>	Time: <u>NA</u>	Calculated: <u>NA</u>
Depth of well: <u>39.07</u>	Depth to water: <u>NA</u>	Actual: <u>N/A</u>
Depth to water: <u>24.42</u>	80% recharge depth: <u>NA</u>	

Low Flow: Discharge (sec): \_\_\_\_\_ Recharge (sec): \_\_\_\_\_ Pressure (psi): \_\_\_\_\_  
3 Vol: VFD Hertz: N/A Pump intake at 32 feet BTOC.

Time	Temp (c)	E.C. (µS)	pH	ORP	Turb (NTU)	Dissolved Oxygen (%)	DTW (FT BTOC)	Flow Rate (LPM/BPM)	Vol. (L/Gal)
20:16	19.0	642	7.31	76.5	1.54	2.61	24.43	0.300	0.900
20:19	19.1	642	7.30	75.9	0.76	2.58	24.45	0.300	1.800
20:22	19.2	643	7.29	75.1	0.59	2.55	24.44	0.300	2.700
20:25	19.1	642	7.29	74.5	0.88	2.58	24.45	0.300	3.600
20:28	19.1	642	7.28	74.2	1.39	2.58	24.45	0.300	4.500

Sample appearance: Clear, no odor Sample Time: 20:55

QC samples collected? YES NO QC sample ID: QCBA Time: 20:15

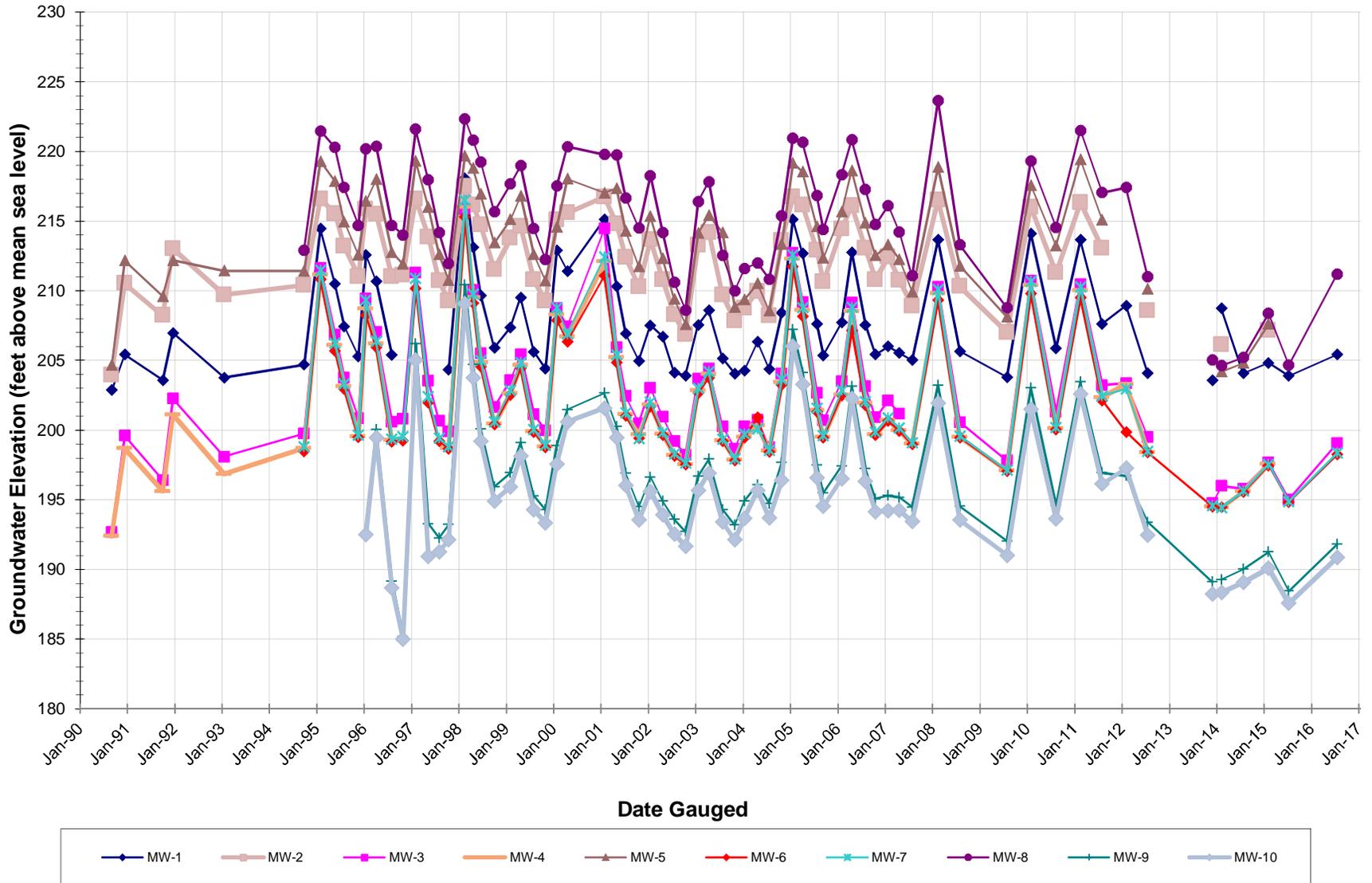
Remarks: Removed old tubing, installed new tubing, wire brushed lid bolts - need to be replaced as threads are damaged.

Sampler: Mark N Cagle Signature: \_\_\_\_\_

## **APPENDIX B**

### **HYDROGRAPH AND SUMMARY OF WATER LEVEL DATA**

**Appendix B**  
**Hydrograph - Groundwater Monitoring Wells**  
Sutter Avenue Landfill, Camp San Luis Obispo, California



## **APPENDIX C**

### **HISTORICAL GROUNDWATER MONITORING AND ANALYTICAL DATA TABLES**

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)
MW-1	230.87	09/28/90	28.00	202.87
		08/01/91	25.44	205.43
		10/28/91	27.29	203.58
		01/13/92	23.90	206.97
		12/02/93	27.11	203.76
	231.78 <sup>(2)</sup>	10/20/94	27.09	204.69
		02/23/95	17.33	214.45
		06/16/95	21.30	210.48
		08/25/95	24.34	207.44
		12/11/95	26.49	205.29
		02/08/96	19.21	212.57
		04/29/96	21.11	210.67
		08/26/96	26.37	205.41
		<i>Construction of Final Landfill Cover</i>		
	233.87 <sup>(3)</sup>	11/19/96	NA	NA
		02/25/97	NA	NA
		06/03/97	NA	NA
		08/26/97	NA	NA
		11/06/97	29.54	204.33
		03/12/98	15.80	218.07
		05/15/98	20.75	213.12
		07/13/98	24.21	209.66
		10/26/98	27.95	205.92
		02/25/99	26.49	207.38
		05/17/99	24.35	209.52
		08/25/99	28.24	205.63
		11/23/99	29.46	204.41
		02/18/00	20.98	212.89
		05/10/00	22.45	211.42
		02/20/01	18.74	215.13
		05/24/01	23.55	210.32
		08/02/01	26.95	206.92
		11/12/01	28.90	204.97
		02/08/02	26.36	207.51
		05/15/02	27.16	206.71
		08/13/02	29.75	204.12
		11/06/02	29.96	203.91
		02/13/03	26.31	207.56
		05/05/03	25.28	208.59
		08/19/03	28.72	205.15
		11/20/03	29.81	204.06
		02/03/04	29.59	204.28
		05/14/04	27.53	206.34
		08/13/04	29.50	204.37
		11/16/04	25.47	208.40
		02/09/05	18.74	215.13
		04/27/05	21.20	212.67
08/15/05		26.24	207.63	
10/03/05		28.51	205.36	
	02/21/06	26.16	207.71	
	05/12/06	21.11	212.76	
	08/22/06	26.31	207.56	
	11/09/06	28.45	205.42	
	02/14/07	27.87	206.00	
	05/11/07	28.34	205.53	
	08/19/07	28.85	205.02	
	03/06/08	20.22	213.65	
	08/21/08	28.22	205.65	
	08/18/09	29.58	203.80	
233.38 <sup>(4)</sup>	02/18/10	19.27	214.11	
	08/31/10	27.50	205.88	
	03/08/11	19.72	213.66	
	08/22/11	25.76	207.62	
	02/23/12	24.45	208.93	
	08/06/12	29.31	204.07	
	12/18/13	29.81	203.57	
	02/27/14	24.64	208.74	
	08/13/14	29.30	204.08	
	02/23/15	28.56	204.82	
07/28/15	29.49	203.89		
	08/04/16	27.95	205.43	

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)	
MW-2	224.73	09/28/90	20.80	203.93	
		08/01/91	14.20	210.53	
		10/28/91	16.50	208.23	
		01/13/92	11.72	213.01	
		12/02/93	15.02	209.71	
	225.76 <sup>(2)</sup>	10/20/94	15.37	210.39	
		02/23/95	9.18	216.58	
		06/16/95	10.23	215.53	
		08/25/95	12.58	213.18	
		12/11/95	14.75	211.01	
		02/08/96	9.92	215.84	
		04/29/96	10.26	215.50	
		08/26/96	14.74	211.02	
	<i>Construction of Final Landfill Cover</i>				
		11/19/96	14.63	211.13	
		02/25/97	9.18	216.58	
		06/03/97	11.91	213.85	
		08/26/97	15.06	210.70	
		11/06/97	16.52	209.24	
		03/12/98	8.29	217.47	
		05/15/98	9.61	216.15	
		07/13/98	11.05	214.71	
		10/26/98	14.24	211.52	
		02/25/99	12.00	213.76	
		05/17/99	11.15	214.61	
		08/25/99	14.98	210.78	
		11/23/99	16.51	209.25	
		02/18/00	10.68	215.08	
		05/10/00	10.18	215.58	
		02/20/01	9.02	216.74	
		05/24/01	10.95	214.81	
		08/02/01	13.36	212.40	
		11/12/01	15.47	210.29	
		02/08/02	12.10	213.66	
		05/15/02	14.97	210.79	
		08/13/02	17.50	208.26	
		11/06/02	18.90	206.86	
		02/13/03	12.48	213.28	
		05/05/03	11.60	214.16	
		08/19/03	16.07	209.69	
		11/20/03	17.92	207.84	
		02/03/04	17.02	208.74	
		05/14/04	15.82	209.94	
		08/13/04	17.55	208.21	
		11/16/04	12.16	213.60	
		02/09/05	9.03	216.73	
		04/27/05	9.63	216.13	
08/15/05		12.86	212.90		
10/03/05		15.13	210.63		
	02/21/06	11.33	214.43		
	05/12/06	9.66	216.10		
	08/22/06	12.73	213.03		
	11/09/06	14.97	210.79		
	02/14/07	13.32	212.44		
	05/11/07	15.01	210.75		
	08/19/07	16.87	208.89		
	03/06/08	9.26	216.50		
	08/21/08	15.45	210.31		
	08/18/09	18.35	207.01		
	02/18/10	9.36	216.00		
	08/31/10	14.07	211.29		
225.36 <sup>(4)</sup>	03/08/11	9.05	216.31		
	08/22/11	12.33	213.03		
	08/06/12	16.79	208.57		
	12/19/13	NA	NA		
	02/27/14	19.23	206.13		
	08/13/14	NA	NA		
	2/23/15	18.21	207.15		
	07/28/15	NA	NA		
	08/04/16	NA	NA		

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)	
MW-3	222.80	09/28/90	30.11	192.69	
		08/01/91	23.20	199.60	
		10/28/91	26.40	196.40	
		01/13/92	20.55	202.25	
		12/02/93	24.71	198.09	
	223.84 <sup>(2)</sup>	10/20/94	24.10	199.74	
		02/23/95	12.21	211.63	
		06/16/95	17.00	206.84	
		08/25/95	20.07	203.77	
		12/11/95	22.98	200.86	
		02/08/96	14.40	209.44	
		04/29/96	16.80	207.04	
		08/26/96	23.25	200.59	
	<i>Construction of Final Landfill Cover</i>				
	223.82 <sup>(3)</sup>	11/19/96	23.05	200.79	
		02/25/97	12.54	211.30	
		06/03/97	20.28	203.54	
		08/26/97	23.15	200.67	
		11/06/97	23.94	199.88	
		03/12/98	7.98	215.84	
		05/15/98	13.78	210.04	
		07/13/98	18.31	205.51	
		10/26/98	22.17	201.65	
		02/25/99	20.24	203.58	
		05/17/99	18.38	205.44	
		08/25/99	22.67	201.15	
		11/23/99	23.87	199.95	
		02/18/00	15.07	208.75	
		05/10/00	16.37	207.45	
		02/20/01	9.37	214.45	
		05/24/01	17.89	205.93	
		08/02/01	21.39	202.43	
		11/12/01	23.33	200.49	
		02/08/02	20.81	203.01	
		05/15/02	22.87	200.95	
		08/13/02	24.61	199.21	
		11/06/02	25.61	198.21	
		02/13/03	20.12	203.70	
		05/05/03	19.40	204.42	
		08/19/03	23.55	200.27	
		11/20/03	25.15	198.67	
		02/03/04	23.55	200.27	
		05/14/04	23.08	200.74	
		08/13/04	25.05	198.77	
		11/16/04	19.77	204.05	
		02/09/05	11.09	212.73	
		04/27/05	14.64	209.18	
08/15/05		21.17	202.65		
10/03/05		23.11	200.71		
	02/21/06	20.32	203.50		
	05/12/06	14.67	209.15		
	08/22/06	20.69	203.13		
	11/09/06	22.92	200.90		
	02/14/07	21.72	202.10		
	05/11/07	22.65	201.17		
	08/19/07	NA	NA		
	03/06/08	13.56	210.26		
	08/21/08	23.26	200.56		
	08/18/09	25.74	197.81		
223.55 <sup>(4)</sup>	02/18/10	12.85	210.70		
	08/31/10	22.25	201.30		
	03/08/11	13.08	210.47		
	08/22/11	20.33	203.22		
	02/23/12	20.19	203.36		
	08/06/12	24.06	199.49		
	12/19/13	28.80	194.75		
	02/27/14	27.57	195.98		
	08/13/14	27.76	195.79		
	02/23/15	25.88	197.67		
	07/28/15	28.53	195.02		
	08/04/16	24.51	199.04		

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)
MW-4	223.40	09/28/90	31.02	192.38
		08/01/91	24.71	198.69
		10/28/91	27.80	195.60
		01/13/92	22.30	201.10
		12/02/93	26.56	196.84
	224.42 <sup>(2)</sup>	10/20/94	25.72	198.70
		02/23/95	13.27	211.15
		06/16/95	18.35	206.07
		08/25/95	21.28	203.14
		12/11/95	24.88	199.54
		02/08/96	15.71	208.71
		04/29/96	18.24	206.18
		08/26/96	25.15	199.27
		<i>Construction of Final Landfill Cover</i>		
	226.10 <sup>(3)</sup>	11/19/96	NA	NA
		02/25/97	NA	NA
		06/03/97	NA	NA
		08/26/97	NA	NA
		11/06/97	27.39	198.71
		03/12/98	10.12	215.98
		05/15/98	16.59	209.51
		07/13/98	21.25	204.85
		10/26/98	25.67	200.43
		02/25/99	23.47	202.63
		05/17/99	21.42	204.68
		08/25/99	26.19	199.91
		11/23/99	27.28	198.82
		02/18/00	17.81	208.29
		05/10/00	19.40	206.70
		02/20/01	14.02	212.08
		05/24/01	20.88	205.22
		08/02/01	24.95	201.15
		11/12/01	26.42	199.68
		02/08/02	24.28	201.82
		05/15/02	26.38	199.72
		08/13/02	27.90	198.20
		11/06/02	28.57	197.53
		02/13/03	23.25	202.85
		05/05/03	22.09	204.01
		08/19/03	26.86	199.24
		11/20/03	28.24	197.86
		02/03/04	26.61	199.49
		05/14/04	25.78	200.32
		08/13/04	27.60	198.50
		11/16/04	22.67	203.43
		02/09/05	13.83	212.27
		04/27/05	17.50	208.60
		08/15/05	24.67	201.43
		10/03/05	26.62	199.48
		02/21/06	23.57	202.53
05/12/06		17.56	208.54	
	08/22/06	24.16	201.94	
	11/09/06	26.42	199.68	
	02/14/07	25.40	200.70	
	05/11/07	26.14	199.96	
	08/19/07	27.09	199.01	
225.84 <sup>(4)</sup>	03/06/08	16.31	209.79	
	08/21/08	26.61	199.49	
	08/18/09	28.75	197.09	
	02/18/10	15.46	210.38	
	08/31/10	25.72	200.12	
	03/08/11	15.82	210.02	
	08/22/11	23.50	202.34	
	02/23/12	22.55	203.29	
	08/06/12	27.44	198.40	
	12/19/13	31.33	194.51	
	02/27/14	31.42	194.42	
	08/13/14	30.25	195.59	
	02/23/15	28.29	197.55	
	07/28/15	NA	NA	
	08/04/16	NA	NA	

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)	
MW-5	228.25	09/28/90	23.60	204.65	
		08/01/91	16.09	212.16	
		10/28/91	18.65	209.60	
		01/13/92	16.08	212.17	
		12/02/93	16.82	211.43	
	229.33 <sup>(2)</sup>	10/20/94	17.91	211.42	
		02/23/95	10.04	219.29	
		06/16/95	11.48	217.85	
		08/25/95	14.38	214.95	
		12/11/95	16.77	212.56	
		02/08/96	12.90	216.43	
		04/29/96	11.34	217.99	
		08/26/96	16.56	212.77	
	<i>Construction of Final Landfill Cover</i>				
	229.55 <sup>(3)</sup>	11/19/96	17.43	211.90	
		02/25/97	10.01	219.32	
		06/03/97	13.54	216.01	
		08/26/97	16.96	212.59	
		11/06/97	18.81	210.74	
		03/12/98	9.88	219.67	
		05/15/98	10.74	218.81	
		07/13/98	12.61	216.94	
		10/26/98	16.11	213.44	
		02/25/99	14.43	215.12	
		05/17/99	12.74	216.81	
		08/25/99	16.96	212.59	
		11/23/99	18.85	210.70	
		02/18/00	14.98	214.57	
		05/10/00	11.53	218.02	
		02/20/01	12.53	217.02	
		05/24/01	12.21	217.34	
		08/02/01	15.28	214.27	
		11/12/01	17.82	211.73	
		02/08/02	14.21	215.34	
		05/15/02	17.22	212.33	
		08/13/02	20.15	209.40	
		11/06/02	21.96	207.59	
		02/13/03	15.40	214.15	
		05/05/03	14.14	215.41	
		08/19/03	15.37	214.18	
		11/20/03	20.72	208.83	
		02/03/04	20.20	209.35	
		05/14/04	19.02	210.53	
		08/13/04	21.00	208.55	
		11/16/04	16.22	213.33	
		02/09/05	10.37	219.18	
		04/27/05	11.01	218.54	
		08/15/05	14.93	214.62	
		10/03/05	17.21	212.34	
		02/21/06	13.90	215.65	
05/12/06		10.93	218.62		
08/22/06		14.68	214.87		
11/09/06		17.03	212.52		
02/14/07		16.25	213.30		
	05/11/07	17.29	212.26		
	08/19/07	19.63	209.92		
	03/06/08	10.69	218.86		
	08/21/08	17.78	211.77		
	08/18/09	22.31	208.11		
230.42 <sup>(4)</sup>	02/18/10	12.85	217.57		
	08/31/10	17.20	213.22		
	03/08/11	11.01	219.41		
	08/22/11	15.35	215.07		
	08/06/12	20.28	210.14		
	12/19/13	NA	NA		
	02/27/14	26.22	204.2		
	08/13/14	25.61	204.81		
	02/23/15	22.82	207.60		
	07/28/15	NA	NA		
	08/04/16	NA	NA		

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)		
MW-6	222.93 <sup>(2)</sup>	10/20/94	24.46	198.47		
		02/23/95	12.12	210.81		
		06/16/95	17.26	205.67		
		08/25/95	19.98	202.95		
		12/11/95	23.45	199.48		
		02/08/96	14.68	208.25		
		04/29/96	17.00	205.93		
		08/26/96	23.78	199.15		
		<b>Construction of Final Landfill Cover</b>				
		11/19/96	23.69	199.24		
		02/25/97	12.75	210.18		
		06/03/97	20.95	201.98		
		08/26/97	23.73	199.20		
		11/06/97	24.26	198.67		
		03/12/98	7.63	215.30		
	05/15/98	13.83	209.10			
	07/13/98	18.37	204.56			
	10/26/98	22.53	200.40			
	02/25/99	20.40	202.53			
	05/17/99	18.50	204.43			
	08/25/99	23.06	199.87			
	11/23/99	24.15	198.78			
	02/18/00	15.05	207.88			
	05/10/00	16.58	206.35			
	02/20/01	11.87	211.06			
	05/24/01	18.08	204.85			
	08/02/01	21.92	201.01			
	11/12/01	23.52	199.41			
	02/08/02	21.26	201.67			
	05/15/02	23.29	199.64			
	08/13/02	24.77	198.16			
	11/06/02	25.42	197.51			
	02/13/03	20.28	202.65			
	05/05/03	19.17	203.76			
	08/19/03	23.71	199.22			
	11/20/03	25.10	197.83			
	02/03/04	23.48	199.45			
	05/14/04	22.03	200.90			
	08/13/04	24.50	198.43			
	11/16/04	19.70	203.23			
	02/09/05	11.21	211.72			
	04/27/05	14.77	208.16			
	08/15/05	21.61	201.32			
	10/03/05	23.48	199.45			
	02/21/06	20.45	202.48			
	05/12/06	15.78	207.15			
	08/22/06	21.15	201.78			
	11/09/06	23.30	199.63			
	02/14/07	22.28	200.65			
	05/11/07	22.99	199.94			
08/19/07	23.95	198.98				
03/06/08	13.59	209.34				
08/21/08	23.47	199.46				
08/18/09	25.60	197.07				
02/18/10	12.87	209.80				
08/31/10	22.64	200.03				
03/08/11	13.17	209.50				
08/22/11	20.55	202.12				
02/23/12	22.80	199.87				
08/06/12	24.28	198.39				
12/17/13	28.15	194.52				
02/27/14	28.22	194.45				
08/13/14	27.11	195.56				
02/23/15	25.21	197.46				
07/28/15	27.83	194.84				
08/04/16	24.42	198.25				
	222.67 <sup>(4)</sup>					

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)		
MW-7	227.59 <sup>(2)</sup>	10/20/94	28.78	198.81		
		02/23/95	16.11	211.48		
		06/16/95	21.37	206.22		
		08/25/95	24.27	203.32		
		12/11/95	27.94	199.65		
		02/08/96	18.25	209.34		
		04/29/96	21.21	206.38		
		08/26/96	28.23	199.36		
		<b>Construction of Final Landfill Cover</b>				
		11/19/96		28.07	199.52	
		02/25/97		16.68	210.91	
		06/03/97		25.19	202.40	
		08/26/97		28.17	199.42	
		11/06/97		28.78	198.81	
		03/12/98		11.09	216.50	
	05/15/98		17.84	209.75		
	07/13/98		22.61	204.98		
	10/26/98		27.01	200.58		
	02/25/99		24.75	202.84		
	05/17/99		22.74	204.85		
	08/25/99		27.55	200.04		
	11/23/99		28.67	198.92		
	02/18/00		18.79	208.80		
	05/10/00		20.70	206.89		
	02/20/01		15.16	212.43		
	05/24/01		22.20	205.39		
	08/02/01		26.33	201.26		
	11/12/01		28.20	199.39		
	02/08/02		25.58	202.01		
	05/15/02		27.78	199.81		
	08/13/02		29.29	198.30		
	11/06/02		29.97	197.62		
	02/13/03		24.60	202.99		
	05/05/03		23.38	204.21		
	08/19/03		28.24	199.35		
	11/20/03		29.66	197.93		
	02/03/04		27.87	199.72		
	05/14/04		27.50	200.09		
	08/13/04		29.05	198.54		
	11/16/04		23.94	203.65		
	02/09/05		15.01	212.58		
	04/27/05		18.81	208.78		
	08/15/05		26.02	201.57		
	10/03/05		27.98	199.61		
	02/21/06		24.75	202.84		
	05/12/06		18.78	208.81		
	08/22/06		25.53	202.06		
	11/09/06		27.72	199.87		
	02/14/07		26.70	200.89		
	05/11/07		27.45	200.14		
08/19/07		28.51	199.08			
03/06/08		17.51	210.08			
08/21/08		28.02	199.57			
08/18/09		31.34	197.11			
02/18/10		17.79	210.66			
08/31/10		28.26	200.19			
228.45 <sup>(4)</sup>		03/08/11	18.17	210.28		
		08/22/11	26.00	202.45		
		02/23/12	25.50	202.95		
		08/06/12	29.97	198.48		
		12/18/13	33.89	194.56		
		02/27/14	34.02	194.43		
		08/13/14	32.82	195.63		
		02/23/15	30.92	197.53		
		07/28/15	33.57	194.88		
		08/04/16	30.09	198.36		

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)		
MW-8	228.29 <sup>(2)</sup>	10/20/94	15.38	212.91		
		02/23/95	6.83	221.46		
		06/16/95	8.00	220.29		
		08/25/95	10.89	217.40		
		12/11/95	13.60	214.69		
		02/08/96	8.10	220.19		
		04/29/96	7.92	220.37		
		08/26/96	13.59	214.70		
		<b>Construction of Final Landfill Cover</b>				
		11/19/96	14.29	214.00		
		02/25/97	6.70	221.59		
		06/03/97	10.33	217.96		
		08/26/97	14.13	214.16		
		11/06/97	16.34	211.95		
		03/12/98	5.95	222.34		
	05/15/98	7.49	220.80			
	07/13/98	9.05	219.24			
	10/26/98	12.61	215.68			
	02/25/99	10.63	217.66			
	05/17/99	9.31	218.98			
	08/25/99	13.83	214.46			
	11/23/99	16.05	212.24			
	02/18/00	10.77	217.52			
	05/10/00	7.95	220.34			
	02/20/01	8.52	219.77			
	05/24/01	8.56	219.73			
	08/02/01	11.63	216.66			
	11/12/01	13.79	214.50			
	02/08/02	10.03	218.26			
	05/15/02	14.11	214.18			
	08/13/02	17.70	210.59			
	11/06/02	19.68	208.61			
	02/13/03	11.88	216.41			
	05/05/03	10.47	217.82			
	08/19/03	15.76	212.53			
	11/20/03	18.29	210.00			
	02/03/04	16.71	211.58			
	05/14/04	16.30	211.99			
	08/13/04	17.45	210.84			
	11/16/04	12.91	215.38			
	02/09/05	7.33	220.96			
	04/27/05	7.64	220.65			
	08/15/05	11.44	216.85			
	10/03/05	13.90	214.39			
	02/21/06	9.98	218.31			
	05/12/06	7.46	220.83			
	08/22/06	11.01	217.28			
	11/09/06	13.55	214.74			
	02/14/07	12.18	216.11			
	05/11/07	14.09	214.20			
08/19/07	17.23	211.06				
03/06/08	4.65	223.64				
08/21/08	15.00	213.29				
08/18/09	19.18	208.77				
02/18/10	8.64	219.31				
08/31/10	13.40	214.55				
227.95 <sup>(4)</sup>	03/08/11	6.45	221.50			
	08/22/11	10.90	217.05			
	02/23/12	10.55	217.4			
	08/06/12	16.97	211.0			
	12/18/13	22.92	205.03			
	02/27/14	23.33	204.62			
	08/13/14	22.75	205.20			
	02/23/15	19.57	208.38			
	07/28/15	23.30	204.65			
	08/04/16	16.77	211.18			

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)
MW-9	224.72	02/08/96	32.20	192.52
		04/29/96	24.68	200.04
		08/26/96	35.56	189.16
		<i>Construction of Final Landfill Cover</i>		
		11/19/96	39.53	185.19
		02/25/97	18.51	206.21
		06/03/97	31.45	193.27
		08/26/97	32.46	192.26
		11/06/97	31.50	193.22
		03/12/98	14.30	210.42
		05/15/98	20.02	204.70
		07/13/98	24.65	200.07
		10/26/98	28.79	195.93
		02/25/99	27.79	196.93
		05/17/99	25.61	199.11
		08/25/99	29.44	195.28
		11/23/99	30.44	194.28
		02/18/00	25.83	198.89
		05/10/00	23.25	201.47
		02/20/01	22.06	202.66
		05/24/01	24.47	200.25
		08/02/01	27.82	196.90
		11/12/01	30.22	194.50
		02/08/02	28.10	196.62
		05/15/02	29.82	194.90
		08/13/02	31.14	193.58
		11/06/02	32.01	192.71
		02/13/03	28.03	196.69
		05/05/03	26.80	197.92
		08/19/03	30.42	194.30
		11/20/03	31.54	193.18
		02/03/04	29.80	194.92
		05/14/04	28.64	196.08
		08/13/04	29.98	194.74
		11/16/04	27.05	197.67
		02/09/05	17.51	207.21
		04/27/05	20.59	204.13
		08/15/05	27.22	197.50
		10/03/05	29.23	195.49
		02/21/06	27.29	197.43
		05/12/06	21.60	203.12
		08/22/06	27.48	197.24
		11/09/06	29.66	195.06
		02/14/07	29.42	195.30
		05/11/07	29.55	195.17
		08/19/07	30.24	194.48
		03/06/08	21.50	203.22
		08/21/08	30.18	194.54
		08/18/09	33.88	192.03
		02/18/10	22.90	203.01
	225.91 <sup>(4)</sup>	08/31/10	31.32	194.59
		03/08/11	22.43	203.48
		08/22/11	28.98	196.93
		02/23/12	29.20	196.71
		08/06/12	32.52	193.39
		12/17/13	36.80	189.11
		02/27/14	36.64	189.27
		08/13/14	35.90	190.01
		02/23/15	34.65	191.26
		07/28/15	37.46	188.45
		08/04/16	34.11	191.80

**Table C-1**  
**Historical Groundwater Level Data**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Reference Elevation (feet msl)	Date	Depth to Water <sup>(1)</sup> (feet)	Groundwater Elevation (feet msl)	
MW-10	219.26	02/08/96	26.75	192.51	
		04/29/96	19.81	199.45	
		08/26/96	30.57	188.69	
	<i>Construction of Final Landfill Cover</i>				
			11/19/96	34.25	185.01
			02/25/97	14.22	205.04
			06/03/97	28.31	190.95
			08/26/97	28.00	191.26
			11/06/97	27.11	192.15
			03/12/98	10.20	209.06
			05/15/98	15.52	203.74
			07/13/98	20.05	199.21
			10/26/98	24.34	194.92
			02/25/99	23.34	195.92
			05/17/99	21.10	198.16
			08/25/99	24.98	194.28
			11/23/99	25.91	193.35
			02/18/00	21.68	197.58
			05/10/00	18.66	200.60
			02/20/01	17.68	201.58
			05/24/01	19.81	199.45
			08/02/01	23.23	196.03
			11/12/01	25.71	193.55
			02/08/02	23.66	195.60
			05/15/02	25.35	193.91
			08/13/02	26.71	192.55
			11/06/02	27.58	191.68
			02/13/03	23.60	195.66
			05/05/03	22.35	196.91
			08/19/03	25.85	193.41
			11/20/03	27.13	192.13
			02/03/04	25.58	193.68
			05/14/04	23.58	195.68
			08/13/04	25.57	193.69
			11/16/04	22.87	196.39
			02/09/05	13.24	206.02
			04/27/05	15.97	203.29
			08/15/05	22.67	196.59
			10/03/05	24.72	194.54
			02/21/06	22.75	196.51
			05/12/06	16.98	202.28
			08/22/06	22.93	196.33
			11/09/06	25.11	194.15
		02/14/07	25.03	194.23	
		05/11/07	25.02	194.24	
		08/19/07	25.82	193.44	
		03/06/08	17.32	201.94	
		08/21/08	25.71	193.55	
		08/18/09	31.15	191.01	
		02/18/10	20.68	201.48	
	222.16 <sup>(4)</sup>	08/31/10	28.54	193.62	
		03/08/11	19.56	202.60	
		08/22/11	26.02	196.14	
		02/23/12	24.90	197.26	
		08/06/12	29.71	192.45	
		12/19/13	33.93	188.23	
		02/27/14	33.82	188.34	
		08/13/14	33.10	189.06	
		02/23/15	32.07	190.09	
		07/28/15	34.59	187.57	
		08/04/16	31.31	190.85	

**Notes:**

- (1) – Measured from top of casing.
  - (2) – Top of casing, relative to Caltrans benchmark on Highway 1.
  - (3) – Resurveyed April 7, 1997 after extending well casing.
  - (4) – Resurveyed June 23, 2009 following well head maintenance work by Eco & Associates.
- MSL – mean sea level  
NA – Indicates no data available.  
Elevation relative to City of San Luis Obispo benchmark #155, SWC of Santa Rosa & Meinecke.

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-1	09/28/90	<10 <sup>(3)</sup>	<5	<5	<b>1</b> <sup>(4)</sup>	<5	<b>2</b> <sup>(4,5)</sup>	NA <sup>(6)</sup>	NA	NA	NA		
	08/02/91	<100	<5	<5	<b>8.6</b>	<5	<5	NA	<5	NA	<5		
	10/25/91	<100	<5	<5	<b>7.3</b>	<b>30</b> <sup>(7)</sup>	<b>13.3</b>	NA	<5	NA	<5		
	01/13/92	<b>130</b> <sup>(9)</sup>	<10	<10	<b>6.5</b>	<b>22</b> <sup>(8,9)</sup>	<5	NA	<5	NA	<5		
	12/02/93	<10	<5	<2	<5	<10	<20	NA	<2	NA	<2		
	10/20/94	NA	<0.5	<0.5	<b>1.3</b>	<0.5	NA	<b>6</b>	<0.5	NA	<0.5		
	12/12/94	NA	<0.5	<0.5	<b>1.4</b>	<0.5	NA	<b>0.8</b>	<0.5	NA	<0.5		
	01/05/95	NA	<0.5	<b>1.9</b>	<b>3.5</b>	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/23/95	<5	<0.5	<b>7.7</b>	<b>8.3</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	06/16/95	<5	<0.5	<b>1.5</b>	<b>5.0</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/95	<5	<0.5	<0.5	<b>2.3</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	12/11/95	<5	<0.5	<0.5	<b>0.9</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	02/08/96	<5	<0.5	<b>2.5</b>	<b>4.0</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	04/29/96	<5	<0.5	<b>1.0</b>	<b>5.9</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	08/26/96	NA	<1.0	<1.0	<b>1.0</b>	<10	NA	NA	<1.0	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
		02/22/97	NA	<1.0	<b>1.0</b> <sup>(4)</sup>	<b>4.9</b>	<10	NA	NA	<1.0	NA	<1.0	
		08/26/97	NA	<1.0	<1.0	<b>0.7</b> <sup>(4)</sup>	<10	NA	NA	<1.0	NA	<1.0	
		03/12/98	<5	<0.5	<b>0.9</b>	<0.5	<b>1.1</b>	NA	NA	<0.5	NA	<0.5	
		07/13/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<b>0.5</b>	NA	<0.5	
	02/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/18/00	<5	<0.5	<0.5	<b>2.7</b>	<0.5	NA	NA	<0.5	NA	<0.5		
	02/20/01	NA	<0.5	<0.5	<b>1.3</b>	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/02/01	NA	<0.5	<0.5	<b>0.6</b>	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/08/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/03/04	<5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5		
	02/10/05	NA	<0.5	<b>1.1</b>	<b>3.1</b>	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/15/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	03/07/08	<50	<0.5	<1.0	<b>1.6</b>	<10	NA	<1.0	<1.0	NA	<1.0		
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2		
	02/18/10	<5.0	<0.2	<0.2	<b>1.4</b>	<0.5	NA	<0.3	<0.2	NA	<0.2		
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	03/08/11	<5.0	<0.20	<0.20	<b>1.5</b>	<0.50	NA	<0.30	<0.20	NA	<0.20		
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20		
	12/18/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<0.5	NA	<0.5		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.2	<0.3	<0.2	NA	<0.2		
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichloro-fluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-1 (Cont.)	02/24/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
	07/29/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
MW-2	09/28/90	<10	<5	<5	<10	<5	1 <sup>(4,5)</sup>	NA	NA	NA	NA		
	08/01/91	<100	<5	<5	<5	<5	<5	NA	<5	NA	<5		
	10/25/91	<100	<5	<5	<5	9.1 <sup>(8)</sup>	<5	NA	<5	NA	<5		
	01/13/92	<100	<5	<5	<5	16	<5	NA	<5	NA	<5		
	12/02/93	<10	<5	<2	<5	<10	<20	NA	<2	NA	<2		
	10/20/94	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/23/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2		
	02/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	03/08/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.4	<0.3	<0.2	NA	<0.2		
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	02/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
07/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
08/04/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
MW-3	09/28/90	<10	<5	<5	<13	<5	2 <sup>(4,5)</sup>	NA	NA	NA	NA		
	08/01/91	<100	<5	<5	<5	<5	<5	NA	<5	NA	<5		
	10/25/91	<100	<5	<5	<5	10 <sup>(8)</sup>	<5	NA	<5	NA	<5		
	01/13/92	200	<5	<5	<5	24	<5	NA	<5	NA	<5		
	12/02/93	<10	<5	<2	<5	<10	<20	NA	<2	NA	<2		
	10/20/94	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/23/95 <sup>(10)</sup>	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	06/16/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	12/11/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/08/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	04/29/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	<b>Construction of Final Landfill Cover</b>												
		02/22/97	NA	<1.0	<1.0	<1.0	<1.0	NA	NA	<1.0	NA	<1.0	
		08/26/97	NA	<1.0	<1.0	<1.0	<1.0	NA	NA	<1.0	NA	<1.0	
		03/12/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		07/13/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
	02/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/18/00	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-3 (Cont.)	08/02/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/08/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/03/04	<5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5		
	02/10/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/14/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	03/07/08	<50	<0.5	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<0.5		
	08/18/09	<50	<0.5	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<0.5		
	02/18/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2		
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	03/08/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20		
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20		
	12/19/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<0.5	NA	<0.5		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.2	<0.3	<0.2	NA	<0.2		
08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS			
02/24/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<b>0.16J</b>	<0.093	<0.11		
07/29/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
MW-4	09/28/90	<10	<b>2</b> <sup>(4)</sup>	<5	<14	<5	<b>1</b> <sup>(4,5)</sup>	NA	NA	NA	NA		
	08/01/91	<100	<5	<5	<5	<5	<5	NA	<5	NA	<5		
	10/29/91	<100	<b>5.6</b>	<5	<5	<b>5.9</b> <sup>(8)</sup>	<5	NA	<5	NA	<5		
	01/14/92	<100	<b>5.5</b>	<5	<5	<b>13</b>	<5	NA	<5	NA	<5		
	12/02/93	<10	<b>5</b>	<2	<5	<10	<20	NA	<2	NA	<2		
	10/20/94	NA	<b>6.7</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>1.8</b>	NA	<0.5		
	12/12/94	NA	<b>4.5</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>1.3</b>	NA	<0.5		
	01/05/95	NA	<b>2.5</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.8</b>	NA	<0.5		
	02/23/95	<5	<b>4.8</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.4</b>	NA	<0.5		
	06/16/95	<5	<b>5</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.3</b>	NA	<0.5		
	08/25/95	<5	<b>4.7</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.3</b>	NA	<0.5		
	12/11/95	<5	<b>6.2</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.6</b>	NA	<0.5		
	02/08/96	<5	<b>5.4</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.9</b>	NA	<0.5		
	04/29/96	<5	<b>5.4</b>	<0.5	<0.5	<0.5	NA	NA	<b>3</b>	NA	<0.5		
	08/26/96	NA	<b>3.4</b>	<1.0	<1.0	<1.0	NA	NA	<b>2.7</b>	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
	02/22/97	NA	<b>3.7</b>	<1.0	<1.0	<1.0	NA	NA	<b>3.2</b>	NA	<1.0		
	08/26/97	NA	<b>2.5</b>	<1.0	<1.0	<1.0	NA	NA	<b>1.6</b>	NA	<1.0		
	03/12/98	<5	<b>4.5</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.8</b>	NA	<0.5		
07/13/98	<5	<b>3.2</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.3</b>	NA	<0.5			
02/25/99	<5	<b>2.5</b>	<0.5	<0.5	<0.5	NA	NA	<b>1</b>	NA	<0.5			

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichloro-fluoro-methane	Toluene	Methyl t-butyl Ether
		µg/L										
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5
MW-4 (Cont.)	08/25/99	<5	<b>1.7</b>	<0.5	<0.5	<0.5	NA	NA	<b>0.7</b>	NA	<0.5	
	02/18/00	<5	<b>2.1</b>	<0.5	<0.5	<0.5	NA	NA	<b>0.8</b>	NA	<0.5	
	02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	8/2/2001 <sup>(11)</sup>	NA	<b>1.4</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/08/02	NA	<b>1.6</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.6</b>	NA	<0.5	
	02/13/03	NA	<b>2.2</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.7</b>	NA	<0.5	
	02/03/04	<5	<b>2.4</b>	<0.5	<0.5	<0.5	<10	<0.5	<b>0.7</b>	NA	<0.5	
	02/10/05	NA	<b>2.4</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.6</b>	NA	<0.5	
	02/22/06	NA	<b>1.7</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/15/07	NA	<b>2.0</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	03/07/08	<50	<b>1.5</b>	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<1.0	
	08/18/09	<5.0	<b>1.5</b>	<0.2	<0.2	<0.5	NA	<0.3	<b>0.78J</b>	NA	<0.2	
	02/18/10	<5.0	<b>1.8</b>	<0.2	<0.2	<0.5	NA	<0.3	<b>1.1</b>	NA	<0.2	
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/08/11	<5.0	<b>1.4</b>	<0.20	<0.20	<0.50	NA	<0.30	<b>0.68J</b>	NA	<0.20	
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/23/12	<5.0	<b>1.20</b>	<0.2	<0.2	<0.50	NA	<0.30	<b>0.60J</b>	NA	<0.20	
	12/19/13	<10	<b>0.750J</b>	<0.5	<0.5	<2.0	NA	<1.5	<b>0.710J</b>	NA	<0.5	
02/27/14	<5.0	<b>0.59J</b>	<0.2	<0.2	<0.5	<5.2	<0.3	<b>0.60J</b>	NA	<0.2		
08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
02/24/15	<4.6	<b>0.7</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>1.7</b>	<0.13	<0.093	<0.11	
07/29/15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
08/04/16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
MW-5	09/28/90	<10	<5	<5	<13	<5	<13	NA	NA	NA	NA	
	08/01/91	<100	<5	<5	<5	<5	<5	NA	<5	NA	<5	
	10/29/91	<100	<5	<5	<5	<b>8.7<sup>(8)</sup></b>	<5	NA	<5	NA	<5	
	01/14/92	<b>120</b>	<5	<5	<5	<b>22</b>	<b>12</b>	NA	<5	NA	<5	
	12/02/93	<10	<5	<2	<5	<10	<20	NA	<2	NA	<2	
	10/20/94	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/23/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2	
	02/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/08/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<6.0	<0.3	<0.2	NA	<0.2	
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/24/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
07/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
08/04/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-6	10/19/94	NA	<b>5.4</b>	<0.5	<0.5	<0.5	<10	<0.5	<b>1.5</b>	NA	<b>1.1</b>		
	12/12/94	NA	<b>3.7</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.9</b>	NA	<0.5		
	01/05/95	NA	<b>3.6</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>1</b>	NA	<0.5		
	02/23/95	<5	<b>3.7</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.1</b>	NA	<0.5		
	06/16/95	<5	<b>6</b>	<0.5	<0.5	<0.5	NA	NA	<b>2</b>	NA	<0.5		
	08/25/95	<5	<b>7.6</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.6</b>	NA	<0.5		
	12/11/95	<5	<b>6.4</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.5</b>	NA	<0.5		
	02/08/96	<5	<b>6</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.9</b>	NA	<0.5		
	04/29/96	<5	<b>5.3</b>	<0.5	<0.5	<0.5	NA	NA	<b>2.4</b>	NA	<0.5		
	08/26/96	NA	<b>5.4</b>	<1.0	<1.0	<1.0	NA	NA	<b>4.4</b>	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
		02/22/97	NA	<b>4.3</b>	<1.0	<1.0	<1.0	NA	NA	<b>4</b>	NA	<1.0	
		08/26/97	NA	<b>4.9</b>	<1.0	<1.0	<1.0	NA	NA	<b>3.7</b>	NA	<1.0	
		03/12/98	<5	<b>4.7</b>	<0.5	<0.5	<0.5	NA	NA	<b>2.4</b>	NA	<0.5	
		07/13/98	<5	<b>4.8</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.8</b>	NA	<0.5	
		02/25/99	<5	<b>3.3</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.5</b>	NA	<0.5	
		08/25/99	<5	<b>3.3</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.3</b>	NA	<0.5	
		02/18/00	<5	<b>3.7</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.2</b>	NA	<0.5	
		02/20/01	NA	<b>2.8</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>1</b>	NA	<0.5	
		08/02/01	NA	<b>2.9</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>1.2</b>	NA	<0.5	
		02/08/02	NA	<b>2.6</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.8</b>	NA	<0.5	
		02/13/03	NA	<b>2.2</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.7</b>	NA	<0.5	
		02/03/04	<5	<b>2.5</b>	<0.5	<0.5	<0.5	<10	<0.5	<b>0.7</b>	NA	<0.5	
		02/10/05	NA	<b>2.7</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.6</b>	NA	<0.5	
		02/22/06	NA	<b>2.1</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.5</b>	NA	<0.5	
		02/15/07	NA	<b>2.8</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.6</b>	NA	<0.5	
		03/07/08	<50	<b>1.9</b>	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<1.0	
		08/18/09	<5.0	<b>1.3</b>	<0.2	<0.2	<0.5	NA	<0.3	<b>0.92J</b>	NA	<0.5	
		02/18/10	<5.0	<b>1.4</b>	<0.2	<0.2	<0.5	NA	<0.3	<b>1.1</b>	NA	<0.2	
		08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		03/08/11	<5.0	<b>0.91J</b>	<0.20	<0.20	<0.50	NA	<0.30	<b>0.66J</b>	NA	<0.20	
		08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		02/23/12	<5.0	<b>1.3</b>	<0.2	<0.2	<0.50	NA	<0.30	<b>0.81J</b>	NA	<0.20	
	12/17/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<b>0.980J</b>	NA	<0.5		
	02/27/14	<5.0	<b>0.48J</b>	<0.2	<0.2	<0.5	<5.9	<0.3	<b>1.5</b>	NA	<0.2		
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	02/23/15	<4.6	<b>0.52</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>0.86</b>	<0.13	<0.093	<0.11	
	07/29/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<b>1.2</b>	<0.13	<0.093	<0.11	
	07/29/15 (field duplicate = MW-600)	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<b>1.2</b>	<0.13	<0.093	<0.11	

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-6 (Cont.)	08/04/16	<4.6	<b>0.76</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>3.5</b>	<0.13	<0.093	<0.11	
	08/04/16 (field duplicate = QCBD)	<4.6	<b>0.70</b>	<0.093	<0.062	<0.48	NS	<0.099	<b>3.4</b>	<0.13	<0.093	<0.11	
MW-7	10/18/94	NA	<b>1.1</b>	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<b>1</b>		
	12/12/94	NA	<b>1.4</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	01/05/95	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/23/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	06/16/95	<5	<b>1.5</b>	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/95	<5	<b>1.2</b>	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	12/11/95	<5	<b>2</b>	<0.5	<0.5	<0.5	NA	NA	<b>1.7</b>	NA	<0.5		
	02/08/96	<5	<b>1.2</b>	<0.5	<0.5	<0.5	NA	NA	<b>2</b>	NA	<0.5		
	04/29/96	<5	<b>2</b>	<0.5	<0.5	<0.5	NA	NA	<b>3.9</b>	NA	<0.5		
	08/26/96	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
		02/22/97	NA	<b>1.1</b>	<1.0	<1.0	<10	NA	NA	<b>1</b>	NA	<1.0	
		08/26/97	NA	<b>0.7</b> <sup>(4)</sup>	<1.0	<1.0	<10	NA	NA	<b>0.5</b> <sup>(4)</sup>	NA	<1.0	
		03/12/98	<5	<b>1.3</b>	<0.5	<0.5	<0.5	NA	NA	<b>0.8</b>	NA	<0.5	
		07/13/98	<5	<b>0.9</b>	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		02/25/99	<5	<b>1.4</b>	<0.5	<0.5	<0.5	NA	NA	<b>0.5</b>	NA	<0.5	
		08/25/99	<5	<b>1.3</b>	<0.5	<0.5	<0.5	NA	NA	<b>0.6</b>	NA	<0.5	
		02/18/00	<5	<b>1</b>	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		08/02/01	NA	<b>1.6</b>	<0.5	<0.5	<0.5	NA	<0.5	<b>0.5</b>	NA	<0.5	
		02/08/02	NA	<b>1.2</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/03/04	<5	<b>1.5</b>	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5	
		02/10/05	NA	<0.7	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/22/06	NA	<b>1.2</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/15/07	NA	<b>1.2</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		03/07/08	<50	<b>0.73</b>	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<1.0	
		08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2	
		02/18/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.2	<0.2	NA	<0.2	
		08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		03/08/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20	
		08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20	
	12/18/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<b>1.02</b>	NA	<0.5		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.6	<0.3	<0.2	NA	<0.2		
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	02/23/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-7 (Cont.)	07/29/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<b>0.54</b>	<0.13	<0.093	<0.11	
	08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
MW-8	10/18/94	NA	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5		
	02/23/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	06/16/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	12/11/95	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/08/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	04/29/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/26/96	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
		02/22/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0	
		06/03/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0	
		08/26/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0	
		11/06/97	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		03/12/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		05/15/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		07/13/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		10/26/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		02/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		05/17/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		08/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		11/23/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		02/18/00	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		05/10/00	<20	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5	
		02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		05/24/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		08/02/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		11/12/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/08/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		08/13/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		08/19/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
		08/13/04	<5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5	
		02/10/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/15/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/14/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	03/06/08	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.2	NA	<0.3	<0.2	NA	<0.2		

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-8 (Cont.)	02/18/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2		
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	03/08/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20		
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20		
	12/18/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<0.5	NA	<0.5		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.7	<0.3	<0.2	NA	<0.2		
	08/13/14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	02/23/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
07/29/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
MW-9	02/07/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	04/29/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/26/96	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
	11/19/96	<1.0	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	02/22/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	06/03/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	08/26/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	11/07/97	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	03/12/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/15/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	07/13/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	10/26/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/17/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	11/23/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/18/00	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/10/00	<20	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	05/24/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/02/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	11/12/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<b>0.9</b>	<b>NA</b>	<0.5		
	02/08/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/13/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<b>1</b>	<b>NA</b>	<0.5		
	08/19/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<b>0.6</b>	<b>NA</b>	<0.5		
02/03/04	<5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5			
08/13/04	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5			
02/09/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<b>0.7</b>	<b>NA</b>	<0.5			

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoro-methane	Toluene	Methyl t-butyl Ether	
		µg/L											
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5	
MW-9 (Cont.)	08/15/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	02/15/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	08/20/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
	03/07/08	NA	<0.5	<1.0	<1.0	<10	NA	<1.0	<1.0	NA	<1.0		
	08/21/08	NA	<0.5	<0.5	<0.5	<5	NA	<0.5	<0.5	NA	<0.5		
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<b>0.55J</b>	<b>NA</b>	<0.2		
	02/18/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<b>0.43J</b>	<b>NA</b>	<0.2		
	08/31/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<b>0.21J</b>	<b>NA</b>	<0.2		
	03/08/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20		
	08/22/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20		
	08/06/12	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20		
	02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20		
	12/17/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<0.5	NA	<0.5		
	02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.1	<0.3	<0.2	NA	<0.2		
	08/13/14	<4.6	<0.18	<0.093	<0.062	<0.48	<5.1	<0.099	0.23J	NA	0.13J		
02/23/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
07/29/15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11		
MW-10	02/07/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	04/29/96	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/26/96	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	<b>Construction of Final Landfill Cover</b>												
	11/19/96	<1.0	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	02/22/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	06/03/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	08/26/97	NA	<1.0	<1.0	<1.0	<10	NA	NA	<1.0	NA	<1.0		
	11/07/97	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	03/12/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/15/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	07/13/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	10/26/98	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/17/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	08/25/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	11/23/99	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/18/00	<5	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	05/10/00	<20	<0.5	<0.5	<0.5	<0.5	NA	NA	<0.5	NA	<0.5		
	02/20/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5		
05/24/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5			
08/02/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5			
11/12/01	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5			
02/08/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5			

**Table C-2**  
**Historical Volatile Organic Compounds**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Acetone	Carbon tetrachloride	Chlorobenzene	1,4-Dichlorobenzene	Methylene chloride	bis-(2-ethylhexyl) Phthalate	Dichloro-difluoromethane	Chloroform	Trichlorofluoromethane	Toluene	Methyl t-butyl Ether
		µg/L										
MCL <sup>(1)</sup>		—	0.5	70	5	5	4	—	80	150	150	5
MW-10 (Cont.)	08/13/02	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/13/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/19/03	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/03/04	<5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	NA	<0.5	
	08/13/04	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/09/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/15/05	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/22/06	NA	<b>0.7</b>	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/22/06	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	02/14/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/20/07	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<b>0.5</b>	<b>NA</b>	<0.5	
	03/06/08	NA	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	NA	<0.5	
	08/21/08	NA	<0.5	<0.5	<0.5	<5	NA	<0.5	<0.5	NA	<0.5	
	08/18/09	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2	
	02/18/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<0.2	NA	<0.2	
	08/31/10	<5.0	<0.2	<0.2	<0.2	<0.5	NA	<0.3	<b>0.23J</b>	<b>NA</b>	<0.2	
	03/08/11	<5.0	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20	
	08/22/11	<5.1	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20	
	08/06/12	<b>8.6J</b>	<0.20	<0.20	<0.20	<0.50	NA	<0.30	<0.20	NA	<0.20	
	02/23/12	<5.0	<0.2	<0.2	<0.2	<0.50	NA	<0.30	<0.20	NA	<0.20	
12/19/13	<10	<0.5	<0.5	<0.5	<2.0	NA	<1.5	<0.5	NA	<0.20		
02/27/14	<5.0	<0.2	<0.2	<0.2	<0.5	<5.1	<0.3	<0.2	NA	<0.2		
08/13/14	<4.6	<0.18	<0.093	<0.062	<0.48	<5.1	<0.099	<0.12	NA	0.093		
02/23/15	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
02/23/15 (field duplicate = MW-1000)	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	
07/29/15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
08/04/16	<4.6	<0.18	<0.093	<0.062	<0.48	NS	<0.099	<0.12	<0.13	<0.093	<0.11	

**Notes:**

- µg/L – micrograms per liter
- (1) Maximum contaminant level in drinking water
- (2) Notification level in drinking water
- (3) "<" – Constituents not detected at or above the method detection limit (MDL) cited.
- (4) J – Estimated value only
- (5) Also detected in laboratory blank sample
- (6) NA – not analyzed
- (7) NS – not sampled
- (8) Methylene chloride also detected in trip blank
- (9) Acetone and methylene chloride also detected in field blank
- (10) Sample also contained tetrachloroethylene at a concentration of 0.7 µg/L
- (11) Sample also contained trichlorofluoromethane at a concentration of 0.8 µg/L

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity	
		mg/L												
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—	
MW-1	09/28/90	23	73	<0.1	58	1,440	1.44	NA	59.1	87.7	<5	NA	NA	
	08/02/91	50.4	59.2	0.72	94	1,700	1.44	NA	45.3	104	<3	NA	NA	
	10/28/91	88.6	113	0.89	103	NA	0.51	NA	123	67.2	<3	NA	NA	
	01/13/92	21.9	84.1	0.35	64.8	1,500	1.3	NA	46.2	94.5	<3	NA	NA	
	12/02/93	NA	NA	1.3	NA	1,400	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	96	17	<0.1	72	900	2.4	NA	35	NA	NA	NA	NA	
	06/16/95	<30	12	<0.1	84	1,200	1.8	NA	25	NA	NA	NA	NA	
	08/25/95	<30	42	<2.5	62	1,300	1.2	NA	35	NA	NA	NA	NA	
	12/11/95	59	55	<0.1	83	1,300	0.71	NA	40	NA	NA	NA	NA	
	02/08/96	<30	12	<1	73	1,300	1.6	NA	35	79	1.4	NA	1,300	
	04/29/96	<10	38	3.3	92	1,200	1.9	240	36	66	<1.0	NA	1,000	
	08/26/96	NA	51	NA	NA	1,160	NA	NA	41	NA	NA	NA	NA	
	<i>Construction of Landfill Cover</i>													
		02/25/97	NA	NA	<0.04	64	520	NA	NA	NA	NA	NA	NA	NA
		08/26/97	NA	NA	<0.05	67	960	NA	NA	NA	NA	NA	NA	NA
		03/12/98	NA	NA	<0.5	50	960	NA	NA	NA	NA	NA	NA	NA
		07/13/98	NA	NA	0.2	46	730	NA	NA	NA	NA	NA	NA	NA
		02/25/99	NA	NA	<0.1	65	1,100	NA	NA	NA	NA	NA	NA	NA
		08/25/99	NA	NA	<0.1	51	1,000	NA	NA	NA	NA	NA	NA	NA
		02/18/00	NA	NA	0.1	73	960	NA	NA	NA	NA	NA	NA	NA
		02/20/01	NA	NA	0.9	130	1,000	NA	NA	NA	NA	NA	NA	NA
		08/02/01	NA	NA	<0.5	38	1,000	NA	NA	NA	NA	NA	NA	NA
		02/08/02	NA	NA	<0.4	46	1,200	NA	NA	NA	NA	NA	NA	NA
		02/13/03	NA	NA	<0.4	52	1,100	NA	NA	NA	NA	NA	NA	NA
		02/03/04	NA	NA	<0.4	37	1,200	NA	NA	NA	NA	NA	NA	NA
		02/10/05	NA	NA	<0.4	35	1,000	NA	NA	NA	NA	NA	NA	NA
		02/22/06	NA	NA	<0.1	39	1,100	NA	NA	NA	NA	NA	NA	NA
		02/15/07	NA	NA	<0.1	36	1,200	NA	NA	NA	NA	NA	NA	NA
		03/07/08	NA	NA	0.38	30	1,130	NA	NA	NA	NA	NA	NA	NA
		02/18/10	NA	NA	1.23	40.5	1,150	NA	NA	NA	NA	NA	NA	NA
		08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		03/08/11	NA	NA	0.203	12.8	970	NA	NA	NA	NA	NA	NA	NA
		08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		02/23/12	NA	NA	0.104	30.8	1,150	NA	NA	NA	NA	NA	NA	NA
		12/18/13	NA	NA	<0.02	25	1,180	NA	NA	NA	NA	NA	NA	NA
		02/27/14	NA	NA	0.0863J	25.6	927	NA	NA	NA	NA	NA	NA	NA
		02/24/15	NA	NA	1.2	26.0	1,100	NA	NA	NA	NA	NA	NA	NA
		07/29/15	NA	46	0.022J	24.0	1,000	NA	NA	NA	NA	NA	NA	NA
		08/04/16	NA	41	1.6 A07	30	1,100	NA	NA	NA	NA	NA	NA	NA

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity	
		mg/L												
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—	
MW-2	09/28/90	59.4	51.9	1.4	17.3	587	10.7	NA	24.6	45.3	17.1	NA	NA	
	08/01/91	<20	51	0.42	18.5	510	2.39	NA	23.9	16.8	<3	NA	NA	
	10/28/91	<20	43.5	0.17	16.3	NA	0.46	NA	22.6	15.8	<3	NA	NA	
	01/13/92	108	44.2	0.04	11	500	0.3	NA	24.2	15.9	<3	NA	NA	
	12/02/93	NA	NA	1.3	NA	520	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/27/14	NA	NA	0.0513J	10.4	580	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	09/28/90	60.6	104	2.3	23.3	620	3.36	NA	57.5	58.8	10.8	NA	NA	
	08/01/91	<20	76.1	4.79	22.6	730	0.94	NA	50	47.3	3.9	NA	NA	
	10/28/91	<20	78.9	2.02	27.9	NA	0.14	NA	53.8	44.4	<3	NA	NA	
	01/13/92	34.2	40.7	2.73	14.7	570	0.05	NA	41.4	35.9	<3	NA	NA	
	12/02/93	NA	NA	24	NA	750	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	<30	44	4.5	26	490	0.006	NA	40	NA	NA	NA	NA	
	06/16/95	<30	16	3.8	<5	680	0.32	NA	32	NA	NA	NA	NA	
	08/25/95	<30	78	<2.5	38	740	0.11	NA	41	NA	NA	NA	NA	
	12/11/95	36	100	2.8	33	640	0.021	NA	49	NA	NA	NA	NA	
	02/08/96	<30	37	2	30	520	0.23	NA	29	37	1	NA	480	
	04/29/96	<10	50	4.4	30	500	0.01	82	36	26	<1.0	NA	390	
	<i>Construction of Landfill Cover</i>													
		02/25/97	NA	NA	1.9	21	590	NA	NA	NA	NA	NA	NA	NA
	06/03/97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	08/26/97	NA	NA	<0.05	23	820	NA	NA	NA	NA	NA	NA	NA	
	03/12/98	NA	NA	2.4	28	590	NA	NA	NA	NA	NA	NA	NA	
	07/13/98	NA	NA	3.2	31	660	NA	NA	NA	NA	NA	NA	NA	
	02/25/99	NA	NA	2.9	30	600	NA	NA	NA	NA	NA	NA	NA	
	08/25/99	NA	NA	2.1	28	670	NA	NA	NA	NA	NA	NA	NA	
	02/18/00	NA	NA	2.4	17	400	NA	NA	NA	NA	NA	NA	NA	
	02/18/00	NA	NA	2.9	39	390	NA	NA	NA	NA	NA	NA	NA	
	02/20/01	NA	NA	1.7	11	240	NA	NA	NA	NA	NA	NA	NA	
	08/02/01	NA	NA	2.3	28	620	NA	NA	NA	NA	NA	NA	NA	
	02/08/02	NA	NA	2.1	26	700	NA	NA	NA	NA	NA	NA	NA	
	02/13/03	NA	NA	2.3	27	730	NA	NA	NA	NA	NA	NA	NA	
	02/03/04	NA	NA	1.9	26	680	NA	NA	NA	NA	NA	NA	NA	
	02/10/05	NA	NA	5	28	730	NA	NA	NA	NA	NA	NA	NA	
	02/21/06	NA	NA	3.6	26	620	NA	NA	NA	NA	NA	NA	NA	
	02/14/07	NA	NA	2.1	19	480	NA	NA	NA	NA	NA	NA	NA	
	03/07/08	NA	NA	4.2	25	597	NA	NA	NA	NA	NA	NA	NA	

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity	
		mg/L												
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—	
MW-3 (Cont.)	02/18/10	NA	NA	2.59	17.2	491	NA	NA	NA	NA	NA	NA	NA	
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	03/08/11	NA	NA	2.68	13.7	446	NA	NA	NA	NA	NA	NA	NA	
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/23/12	NA	NA	2.08	20.5	615	NA	NA	NA	NA	NA	NA	NA	
	12/19/13	NA	NA	1.42	22	803	NA	NA	NA	NA	NA	NA	NA	
	02/27/14	NA	NA	4.55	11.8	326	NA	NA	NA	NA	NA	NA	NA	
	02/24/15	NA	NA	2.3	12	480	NA	NA	NA	NA	NA	NA	NA	
	07/29/15	NA	74	2.4	16	550	NA	NA	NA	NA	NA	NA	NA	
	08/04/16	NA	73	3.1	17	700	NA	NA	NA	NA	NA	NA	NA	
MW-4	09/28/90	43.8	56.8	5.4	29	460	8.91	NA	46.1	68.8	21.4	NA	NA	
	08/01/91	58.2	24.9	5.2	22.2	450	0.54	NA	26.9	27.7	<3	NA	NA	
	10/29/91	<20	23.3	1.65	26.5	NA	0.09	NA	27.1	27.3	<3	NA	NA	
	01/14/92	<20	21	4.04	21.5	400	<0.01	NA	25.8	25.7	<3	NA	NA	
	01/14/92	<20	20.5	3.53	21.1	NA	<0.01	NA	26.3	26.2	<3	NA	NA	
	12/02/93	NA	NA	16	NA	690	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	<30	24	5.3	28	380	<0.002	NA	26	NA	NA	NA	NA	
	06/16/95	<30	31	3.8	34	530	0.48	NA	19	NA	NA	NA	NA	
	08/25/95	<30	44	<2.5	44	660	0.68	NA	28	NA	NA	NA	NA	
	08/25/95	<30	52	<2.5	48	680	0.67	NA	27	NA	NA	NA	NA	
	12/11/95	27	42	0.3	31	580	0.077	NA	29	NA	NA	NA	NA	
	02/08/96	<30	30	<1.0	36	540	0.34	NA	25	41	1.4	NA	470	
	04/29/96	<10	43	7.6	35	530	0.038	100	31	32	<1.0	NA	490	
	08/26/96	NA	NA	NA	NA	620	NA	NA	35	NA	NA	NA	NA	
	<i>Construction of Landfill Cover</i>													
	02/25/97	NA	NA	4.9	27	540	NA	NA	NA	NA	NA	NA	NA	NA
	08/26/97	NA	NA	4.1	10	480	NA	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	4.3	25	450	NA	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	3.4	32	560	NA	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	3.5	34	610	NA	NA	NA	NA	NA	NA	NA	NA
08/25/99	NA	NA	3.1	37	750	NA	NA	NA	NA	NA	NA	NA	NA	
08/25/99	NA	NA	3.1	37	740	NA	NA	NA	NA	NA	NA	NA	NA	
02/18/00	NA	NA	3.6	38	670	NA	NA	NA	NA	NA	NA	NA	NA	
02/20/01	NA	NA	3.8	24	450	NA	NA	NA	NA	NA	NA	NA	NA	
08/02/01	NA	NA	2.6	35	730	NA	NA	NA	NA	NA	NA	NA	NA	
02/08/02	NA	NA	3.1	36	660	NA	NA	NA	NA	NA	NA	NA	NA	
02/13/03	NA	NA	3.8	29	520	NA	NA	NA	NA	NA	NA	NA	NA	
02/03/04	NA	NA	4.3	24	470	NA	NA	NA	NA	NA	NA	NA	NA	
02/03/04	NA	NA	4.3	24	420	NA	NA	NA	NA	NA	NA	NA	NA	

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity	
		mg/L												
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—	
MW-4 (Cont.)	02/10/05	NA	NA	4.8	22	310	NA	NA	NA	NA	NA	NA	NA	
	02/22/06	NA	NA	3.5	35	590	NA	NA	NA	NA	NA	NA	NA	
	02/22/06	NA	NA	3.6	34	600	NA	NA	NA	NA	NA	NA	NA	
	02/15/07	NA	NA	3.2	31	550	NA	NA	NA	NA	NA	NA	NA	
	03/07/08	NA	NA	4.6	26	438	NA	NA	NA	NA	NA	NA	NA	
	03/07/08	NA	NA	4.7	25	446	NA	NA	NA	NA	NA	NA	NA	
	02/18/10	NA	NA	3.95	23.5	421	NA	NA	NA	NA	NA	NA	NA	
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	03/08/11	NA	NA	3.70	26.3	466	NA	NA	NA	NA	NA	NA	NA	
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/23/12	NA	NA	3.82	27.5	477	NA	NA	NA	NA	NA	NA	NA	
	12/19/13	NA	NA	3.01	25.5	507	NA	NA	NA	NA	NA	NA	NA	
	02/27/14	NA	NA	4.55	26	437	NA	NA	NA	NA	NA	NA	NA	
	02/24/15	NA	NA	3.70	22	430	NA	NA	NA	NA	NA	NA	NA	
07/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
08/04/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
MW-5	09/28/90	36.2	501	3.4	60.7	1,240	6.18	NA	226	86.9	29.4	NA	NA	
	09/28/90	NA	503	NA	61.6	1,290	5.83	NA	220	81.7	27.2	NA	NA	
	08/01/91	21.6	476	4.22	44.9	1,200	0.26	NA	193	51.2	3.5	NA	NA	
	10/29/91	<20	210	1.67	47.2	NA	0.02	NA	144	39.8	<3	NA	NA	
	01/14/92	43.5	466	2.99	34.8	1,100	0.03	NA	195	45.4	3.9	NA	NA	
	12/02/93	NA	NA	19	NA	1,200	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	<30	266	5.2	81	860	0.04	NA	200	NA	NA	NA	NA	
	02/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/27/14	NA	NA	7.13	77.8	960	NA	NA	NA	NA	NA	NA	NA	
MW-6	10/19/94	NA	NA	27	NA	600	NA	NA	NA	NA	NA	NA	NA	
	02/23/95	<30	26	5.2	42	450	0.03	NA	40	NA	NA	NA	NA	
	06/16/95	<30	23	4.4	27	460	0.08	NA	19	NA	NA	NA	NA	
	08/25/95	<30	32	<2.5	32	470	0.43	NA	23	NA	NA	NA	NA	
	12/11/95	25	15	4.9	27	470	0.11	NA	23	NA	NA	NA	NA	
	02/08/96	<30	24	4	32	470	0.31	NA	18	33	<1	NA	480	
	02/08/96	<30	25	4	31	450	0.36	NA	16	43	<1	NA	480	
	04/29/96	37	28	7.8	33	500	0.008	92	27	31	<1	NA	430	
	04/29/96	20	31	12	22	510	0.86	120	26	34	1.9	NA	440	
	08/26/96	NA	38	NA	NA	510	NA	NA	28	NA	NA	NA	NA	
	<i>Construction of Landfill Cover</i>													
	02/25/97	NA	NA	4.4	26	520	NA	NA	NA	NA	NA	NA	NA	NA
	02/22/97	NA	NA	4.8	26	410	NA	NA	NA	NA	NA	NA	NA	NA
	08/26/97	NA	NA	3.3	25	460	NA	NA	NA	NA	NA	NA	NA	NA

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity
		mg/L											
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—
<b>MW-6</b> (Cont.)	08/26/97	NA	NA	3.3	25	510	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	4.3	26	490	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	4.3	26	500	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	4.5	30	490	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	4.1	27	490	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	4.3	27	410	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	4.3	27	440	NA	NA	NA	NA	NA	NA	NA
	08/25/99	NA	NA	3.6	24	460	NA	NA	NA	NA	NA	NA	NA
	02/18/00	NA	NA	4	27	450	NA	NA	NA	NA	NA	NA	NA
	02/20/01	NA	NA	3.8	35	550	NA	NA	NA	NA	NA	NA	NA
	08/02/01	NA	NA	3.1	29	560	NA	NA	NA	NA	NA	NA	NA
	02/08/02	NA	NA	3.4	26	490	NA	NA	NA	NA	NA	NA	NA
	02/13/03	NA	NA	4.4	25	430	NA	NA	NA	NA	NA	NA	NA
	02/03/04	NA	NA	5	22	410	NA	NA	NA	NA	NA	NA	NA
	02/10/05	NA	NA	4.4	23	390	NA	NA	NA	NA	NA	NA	NA
	02/22/06	NA	NA	3.9	24	450	NA	NA	NA	NA	NA	NA	NA
	02/15/07	NA	NA	3.5	24	430	NA	NA	NA	NA	NA	NA	NA
	03/07/08	NA	NA	4.5	27	416	NA	NA	NA	NA	NA	NA	NA
	02/18/10	NA	NA	4.09	23.1	392	NA	NA	NA	NA	NA	NA	NA
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/08/11	NA	NA	3.82	25.7	429	NA	NA	NA	NA	NA	NA	NA
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/23/12	NA	NA	4.11	24.7	419	NA	NA	NA	NA	NA	NA	NA
	12/17/13	NA	NA	3.23	24.9	443	NA	NA	NA	NA	NA	NA	NA
	02/27/14	NA	NA	4.43	25.8	395	NA	NA	NA	NA	NA	NA	NA
	02/23/15	NA	NA	5.1	23	420	NA	NA	NA	NA	NA	NA	NA
	07/29/15	NA	24	4.7	23	470	NA	NA	NA	NA	NA	NA	NA
	07/29/15 (duplicate)	NA	24	4.5	23	480	NA	NA	NA	NA	NA	NA	NA
08/04/16	NA	23	3.9	25	390	NA	NA	NA	NA	NA	NA	NA	
08/04/16 (duplicate)	NA	23	4.0	25	400	NA	NA	NA	NA	NA	NA	NA	
<b>MW-7</b>	10/18/94	NA	NA	18	NA	380	NA	NA	NA	NA	NA	NA	NA
	02/23/95	<30	9	1	<5	130	0.02	NA	7.6	NA	NA	NA	NA
	06/16/95	<30	14	3.1	20	330	3.9	NA	12	NA	NA	NA	NA
	08/25/95	<30	17	<2.5	39	400	0.46	NA	16	NA	NA	NA	NA
	12/11/95	14	15	3.5	21	330	0.06	NA	14	NA	NA	NA	NA
	02/08/96	<30	16	2.3	20	200	1.3	NA	9.6	24	1.4	NA	210
	04/29/96	12	17	14	8.6	360	0.008	59	18	23	<1	NA	290

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity
		mg/L											
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—
MW-7 (Cont.)	08/26/96	NA	5.9	NA	NA	180	NA	NA	8.4	NA	NA	NA	NA
	<i>Construction of Landfill Cover</i>												
	02/25/97	NA	NA	5.6	15	330	NA	NA	NA	NA	NA	NA	NA
	08/26/97	NA	NA	2.6	31	270	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	6.6	22	340	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	6.7	22	350	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	5.1	20	280	NA	NA	NA	NA	NA	NA	NA
	08/25/99	NA	NA	3.9	17	300	NA	NA	NA	NA	NA	NA	NA
	02/18/00	NA	NA	3.1	16	240	NA	NA	NA	NA	NA	NA	NA
	02/20/01	NA	NA	0.6	7	120	NA	NA	NA	NA	NA	NA	NA
	08/02/01	NA	NA	3.8	18	350	NA	NA	NA	NA	NA	NA	NA
	02/08/02	NA	NA	2.9	16	290	NA	NA	NA	NA	NA	NA	NA
	02/13/03	NA	NA	1.3	15	180	NA	NA	NA	NA	NA	NA	NA
	02/03/04	NA	NA	3.6	18	330	NA	NA	NA	NA	NA	NA	NA
	02/10/05	NA	NA	3.3	16	310	NA	NA	NA	NA	NA	NA	NA
	02/22/06	NA	NA	3.9	18	320	NA	NA	NA	NA	NA	NA	NA
	02/15/07	NA	NA	2.7	15	290	NA	NA	NA	NA	NA	NA	NA
	03/07/08	NA	NA	3.0	20	272	NA	NA	NA	NA	NA	NA	NA
	02/18/10	NA	NA	0.8	8.17	170	NA	NA	NA	NA	NA	NA	NA
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/08/11	NA	NA	0.694	7.64	157	NA	NA	NA	NA	NA	NA	NA
	08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/23/12	NA	NA	1.12	8.75	145	NA	NA	NA	NA	NA	NA	NA
12/18/13	NA	NA	1.72	16.10	264	NA	NA	NA	NA	NA	NA	NA	
02/27/14	NA	NA	1.83	9.64	180	NA	NA	NA	NA	NA	NA	NA	
02/23/15	NA	NA	1.5	7.4	160	NA	NA	NA	NA	NA	NA	NA	
07/29/15	NA	12	2.1	12	210	NA	NA	NA	NA	NA	NA	NA	
08/04/16	NA	7.5	1.6	7	180	NA	NA	NA	NA	NA	NA	NA	
MW-8	10/18/94	NA	NA	1.8	NA	600	NA	NA	NA	NA	NA	NA	NA
	02/23/95	<30	57	3.7	44	400	0.003	NA	33	NA	NA	NA	NA
	06/16/95	<30	44	0.5	<5	460	0.07	NA	17	NA	NA	NA	NA
	08/25/95	<30	60	<2.5	<5	610	0.04	NA	30	NA	NA	NA	NA
	12/11/95	27	50	0.6	4.6	550	0.053	NA	27	NA	NA	NA	NA
	02/08/96	<30	46	<1.0	<2.5	540	0.26	NA	17	17	<1.0	NA	560
	04/29/96	<10	71	3.3	<2.5	530	0.015	110	28	13	<1.0	NA	440
	08/26/96	NA	60	NA	NA	550	NA	NA	27	NA	NA	NA	NA
	<i>Construction of Landfill Cover</i>												
	02/25/97	NA	NA	1	22	430	NA	NA	NA	NA	NA	NA	NA
06/03/97	NA	NA	0.64	18	620	NA	NA	NA	NA	NA	NA	NA	

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity
		mg/L											
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—
MW-8 (Cont.)	08/26/97	NA	NA	0.08	7	390	NA	NA	NA	NA	NA	NA	NA
	11/06/97	NA	NA	<0.5	9.4	600	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	<0.5	30	510	NA	NA	NA	NA	NA	NA	NA
	05/15/98	NA	NA	0.4	16	370	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	0.9	73	670	NA	NA	NA	NA	NA	NA	NA
	10/26/98	NA	NA	0.4	4	460	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	0.4	7	470	NA	NA	NA	NA	NA	NA	NA
	05/17/99	NA	NA	0.6	16	490	NA	NA	NA	NA	NA	NA	NA
	08/25/99	NA	NA	<0.1	11	510	NA	NA	NA	NA	NA	NA	NA
	11/23/99	NA	NA	<0.1	8.4	540	NA	NA	NA	NA	NA	NA	NA
	02/18/00	NA	NA	0.1	9.2	480	NA	NA	NA	NA	NA	NA	NA
	05/10/00	NA	NA	0.2	13	500	NA	NA	NA	NA	NA	NA	NA
	02/20/01	NA	NA	0.6	15	450	NA	NA	NA	NA	NA	NA	NA
	05/24/01	NA	NA	<0.2	12	520	NA	NA	NA	NA	NA	NA	NA
	08/02/01	NA	NA	<0.5	9.2	510	NA	NA	NA	NA	NA	NA	NA
	11/12/01	NA	NA	<0.4	5.7	500	NA	NA	NA	NA	NA	NA	NA
	02/08/02	NA	NA	<0.4	7.7	470	NA	NA	NA	NA	NA	NA	NA
	08/13/02	NA	NA	<0.4	6.9	450	NA	NA	NA	NA	NA	NA	NA
	02/13/03	NA	NA	<0.4	6.7	420	NA	NA	NA	NA	NA	NA	NA
	08/19/03	NA	NA	<0.4	8.3	470	NA	NA	NA	NA	NA	NA	NA
	08/13/04	NA	NA	<0.4	10	490	NA	NA	NA	NA	NA	NA	NA
	02/10/05	NA	NA	1.1	11	150	NA	NA	NA	NA	NA	NA	NA
	08/15/05	NA	NA	0.9	11	380	NA	NA	NA	NA	NA	NA	NA
	02/21/06	NA	NA	0.2	12	450	NA	NA	NA	NA	NA	NA	NA
	08/22/06	NA	NA	<0.1	11	470	NA	NA	NA	NA	NA	NA	NA
	02/14/07	NA	NA	<0.1	9.2	500	NA	NA	NA	NA	NA	NA	NA
	03/06/08	NA	NA	0.7	12	490	NA	NA	NA	NA	NA	NA	NA
	02/18/10	NA	NA	0.653	15.4	504	NA	NA	NA	NA	NA	NA	NA
	08/31/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/08/11	NA	NA	1.36	15.0	450	NA	NA	NA	NA	NA	NA	NA
08/22/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
02/23/12	NA	NA	0.0708J	8.92	600	NA	NA	NA	NA	NA	NA	NA	
12/18/13	NA	NA	0.132J	10.7	650	NA	NA	NA	NA	NA	NA	NA	
02/27/14	NA	NA	0.851J	10.1	554	NA	NA	NA	NA	NA	NA	NA	
02/24/15	NA	NA	0.16	8.1	660	NA	NA	NA	NA	NA	NA	NA	
07/29/15	NA	47	1.2	11	560	NA	NA	NA	NA	NA	NA	NA	
08/04/16	NA	53	2.5	12	530	NA	NA	NA	NA	NA	NA	NA	
MW-9	02/07/96	<30	18	4.7	31	560	1.1	NA	23	35	2.7	NA	520
	04/29/96	<10	34	12	63	560	0.01	100	28	37	<1.0	NA	470

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity
		mg/L											
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—
MW-9 (Cont.)	08/26/96	NA	25	NA	NA	580	NA	NA	23	NA	NA	NA	NA
	<i>Construction of Landfill Cover</i>												
	11/19/96	NA	32	NA	NA	620	NA	NA	25	NA	NA	NA	NA
	02/25/97	NA	NA	4.6	39	560	NA	NA	NA	NA	NA	NA	NA
	06/03/97	NA	NA	NA	34	540	NA	NA	NA	NA	NA	NA	NA
	08/26/97	NA	NA	5.4	33	450	NA	NA	NA	NA	NA	NA	NA
	11/07/97	NA	NA	5.8	35	570	NA	NA	NA	NA	NA	NA	NA
	03/12/98	NA	NA	2.5	28	480	NA	NA	NA	NA	NA	NA	NA
	05/15/98	NA	NA	4.2	35	430	NA	NA	NA	NA	NA	NA	NA
	07/13/98	NA	NA	8.4	34	530	NA	NA	NA	NA	NA	NA	NA
	10/26/98	NA	NA	7.3	34	510	NA	NA	NA	NA	NA	NA	NA
	02/25/99	NA	NA	6.3	34	510	NA	NA	NA	NA	NA	NA	NA
	05/17/99	NA	NA	8.1	33	490	NA	NA	NA	NA	NA	NA	NA
	05/17/99	NA	NA	7.9	33	460	NA	NA	NA	NA	NA	NA	NA
	08/25/99	NA	NA	6.1	30	540	NA	NA	NA	NA	NA	NA	NA
	11/23/99	NA	NA	4.7	33	500	NA	NA	NA	NA	NA	NA	NA
	11/23/99	NA	NA	4.7	33	480	NA	NA	NA	NA	NA	NA	NA
	02/18/00	NA	NA	5.3	34	500	NA	NA	NA	NA	NA	NA	NA
	05/10/00	NA	NA	4.6	34	530	NA	NA	NA	NA	NA	NA	NA
	05/10/00	NA	NA	4.5	34	530	NA	NA	NA	NA	NA	NA	NA
	02/20/01	NA	NA	5.2	33	520	NA	NA	NA	NA	NA	NA	NA
	05/24/01	NA	NA	7.5	30	520	NA	NA	NA	NA	NA	NA	NA
	08/02/01	NA	NA	5	29	570	NA	NA	NA	NA	NA	NA	NA
	08/02/01	NA	NA	5.6	30	540	NA	NA	NA	NA	NA	NA	NA
	11/12/01	NA	NA	5.2	32	520	NA	NA	NA	NA	NA	NA	NA
	02/08/02	NA	NA	5.5	31	540	NA	NA	NA	NA	NA	NA	NA
	08/13/02	NA	NA	5.2	32	570	NA	NA	NA	NA	NA	NA	NA
	02/13/03	NA	NA	3.5	32	480	NA	NA	NA	NA	NA	NA	NA
	08/13/03	NA	NA	6.0	36	600	NA	NA	NA	NA	NA	NA	NA
	02/03/04	NA	NA	4.7	33	550	NA	NA	NA	NA	NA	NA	NA
	08/13/04	NA	NA	5.1	34	570	NA	NA	NA	NA	NA	NA	NA
	08/13/04	NA	NA	5.1	34	560	NA	NA	NA	NA	NA	NA	NA
	02/09/05	NA	NA	3.0	34	510	NA	NA	NA	NA	NA	NA	NA
08/15/05	NA	NA	7.4	26	500	NA	NA	NA	NA	NA	NA	NA	
02/21/06	NA	NA	6.5	32	540	NA	NA	NA	NA	NA	NA	NA	
08/22/06	NA	NA	6.2	31	510	NA	NA	NA	NA	NA	NA	NA	
08/22/06	NA	NA	6.2	31	520	NA	NA	NA	NA	NA	NA	NA	
02/15/07	NA	NA	4.8	30	510	NA	NA	NA	NA	NA	NA	NA	
08/20/07	NA	NA	4.1	31	540	NA	NA	NA	NA	NA	NA	NA	
03/07/08	NA	NA	3.1	37	537	NA	NA	NA	NA	NA	NA	NA	
08/21/08	NA	NA	5.4	33	560	NA	NA	NA	NA	NA	NA	NA	

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity	
		mg/L												
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—	
MW-9 (Cont.)	08/18/09	NA	NA	3.1	32	575	NA	NA	NA	NA	NA	<0.005	NA	
	02/18/10	NA	NA	2.3	34	545	NA	NA	NA	NA	NA	NA	NA	
	08/31/10	NA	NA	5.0	31	522	NA	NA	NA	NA	NA	NA	NA	
	03/08/11	NA	NA	3.87	31.6	504	NA	NA	NA	NA	NA	NA	NA	
	08/22/11	NA	NA	6.05	31.1	509	NA	NA	NA	NA	NA	NA	NA	
	02/23/12	NA	NA	4.48	31.3	482	NA	NA	NA	NA	NA	NA	NA	
	08/06/12	NA	NA	4.71	31.4	490	NA	NA	NA	NA	NA	NA	NA	
	12/17/13	NA	NA	1.58	31.5	590	NA	NA	NA	NA	NA	NA	NA	
	02/27/14	NA	NA	1.71	32.8	508	NA	NA	NA	NA	NA	NA	NA	
	08/13/14	NA	NA	2.0	30	560	NA	NA	NA	NA	NA	NA	NA	
	02/23/15	NA	NA	1.7	32	600	NA	NA	NA	NA	NA	NA	NA	
	07/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
08/04/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
MW-10	02/07/96	<30	32	7.9	58	680	1	NA	32	43	4.3	NA	630	
	04/29/96	26	49	13	60	370	0.98	130	42	42	1.9	NA	530	
	08/26/96	NA	59	NA	NA	630	NA	NA	41	NA	NA	NA	NA	
	<i>Construction of Landfill Cover</i>													
	11/19/96	NA	61	NA	NA	730	NA	NA	41	NA	NA	NA	NA	
	11/19/96	NA	59	NA	NA	660	NA	NA	44	NA	NA	NA	NA	
	02/25/97	NA	NA	7.6	42	720	NA	NA	NA	NA	NA	NA	NA	
	06/03/97	NA	NA	10	40	700	NA	NA	NA	NA	NA	NA	NA	
	06/03/97	NA	NA	9.2	39	670	NA	NA	NA	NA	NA	NA	NA	
	08/26/97	NA	NA	6.9	41	660	NA	NA	NA	NA	NA	NA	NA	
	11/07/97	NA	NA	7.6	42	660	NA	NA	NA	NA	NA	NA	NA	
	03/12/98	NA	NA	6.2	42	660	NA	NA	NA	NA	NA	NA	NA	
	05/15/98	NA	NA	6.9	39	540	NA	NA	NA	NA	NA	NA	NA	
	07/13/98	NA	NA	10	49	660	NA	NA	NA	NA	NA	NA	NA	
	10/26/98	NA	NA	6.2	44	600	NA	NA	NA	NA	NA	NA	NA	
	02/25/99	NA	NA	4.7	40	580	NA	NA	NA	NA	NA	NA	NA	
	05/17/99	NA	NA	4.2	41	620	NA	NA	NA	NA	NA	NA	NA	
	08/25/99	NA	NA	3.3	35	590	NA	NA	NA	NA	NA	NA	NA	
	11/23/99	NA	NA	2.7	40	590	NA	NA	NA	NA	NA	NA	NA	
	02/18/00	NA	NA	2.9	39	570	NA	NA	NA	NA	NA	NA	NA	
	05/10/00	NA	NA	6.4	36	580	NA	NA	NA	NA	NA	NA	NA	
	02/20/01	NA	NA	4.0	35	590	NA	NA	NA	NA	NA	NA	NA	
	02/20/01	NA	NA	4.0	35	570	NA	NA	NA	NA	NA	NA	NA	
	05/24/01	NA	NA	6.4	35	610	NA	NA	NA	NA	NA	NA	NA	
	05/24/01	NA	NA	6.4	35	600	NA	NA	NA	NA	NA	NA	NA	
	08/02/01	NA	NA	4.1	33	600	NA	NA	NA	NA	NA	NA	NA	
	11/12/01	NA	NA	3.1	30	530	NA	NA	NA	NA	NA	NA	NA	
	11/12/01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

**Table C-3**  
**Historical General Chemistry Parameters**  
**September 1990 - Present**  
Sutter Avenue Landfill, Camp San Luis Obispo, California

Well ID	Sample Date	Chemical Oxygen Demand	Chloride	Nitrate as N	Sulfate	Total Dissolved Solids	Manganese	Magnesium	Sodium	Calcium	Potassium	Perchlorate	Bicarbonate Alkalinity
		mg/L											
MCL:		—	250	10	250	500	50	—	—	—	—	6.0	—
MW-10 (Cont.)	02/08/02	NA	NA	2.9	31	600	NA	NA	NA	NA	NA	NA	NA
	08/13/02	NA	NA	2.9	31	620	NA	NA	NA	NA	NA	NA	NA
	02/13/03	NA	NA	3.5	32	550	NA	NA	NA	NA	NA	NA	NA
	08/19/03	NA	NA	4.0	34	580	NA	NA	NA	NA	NA	NA	NA
	02/03/04	NA	NA	3.0	31	530	NA	NA	NA	NA	NA	NA	NA
	08/13/04	NA	NA	3.8	31	550	NA	NA	NA	NA	NA	NA	NA
	02/09/05	NA	NA	11	31	560	NA	NA	NA	NA	NA	NA	NA
	08/15/05	NA	NA	6.7	29	550	NA	NA	NA	NA	NA	NA	NA
	02/21/06	NA	NA	5.2	31	540	NA	NA	NA	NA	NA	NA	NA
	08/22/06	NA	NA	5.2	31	530	NA	NA	NA	NA	NA	NA	NA
	02/14/07	NA	NA	4.0	30	520	NA	NA	NA	NA	NA	NA	NA
	08/20/07	NA	NA	2.9	30	510	NA	NA	NA	NA	NA	NA	NA
	03/06/08	NA	NA	4.0	32	530	NA	NA	NA	NA	NA	NA	NA
	08/21/08	NA	NA	4.2	32	540	NA	NA	NA	NA	NA	NA	NA
	08/18/09	NA	NA	2.2	34	600	NA	NA	NA	NA	NA	NA	<0.005
	02/18/10	NA	NA	2.0	35	568	NA	NA	NA	NA	NA	NA	NA
	08/31/10	NA	NA	5.0	33	564	NA	NA	NA	NA	NA	NA	NA
	03/08/11	NA	NA	10.4	35.0	602	NA	NA	NA	NA	NA	NA	NA
	08/22/11	NA	NA	7.8	35	584	NA	NA	NA	NA	NA	NA	NA
	02/23/12	NA	NA	5.4	32.9	510	NA	NA	NA	NA	NA	NA	NA
	08/06/12	NA	NA	4.2	33.4	524	NA	NA	NA	NA	NA	NA	NA
	12/19/13	NA	NA	0.819	33.8	673	NA	NA	NA	NA	NA	NA	NA
	02/27/14	NA	NA	1.64	35.2	541	NA	NA	NA	NA	NA	NA	NA
08/13/14	NA	NA	1.6	30	580	NA	NA	NA	NA	NA	NA	NA	
02/23/15	NA	NA	1.3	32	600	NA	NA	NA	NA	NA	NA	NA	
02/23/15 (field duplicate = MW-1000)	NA	NA	1.3	32	610	NA	NA	NA	NA	NA	NA	NA	
07/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
08/04/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

**Notes:**  
mg/L – milligrams per liter  
"<" – constituent is not detected at or above the method detection limit cited.  
NA – not analyzed  
A07 - Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
MW-1	08/02/91	7.70	1,955	21.9	NA	NA	
	10/28/91	7.44	2,350	21.8	NA	NA	
	01/13/92	6.61	3,380	18.8	NA	NA	
	12/02/93	7.14	1,940	21.5	NA	NA	
	10/20/94	7.00	2,190	23.3	NA	NA	
	12/12/94	7.00	1,480	23.9	NA	NA	
	01/05/95	7.00	1,580	24.8	NA	NA	
	02/23/95	7.04	1,565	19.9	NA	NA	
	06/16/95	6.30	1,362	21.7	NA	NA	
	08/25/95	6.90	1,982	20.7	NA	NA	
	12/11/95	7.00	1,900	24.5	NA	NA	
	02/08/96	7.30	2,100	30.4	NA	NA	
	08/26/96	7.06	3,000	19.04	NA	NA	
	<b>Construction of Landfill Cover</b>						
		11/19/96	NA	NA	NA	NA	NA
		02/27/97	6.99	2,270	19.9	3.3	NA
		06/03/97	NA	NA	NA	NA	NA
		08/26/97	6.98	1,970	20.1	NA	NA
		03/12/98	7.08	1,559	19.8	3	NA
		07/13/98	7.56	1,603	25.8	1.5	NA
		02/25/99	6.90	1,759	19.9	1.3	NA
		08/25/99	7.11	1,917	22.1	0.6	NA
		02/18/00	7.31	2,320	20.0	8.5	NA
		02/20/01	7.31	1,950	18.2	NA	NA
		08/02/01	6.98	1,450	23.4	NA	NA
		02/08/02	7.09	1,710	20.3	NA	NA
		02/13/03	7.00	1,260	19.2	15	NA
		02/03/04	7.76	1,620	14.4	1.24	NA
		02/10/05	6.80	2,100	20.4	2	NA
		02/22/06	6.82	3,140	21.3	31	NA
		02/15/07	6.85	2,200	20.5	6	NA
		03/07/08	6.87	1,840	21.4	0	NA
		02/18/10	6.85	1,970	16.7	32	NA
	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	6.82	1,910	18.6	28	NA	
	08/22/11	NA	NA	NA	NA	NA	
	02/23/12	7.91	2,040	20.51	3	NA	
	12/17/13	7.46	1,895	18.06	3	NA	
	02/27/14	6.70	0	19.55	281	NA	
	02/24/15	6.76	1,903	18.7	1.0	0.37	
	07/29/15	6.69	1,849	19.5	0.64	0.35	
	08/04/16	6.73	1,921	20.8	1.65	0.60	
MW-2	08/01/91	8.06	710	22.7	NA	NA	
	10/28/91	7.65	923	16.5	NA	NA	
	01/13/92	7.21	1,179	16.2	NA	NA	
	12/02/93	7.35	780	16.8	NA	NA	
	10/20/94	7.50	840	18.1	NA	NA	
	02/23/95	7.56	795	17.3	NA	NA	
	02/18/10	NA	NA	NA	NA	NA	

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
<b>MW-2</b> (Cont.)	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	NA	NA	NA	NA	NA	
	08/22/11	NA	NA	NA	NA	NA	
	02/27/14	6.76	0.003	18.6	250.0	NA	
<b>MW-3</b>	08/01/91	7.89	1,025	26.2	NA	NA	
	10/28/91	7.40	1,467	20.2	NA	NA	
	01/13/92	7.13	1,356	17.3	NA	NA	
	12/02/93	6.83	1,030	18.1	NA	NA	
	10/20/94	7.20	1,120	23.0	NA	NA	
	02/23/95	7.34	833	17.2	NA	NA	
	06/16/95	6.40	942	19.8	NA	NA	
	08/25/95	7.50	986	19.7	NA	NA	
	12/11/95	7.10	1,000	26.2	NA	NA	
	02/08/96	7.40	960	24.1	NA	NA	
	04/29/96	7.40	851	19.4	NA	NA	
	08/26/96	NA	NA	NA	NA	NA	
	<i>Construction of Landfill Cover</i>						NA
	11/19/96	NA	NA	NA	NA	NA	NA
	02/26/97	7.35	931	16.5	NA	NA	
	06/03/97	NA	NA	NA	NA	NA	
	08/26/97	7.30	1,200	17.0	NA	NA	
	03/12/98	7.17	981	18.3	39	NA	
	07/13/98	7.47	1,246	20.4	26.3	NA	
	02/25/99	7.39	1,223	18.5	10.7	NA	
	08/25/99	7.50	1,122	18.1	4.5	NA	
	02/18/00	7.43	979	17.3	10.6	NA	
	02/20/01	8.21	520	17.0	NA	NA	
	08/02/01	7.24	950	23.6	NA	NA	
	02/08/02	7.42	1,030	17.4	NA	NA	
	02/08/03	7.42	950	17.9	90	NA	
	02/03/04	7.23	1,000	18.3	34.2	NA	
	02/10/05	7.00	1,300	18.3	49	NA	
	02/21/06	7.08	1,370	18.6	110	NA	
	02/14/07	6.92	1,200	20.1	3.1	NA	
	03/07/08	7.09	1,040	17.7	0	NA	
	02/18/10	7.16	738	15.1	39	NA	
	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	7.48	708	15.9	16	NA	
	08/22/11	NA	NA	NA	NA	NA	
	02/23/12	7.93	1,070	17.9	7.2	NA	
	12/19/13	7.35	1,254	17.6	2.8	NA	
	02/27/14	6.84	0.001	20.6	273	NA	
	02/24/15	6.91	713	17.2	1.8	3.94	
	07/29/15	6.82	922	18.2	1.13	0.62	
08/04/16	6.87	1,166	19.5	2.48	2.86		
<b>MW-4</b>	08/03/91	8.12	634	21.3	NA	NA	
	10/29/91	7.64	959	21.9	NA	NA	
	01/14/91	7.29	1,023	16.5	NA	NA	
	12/02/93	6.15	1,020	19.5	NA	NA	

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
MW-4 (Cont.)	10/20/94	7.40	990	18.5	NA	NA	
	12/12/94	7.50	910	22.3	NA	NA	
	01/05/95	7.60	880	22.5	NA	NA	
	02/23/95	7.58	659	18.1	NA	NA	
	06/16/95	6.40	810	22.2	NA	NA	
	08/25/95	7.30	989	20.2	NA	NA	
	12/11/95	7.30	860	24.9	NA	NA	
	02/08/96	7.60	960	22.4	NA	NA	
	04/29/96	7.60	1,390	23.9	NA	NA	
	08/26/96	7.31	1,226	20.2	NA	NA	
	<i>Construction of Landfill Cover</i>						NA
	11/19/96	NA	NA	NA	NA	NA	NA
	02/27/97	7.40	822	18.5	NA	NA	NA
	06/03/97	NA	NA	NA	NA	NA	NA
	08/26/97	7.50	1,400	19.0	NA	NA	NA
	03/12/98	7.47	777	19.8	43	NA	NA
	07/13/98	7.18	1,062	21.7	5.3	NA	NA
	02/25/99	7.44	1,187	20.6	2.8	NA	NA
	08/25/99	7.40	1,404	19.7	0.7	NA	NA
	02/18/00	7.70	1,790	19.8	14.6	NA	NA
	02/20/01	7.99	740	18.4	NA	NA	NA
	08/02/01	7.40	1,110	24.6	NA	NA	NA
	02/08/02	7.69	1,010	17.9	NA	NA	NA
	02/13/03	7.39	730	19.4	10	NA	NA
	02/03/04	7.65	660	18.7	7.47	NA	NA
	02/10/05	7.20	780	20.7	28	NA	NA
	02/22/06	7.24	1,430	20.1	0	NA	NA
	02/15/07	7.12	1,200	20.6	3	NA	NA
	03/07/08	7.34	665	20.0	0	NA	NA
	02/18/10	7.48	623	17.1	41	NA	NA
	08/31/10	NA	NA	NA	NA	NA	NA
	03/08/11	7.58	720	18.2	20	NA	NA
	08/22/11	NA	NA	NA	NA	NA	NA
02/23/12	7.90	846	20	3.7	NA	NA	
12/19/13	7.52	795	19.04	0.2	NA	NA	
02/27/14	6.80	0.03	19.888	280	NA	NA	
02/24/15	7.07	665	18.3	2.4	3.27	NA	
07/29/15	NA	NA	NA	NA	NA	NA	
08/04/16	NA	NA	NA	NA	NA	NA	
MW-5	08/02/91	7.60	1,651	21.4	NA	NA	
	10/29/91	7.60	1,567	17.9	NA	NA	
	01/14/91	7.05	2,560	16.9	NA	NA	
	12/02/93	7.15	1,740	18.0	NA	NA	
	10/20/94	7.20	1,600	18.2	NA	NA	
	02/23/95	7.33	1,275	16.9	NA	NA	
	02/18/10	NA	NA	NA	NA	NA	
	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	NA	NA	NA	NA	NA	

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
<b>MW-5</b> (Cont.)	08/22/11	NA	NA	NA	NA	NA	
	02/27/14	6.68	0.016	19.2	319	NA	
<b>MW-6</b>	10/18/94	7.10	1,100	18.2	NA	NA	
	12/12/94	7.40	730	24.8	NA	NA	
	01/05/95	7.30	680	24.6	NA	NA	
	02/23/95	7.52	695	17.9	NA	NA	
	06/16/95	6.20	798	22.4	NA	NA	
	08/25/95	7.30	860	19.8	NA	NA	
	12/11/95	7.30	500	25.0	NA	NA	
	02/08/96	7.90	860	20.3	NA	NA	
	04/29/96	7.60	868	20.7	NA	NA	
	08/26/96	7.36	1,108	21.1	NA	NA	
	<i>Construction of Landfill Cover</i>						NA
	02/27/97	7.40	816	17.0	1.7	NA	
	08/26/97	7.40	980	18.8	NA	NA	
	03/12/98	7.37	776	20.3	4.5	NA	
	07/13/98	7.38	935	21.3	15.1	NA	
	02/25/99	7.56	796	18.6	7.8	NA	
	08/25/99	7.69	845	21.1	3.6	NA	
	02/18/00	7.79	1,270	19.7	22.1	NA	
	02/20/01	7.95	1,250	17.4	NA	NA	
	08/02/01	7.42	810	20.16	NA	NA	
	02/08/02	7.65	740	18.9	NA	NA	
	02/13/03	7.29	630	18.3	5	NA	
	02/03/04	7.62	580	18.9	32.8	NA	
	02/10/05	7.40	740	20.8	17	NA	
	02/22/06	7.39	1,090	19.9	300	NA	
	02/15/07	7.22	793	20.6	4	NA	
	03/07/08	7.38	651	20.1	0	NA	
	02/18/10	7.36	600	18.1	42	NA	
	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	7.70	694	18.9	66	NA	
	08/22/11	NA	NA	NA	NA	NA	
	02/23/12	8.01	743	18.1	9.3	NA	
	12/17/13	7.87	721	19.2	13	NA	
02/27/14	6.79	0	21.44	482	NA		
02/23/15	7.29	688	19.0	1.0	4.33		
07/29/15	6.95	792	19.7	1.29	3.65		
08/04/16	7.28	642	19.1	1.39	2.58		
<b>MW-7</b>	10/18/94	7.40	500	20.1	NA	NA	
	12/12/94	7.40	170	23.2	NA	NA	
	01/05/95	7.50	160	22.9	NA	NA	
	02/23/95	7.62	460	18.1	NA	NA	
	06/16/95	6.00	572	21.9	NA	NA	
	08/25/95	7.50	695	21.9	NA	NA	
	12/11/95	7.40	470	27.4	NA	NA	
	02/08/96	7.90	210	22.1	NA	NA	
	04/29/96	7.70	614	20.0	NA	NA	
	08/26/96	7.40	625	20.0	NA	NA	

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)
<b>MW-7</b> (Cont.)	<i>Construction of Landfill Cover</i>					NA
	02/22/97	7.97	621	16.0	0.3	NA
	08/26/97	7.50	720	19.0	NA	NA
	03/12/98	7.48	534	18.8	3	NA
	07/13/98	7.60	608	21.9	15	NA
	02/25/99	7.63	537	19.2	6.3	NA
	08/25/99	8.22	553	20.5	7.7	NA
	02/18/00	7.71	6,010	20.0	17.7	NA
	02/20/01	8.50	230	17.6	NA	NA
	08/02/01	7.28	1,100	21.05	NA	NA
	02/08/02	8.26	390	19.3	NA	NA
	02/13/03	7.62	300	17.6	14	NA
	02/03/04	7.75	390	19.27	142	NA
	02/10/05	7.20	450	18.77	280	NA
	02/22/06	7.28	680	20.0	78	NA
	02/15/07	7.06	474	20.4	8	NA
	03/07/08	7.15	404	19.7	0	NA
	02/18/10	7.76	215	17.1	44	NA
	08/31/10	NA	NA	NA	NA	NA
	03/08/11	7.68	207	17.3	32	NA
	08/22/11	NA	NA	NA	NA	NA
	02/23/12	7.88	242	18.8	2.1	NA
	12/18/13	7.83	411	19.1	9.6	NA
02/27/14	6.81	0.002	21.722	325	NA	
02/23/15	7.34	249.3	19.3	0.8	6.36	
07/29/15	7.39	310	19.9	3.15	4.57	
08/04/16	7.18	249.8	20.4	3.18	3.60	
<b>MW-8</b>	10/18/94	6.90	870	17.9	NA	NA
	02/23/95	7.40	722	15.3	NA	NA
	06/16/95	6.30	617	16.7	NA	NA
	08/25/95	7.40	726	17.7	NA	NA
	12/11/95	7.20	830	19.1	NA	NA
	02/08/96	7.60	990	24.6	NA	NA
	04/29/96	7.40	696	18.9	NA	NA
	08/26/96	7.24	1,455	19.0	NA	NA
	<i>Construction of Landfill Cover</i>					NA
	02/22/97	7.11	1,245	16.0	2	NA
	06/04/97	7.07	1,010	19.0	2.2	NA
	08/26/97	7.40	1,200	16.0	NA	NA
	11/06/97	7.16	758	17.8	42	NA
	03/12/98	7.48	830	18.9	11	NA
	05/15/98	7.47	852	16.4	10	NA
	07/13/98	7.23	1,008	19.1	5.8	NA
	10/26/98	7.40	858	19.72	12	NA
	02/25/99	7.29	847	17.5	1.8	NA
	05/17/99	7.25	957	16.6	2.1	NA
	08/25/99	7.59	858	16.5	0.9	NA
	11/23/99	8.14	948	15.5	3.3	NA
	02/18/00	7.48	1,272	16.6	14.7	NA

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
<b>MW-8</b> (Cont.)	05/10/00	7.42	908	17.8	13.1	NA	
	02/20/01	8.09	1,000	16.1	NA	NA	
	05/24/01	8.21	920	20.16	NA	NA	
	08/02/01	7.43	730	20.5	NA	NA	
	11/12/01	7.40	870	18.3	NA	NA	
	02/08/02	7.61	570	15.4	NA	NA	
	08/13/02	7.03	740	16.94	NA	NA	
	02/13/03	7.36	590	17.2	11	NA	
	08/19/03	7.66	760	17.3	29	NA	
	08/13/04	5.80 *	640	16.77	10	NA	
	02/10/05	7.20	760	17.2	11	NA	
	08/15/05	7.16	760	16.6	4	NA	
	02/21/06	7.29	1,020	17.1	11	NA	
	08/22/06	7.05	855	19.27	1.83	NA	
	02/14/07	7.01	>99,900 <sup>(1)</sup>	17.6	5	NA	
	03/06/08	7.22	900	17.1	0	NA	
	02/18/10	7.26	760	15.2	41	NA	
	08/31/10	NA	NA	NA	NA	NA	
	03/08/11	7.49	702	16.2	–	NA	
	08/22/11	NA	NA	NA	NA	NA	
	02/23/12	7.96	1040	17.4	3.3	NA	
	12/18/13	7.66	1026	16.5	4.2	NA	
	02/27/14	6.72	0.009	19.277	316	NA	
	08/13/14	7.07	1031	16.9	1.9	0.19	
	02/24/15	6.89	920	18.0	1.47	1.26	
	08/04/16	6.93	852	19.5	1.47	1.95	
<b>MW-9</b>	02/07/96	7.40	920	24.0	NA	NA	
	04/29/96	7.30	985	20.4	NA	NA	
	08/26/96	7.31	1,272	20.0	NA	NA	
	<b>Construction of Landfill Cover</b>						
	11/19/96	7.55	1,050	19.1	NA	NA	
	02/25/97	7.52	1,055	18.9	1	NA	
	06/04/97	7.27	1,014	19.3	4.5	NA	
	08/26/97	7.60	910	18.0	NA	NA	
	11/07/97	6.76	746	18.8	46	NA	
	03/12/98	7.26	909	18.4	<100	NA	
	05/15/98	7.36	956	18.6	53	NA	
	07/13/98	7.43	919	20.8	7.5	NA	
	10/26/98	7.46	836	19.27	84	NA	
	02/25/99	7.61	850	16.5	23.6	NA	
	05/17/99	7.67	893	19.38	19.2	NA	
	08/25/99	7.59	957	21.5	26.1	NA	
	11/23/99	7.86	851	19.3	8.3	NA	
	02/18/00	7.53	1,353	18.5	14.7	NA	
	05/10/00	7.48	961	19.0	7.1	NA	
	02/20/01	7.86	1,020	17.7	NA	NA	
	05/24/01	7.90	900	19.4	NA	NA	
	08/02/01	7.44	820	19.2	NA	NA	
	11/12/01	6.98	880	19.1	NA	NA	

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)	
<b>MW-9</b> (Cont.)	02/08/02	7.64	830	18.8	NA	NA	
	08/13/02	7.11	920	20.1	NA	NA	
	02/13/03	7.31	650	18.0	10	NA	
	08/19/03	7.39	950	20.0	20	NA	
	02/03/04	7.41	800	18.9	13.2	NA	
	08/13/04	5.90*	770	19.9	51	NA	
	02/09/05	7.30	770	19.7	780	NA	
	08/15/05	7.29	880	19.2	5	NA	
	02/21/06	7.39	2,350	19.0	2	NA	
	08/22/06	7.15	917	21.4	1.73	NA	
	02/15/07	6.97	961	19.4	8	NA	
	08/20/07	7.13	989	21.2	NA	NA	
	03/07/08	7.32	950	19.5	0	NA	
	08/21/08	7.29	1,120	20.1	20	NA	
	02/18/10	7.42	786	17.8	39	NA	
	08/31/10	7.38	1,090	18.5	25	NA	
	03/08/11	7.40	794	17.9	24	NA	
	08/22/11	7.32	704	18.2	61	NA	
	02/23/12	8.06	856	16.8	17.6	NA	
	08/06/12	7.21	828	20.4	101	NA	
12/17/13	7.58	947	18.7	3.5	NA		
02/27/14	6.92	0.004	23.0	317	NA		
08/13/14	7.23	955	18.7	2.2	NA		
02/23/15	7.13	953	18.6	2.9	3.29		
07/29/15	NA	NA	NA	NA	NA		
08/04/16	7.10	961	19.4	2.31	2.83		
<b>MW-10</b>	02/07/96	7.30	1,100	19.3	NA	NA	
	04/29/96	7.80	1,170	20.2	NA	NA	
	08/26/96	7.35	1,571	20.2	NA	NA	
	<i>Construction of Landfill Cover</i>						NA
	11/19/96	7.20	1,148	21.3	NA	NA	
	02/25/97	7.46	1,116	19.2	0.6	NA	
	06/04/97	7.08	1,157	21.3	0.1	NA	
	08/26/97	7.70	1,300	19.0	NA	NA	
	11/07/97	7.00	823	19.5	4	NA	
	03/12/98	7.09	1,135	18.7	5	NA	
	05/15/98	7.30	1,222	19.9	18	NA	
	07/13/98	7.41	1,162	22.8	0.7	NA	
	10/26/98	7.42	965	19.7	17	NA	
	02/25/99	7.52	998	16.1	0.4	NA	
	05/17/99	7.43	1,060	19.6	2.1	NA	
	08/25/99	7.71	1,069	21.2	0.6	NA	
	11/23/99	7.73	1,144	19.2	3.3	NA	
	02/18/00	7.82	1,637	18.8	6.6	NA	
	05/10/00	7.19	1,017	19.2	3.1	NA	
	02/20/01	8.27	1,250	19.7	NA	NA	
05/24/01	8.10	1,030	20.1	NA	NA		
08/02/01	7.39	870	20.3	NA	NA		
11/12/01	6.89	980	20.2	NA	NA		

**Table C-4**  
**Historical Field Parameters**  
**September 1990 - Present**  
**Sutter Avenue Landfill, Camp San Luis Obispo, California**

Well ID	Date	pH	Electrical Conductivity (µmhos/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (DO) (mg/L)
MW-10 (Cont.)	02/08/02	7.53	900	18.3	NA	NA
	08/13/02	7.08	990	21.1	NA	NA
	02/13/03	7.21	700	18.0	5	NA
	08/19/03	7.50	960	20.2	12	NA
	02/03/04	7.45	800	19.9	0.26	NA
	08/13/04	5.70*	740	20.0	37	NA
	02/09/05	7.20	770	20.3	0	NA
	08/15/05	7.22	910	19.6	1	NA
	02/21/06	7.21	1,500	19.6	0	NA
	08/22/06	7.03	944	22.4	7.94	NA
	02/14/07	6.91	1,180	20.4	8	NA
	08/20/07	7.15	911	21.2	22.2	NA
	03/06/08	7.26	960	19.6	0	NA
	08/21/08	7.21	1,060	19.9	17.0	NA
	02/18/10	7.42	786	17.8	39.0	NA
	08/31/10	6.86	1,040	18.5	10.0	NA
	03/08/11	7.48	920	18.0	32	NA
	08/22/11	7.29	804	18.2	51.0	NA
	02/23/12	8.07	993	16.9	4.2	NA
	08/06/12	7.22	876	19.5	5	NA
	12/17/13	7.61	1,061	17.6	-0.2	NA
	02/27/14	7.23	0	21.6	224.0	NA
	08/13/14	7.36	988	18.9	1.6	NA
	02/23/15	7.21	979	17.9	1.3	0.87
07/29/15	NA	NA	NA	NA	NA	
08/04/16	7.16	912	17.8	0.88	1.28	

**Notes:**

NA – not analyzed

\* – pH of purge water measure subsequently (7.5) in November 2004.

µmhos/cm – micromhos per centimeter

°C – degrees Celsius

NTU – nephelometric turbidity units

(1) Obtained data not consistent with historical trend; subsequent measurements taken with the instrument met standards.

## **APPENDIX D**

**LABORATORY ANALYTICAL REPORTS  
AND CHAIN-OF-CUSTODY RECORDS**



Date of Report: 08/16/2016

Rafael Macedo

Environmental Cost Management

3525 Hyland Ave

Costa Mesa, CA 92626

Client Project: CAARNG - Camp San Luis Obispo  
 BCL Project: Camp San Luis Obispo - Shutter Ave Landfill  
 BCL Work Order: 1621648  
 Invoice ID: B243405

Enclosed are the results of analyses for samples received by the laboratory on 8/5/2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon  
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



## Table of Contents

### Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	7

### Sample Results

<b>1621648-01 - MW-1</b>	
Volatile Organic Analysis (EPA Method 8260B).....	11
Water Analysis (General Chemistry).....	14
<b>1621648-02 - MW-3</b>	
Volatile Organic Analysis (EPA Method 8260B).....	15
Water Analysis (General Chemistry).....	18
<b>1621648-03 - MW-6</b>	
Volatile Organic Analysis (EPA Method 8260B).....	19
Water Analysis (General Chemistry).....	22
<b>1621648-04 - MW-7</b>	
Volatile Organic Analysis (EPA Method 8260B).....	23
Water Analysis (General Chemistry).....	26
<b>1621648-05 - MW-8</b>	
Volatile Organic Analysis (EPA Method 8260B).....	27
Water Analysis (General Chemistry).....	30
<b>1621648-06 - MW-9</b>	
Volatile Organic Analysis (EPA Method 8260B).....	31
<b>1621648-07 - MW-10</b>	
Volatile Organic Analysis (EPA Method 8260B).....	34
<b>1621648-08 - QCBD</b>	
Volatile Organic Analysis (EPA Method 8260B).....	37
Water Analysis (General Chemistry).....	40
<b>1621648-09 - QCEB</b>	
Volatile Organic Analysis (EPA Method 8260B).....	41
<b>1621648-10 - QCTB</b>	
Volatile Organic Analysis (EPA Method 8260B).....	44

### Quality Control Reports

<b>Volatile Organic Analysis (EPA Method 8260B)</b>	
Method Blank Analysis.....	47
Laboratory Control Sample.....	52
Precision and Accuracy.....	53
<b>Water Analysis (General Chemistry)</b>	
Method Blank Analysis.....	55
Laboratory Control Sample.....	56
Precision and Accuracy.....	57

### Notes

Notes and Definitions.....	58
----------------------------	----

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Sample I.D.	Lab Sample No.	No. of Containers					Sampling Date	Sampling Time	VOCs (8260B) + MTBE	Chloride (300.0)	Sulfate (300.0)	Nitrate as N (300.0)	Total Dissolved Solids (SM 2540C)	1,4 Dioxane	Turn Around Time (working days)	Other Notes:
		Soil	Water	Air	Other	Prsv.										
MW-1	1		X				8/11/16	12:46	X	X	X	X	X	5		
MW-3	2		X				8/11/16	13:57	X	X	X	X	X	5		
MW-6	3		X				8/11/16	20:55	X	X	X	X	X	1	24 hrs. Turn Around	
MW-7	4		X				8/11/16	16:53	X	X	X	X	X	5		
MW-8	5		X				8/11/16	15:15	X	X	X	X	X	5		
MW-9	6		X				8/11/16	18:25	X					5	Hold for VOC results at MW-6	
MW-10	7		X				8/11/16	19:40	X					5		
QCBD	8		X				8/11/16	20:15	X	X	X	X	X	5		
QCEB	9		X				8/11/16	18:40	X					5		
QCTB	10		X				8/11/16	12:10	X					5		

**RUST!!**

Temperature received:  Ice  No ice

Relinquished by: *[Signature]* Date: 8/5/16 Time: 11:12 Received by: *[Signature]* Date: 8/5/16 Time: 15:05

Relinquished by: *[Signature]* Date: 8/5/16 Time: 15:05 Received by: *[Signature]* Date: 8/5/16 Time: 15:05

Relinquished by: *[Signature]* Date: *[Blank]* Time: *[Blank]* Received by: *[Signature]* Date: *[Blank]* Time: *[Blank]*

Client: CAARNG - Camp San Luis Obispo  
 Project: Camp SLO Shutter Avenue Landfill Monitoring  
 Telephone No. (949) 586-4092  
 Email: rmacedo@ecmconsultants.com  
 Project Manager: Rafael Macedo

ECM Consultants  
 3525 Hyland Avenue Ste 200  
 Costa Mesa, CA 92626  
 (714) 662-2759

CAARNG - Camp San Luis Obispo

Project: Camp SLO Shutter Avenue Landfill Monitoring  
 Telephone No. (949) 586-4092  
 Email: rmacedo@ecmconsultants.com

Client: CAARNG - Camp San Luis Obispo

Project: Camp SLO Shutter Avenue Landfill Monitoring  
 Telephone No. (949) 586-4092  
 Email: rmacedo@ecmconsultants.com

Method of Shipment: *BC Courier*

Page *1* of *1*

Special Detection Limit/Reporting

Lab Work No. *16-21648*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 3

Submission #: 16-211648

SHIPPING INFORMATION: Fed Ex  UPS  Ontrac  Hand Delivery  BC Lab Field Service  Other  (Specify) \_\_\_\_\_

SHIPPING CONTAINER: Ice Chest  None  Box  Other  (Specify) \_\_\_\_\_

FREE LIQUID: YES  NO  W / S

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals: Ice Chest  Containers  None  Comments: \_\_\_\_\_

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received:  YES  NO

Emissivity: 0.97 Container: PE Thermometer ID: 208 Date/Time: 8/5/16

Temperature: (A) 0.5 °C / (C) 0.6 °C Analyst Init: NSX 1505

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES			<u>D</u>							
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6+</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_

Sample Numbering Completed By: NSX Date/Time: 8/5/16 1700 Rev 21 05/23/2016

Δ = Actual / C = Corrected



BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 3

Submission #: 16-21648

SHIPPING INFORMATION: Fed Ex  UPS  Ontrac  Hand Delivery  BC Lab Field Service  Other  (Specify) \_\_\_\_\_

SHIPPING CONTAINER: Ice Chest  None  Box  Other  (Specify) \_\_\_\_\_

FREE LIQUID: YES  NO  (W / S)

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals: Ice Chest  Containers  None  Comments: \_\_\_\_\_

Intact? Yes  No  Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received:  YES  NO

Emissivity: 0.95 Container: Am Thermometer ID: 208 Date/Time: 8/5/16

Temperature: (A) 0.6 °C / (C) 0.6 °C Analyst Init: NSX 1505

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										AB
40ml VOA VIAL	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC	
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270	KF	EF			EP					
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_ Date/Time: 8-5-16 1712 Rev 21 05/23/2016

Sample Numbering Completed By: MA

A = Actual / C = Corrected



BC LABORATORIES INC. COOLER RECEIPT FORM Page 3 Of 3

Submission #: 16-21648

SHIPPING INFORMATION		SHIPPING CONTAINER	FREE LIQUID
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/>	Other <input type="checkbox"/> (Specify) _____		Ice Chest <input checked="" type="checkbox"/>
		None <input type="checkbox"/>	Box <input type="checkbox"/>
		Other <input type="checkbox"/> (Specify) _____	
			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
			(W) S

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_

Intact? Yes  No  Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received  YES  NO

Emissivity: 0.97 Container: PE Thermometer ID: 208 Date/Time: 8/5/16

Temperature: (A) 0.7 °C / (C) 0.8 °C Analyst Init: NSC 1505

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES	0	0		0	0			0		
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>6+</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270				EF	DE		EF			
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_

Sample Numbering Completed By: M Date/Time: 8-5-16 1710 Rev 21 05/23/2016

A = Actual / C = Corrected



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1621648-01</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-1 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 12:46 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-1 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1621648-02</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-3 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 13:47 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-3 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1621648-03</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-6 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 20:55 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-6 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1621648-04</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-7 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 16:53 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-7 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1621648-05</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-8 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 15:15 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-8 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1621648-06</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-9 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 18:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-9 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1621648-07</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-10 <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 19:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): MW-10 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

<b>1621648-08</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> QCBD <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 20:15 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Groundwater Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): QCBD Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1621648-09</b>	<b>COC Number:</b> --- <b>Project Number:</b> Camp SLO Shutter Avenue Landfill Monitoring <b>Sampling Location:</b> --- <b>Sampling Point:</b> QCEB <b>Sampled By:</b> Mark Czipka of ECMC	<b>Receive Date:</b> 08/05/2016 15:05 <b>Sampling Date:</b> 08/04/2016 18:40 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Blank Water Delivery Work Order: Global ID: L10002533210 Location ID (FieldPoint): QCEB Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

1621648-10

**COC Number:** ---  
**Project Number:** Camp SLO Shutter Avenue Landfill Monitoring  
**Sampling Location:** ---  
**Sampling Point:** QCTB  
**Sampled By:** Mark Czipka of ECMC

**Receive Date:** 08/05/2016 15:05  
**Sampling Date:** 08/04/2016 12:10  
**Sample Depth:** ---  
**Lab Matrix:** Water  
**Sample Type:** Blank Water  
Delivery Work Order:  
Global ID: L10002533210  
Location ID (FieldPoint): QCTB  
Matrix: W  
Sample QC Type (SACode): CS  
Cooler ID:

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-01	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-1, 8/4/2016 12:46:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-01	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-1, 8/4/2016 12:46:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-01	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-1, 8/4/2016 12:46:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	94.2	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 15:23	JMS	MS-V14	1	BZH0652

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-01	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-1, 8/4/2016 12:46:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	41	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	1.6	mg/L	0.20	0.044	EPA-300.0	ND	A07	2
Sulfate	30	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	1100	mg/L	50	50	EPA-160.1	ND		3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 14:39	OLH	IC5	1	BZH0673
2	EPA-300.0	08/05/16	08/06/16 06:41	OLH	IC5	2	BZH0673
3	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	5	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-02	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-3, 8/4/2016 1:47:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-02	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-3, 8/4/2016 1:47:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-02	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-3, 8/4/2016 1:47:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.3	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 15:47	JMS	MS-V14	1	BZH0652

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-02	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-3, 8/4/2016 1:47:00PM, Mark Czipka							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	73	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	3.1	mg/L	0.10	0.022	EPA-300.0	ND		1
Sulfate	17	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	700	mg/L	50	50	EPA-160.1	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 13:33	OLH	IC5	1	BZH0673
2	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	5	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-03	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-6, 8/4/2016 8:55:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
<b>Carbon tetrachloride</b>	<b>0.76</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.18</b>	<b>EPA-8260B</b>	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
<b>Chloroform</b>	<b>3.5</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.12</b>	<b>EPA-8260B</b>	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-03	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-6, 8/4/2016 8:55:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-03	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-6, 8/4/2016 8:55:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	94.0	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 09:55	JMS	MS-V14	1	BZH0652

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-03	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-6, 8/4/2016 8:55:00PM, Mark Czipka							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	23	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	3.9	mg/L	0.10	0.022	EPA-300.0	ND		1
Sulfate	25	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	390	mg/L	20	20	EPA-160.1	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 07:13	OLH	IC5	1	BZH0673
2	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	2	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-04	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-7, 8/4/2016 4:53:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-04	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-7, 8/4/2016 4:53:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-04	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-7, 8/4/2016 4:53:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	92.1	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 16:10	JMS	MS-V14	1	BZH0652

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-04	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-7, 8/4/2016 4:53:00PM, Mark Czipka							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	7.5	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	1.6	mg/L	0.10	0.022	EPA-300.0	ND		1
Sulfate	7.4	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	180	mg/L	10	10	EPA-160.1	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 07:30	OLH	IC5	1	BZH0673
2	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	1	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-05	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-8, 8/4/2016 3:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-05	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-8, 8/4/2016 3:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-05	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-8, 8/4/2016 3:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	84.5	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.4	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 15:01	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-05	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-8, 8/4/2016 3:15:00PM, Mark Czipka							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	53	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	2.5	mg/L	0.10	0.022	EPA-300.0	ND		1
Sulfate	12	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	530	mg/L	33	33	EPA-160.1	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 07:46	OLH	IC5	1	BZH0673
2	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	3.333	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management
3525 Hyland Ave
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56
Project: Camp San Luis Obispo - Shutter Ave Landfill
Project Number: CAARNG - Camp San Luis Obispo
Project Manager: Rafael Macedo

Volatile Organic Analysis (EPA Method 8260B)

Table with 2 columns: BCL Sample ID (1621648-06) and Client Sample Name (Camp SLO Shutter Avenue Landfill Monitoring, MW-9, 8/4/2016 6:25:00PM, Mark Czipka)

Main data table with 9 columns: Constituent, Result, Units, PQL, MDL, Method, MB Bias, Lab Qualls, Run #. Lists various chemical compounds and their test results.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-06	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-9, 8/4/2016 6:25:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-06	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-9, 8/4/2016 6:25:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	88.5	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	95.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 16:33	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-07	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-10, 8/4/2016 7:40:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-07	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-10, 8/4/2016 7:40:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-07	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, MW-10, 8/4/2016 7:40:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	88.0	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.2	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 16:56	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-08	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCBD, 8/4/2016 8:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
<b>Carbon tetrachloride</b>	<b>0.70</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.18</b>	<b>EPA-8260B</b>	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
<b>Chloroform</b>	<b>3.4</b>	<b>ug/L</b>	<b>0.50</b>	<b>0.12</b>	<b>EPA-8260B</b>	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-08	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCBD, 8/4/2016 8:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1
1,4-Dioxane	ND	ug/L	100	42	EPA-8260B	ND		1
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-08	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCBD, 8/4/2016 8:15:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND		1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	86.1	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	94.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 17:19	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1621648-08	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCBD, 8/4/2016 8:15:00PM, Mark Czipka							
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Chloride	23	mg/L	0.50	0.092	EPA-300.0	ND		1
Nitrate as N	4.0	mg/L	0.10	0.022	EPA-300.0	ND		1
Sulfate	25	mg/L	1.0	0.14	EPA-300.0	ND		1
Total Dissolved Solids @ 180 C	400	mg/L	20	20	EPA-160.1	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-300.0	08/05/16	08/06/16 08:03	OLH	IC5	1	BZH0673
2	EPA-160.1	08/10/16	08/10/16 10:30	CAD	MANUAL	2	BZH0957

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-09	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCEB, 8/4/2016 6:40:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	ug/L	1.0	0.23	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-09	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCEB, 8/4/2016 6:40:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acetonitrile	ND	ug/L	10	5.5	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-09	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCEB, 8/4/2016 6:40:00PM, Mark Czipka
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND	A40,V01	1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	87.4	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	95.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 14:37	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-10	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCTB, 8/4/2016 12:10:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	0.083	EPA-8260B	ND		1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
sec-Butylbenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Total 1,2-Dichloroethene	ND	ug/L	1.0	0.23	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-10	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCTB, 8/4/2016 12:10:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
p-Isopropyltoluene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	ND	ug/L	0.50	0.36	EPA-8260B	ND		1
n-Propylbenzene	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
Acetone	ND	ug/L	10	4.6	EPA-8260B	ND		1
Acetonitrile	ND	ug/L	10	5.5	EPA-8260B	ND		1
Acrylonitrile	ND	ug/L	5.0	1.2	EPA-8260B	ND		1
Carbon disulfide	ND	ug/L	1.0	0.38	EPA-8260B	ND		1
2-Chloroethyl vinyl ether	ND	ug/L	10	2.4	EPA-8260B	ND		1
trans-1,4-Dichloro-2-butene	ND	ug/L	5.0	1.4	EPA-8260B	ND		1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1621648-10	<b>Client Sample Name:</b> Camp SLO Shutter Avenue Landfill Monitoring, QCTB, 8/4/2016 12:10:00PM, Mark Czipka
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2-Hexanone	ND	ug/L	10	3.4	EPA-8260B	ND		1
Methyl ethyl ketone	ND	ug/L	10	2.5	EPA-8260B	ND		1
Methyl iodide	ND	ug/L	2.0	0.47	EPA-8260B	ND	A40,V01	1
Methyl isobutyl ketone	ND	ug/L	10	2.1	EPA-8260B	ND		1
Vinyl acetate	ND	ug/L	10	1.8	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	ND	ug/L	0.50	0.082	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	81.7	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.5	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/16	08/08/16 14:14	JMS	MS-V14	1	BZH0742

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BZH0652</b>						
Benzene	BZH0652-BLK1	ND	ug/L	0.50	0.083	
Bromobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.13	
Bromochloromethane	BZH0652-BLK1	ND	ug/L	0.50	0.24	
Bromodichloromethane	BZH0652-BLK1	ND	ug/L	0.50	0.14	
Bromoform	BZH0652-BLK1	ND	ug/L	0.50	0.27	
Bromomethane	BZH0652-BLK1	ND	ug/L	1.0	0.25	
n-Butylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.11	
sec-Butylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.15	
tert-Butylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.13	
Carbon tetrachloride	BZH0652-BLK1	ND	ug/L	0.50	0.18	
Chlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.093	
Chloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.14	
Chloroform	BZH0652-BLK1	ND	ug/L	0.50	0.12	
Chloromethane	BZH0652-BLK1	ND	ug/L	0.50	0.14	
2-Chlorotoluene	BZH0652-BLK1	ND	ug/L	0.50	0.20	
4-Chlorotoluene	BZH0652-BLK1	ND	ug/L	0.50	0.15	
Dibromochloromethane	BZH0652-BLK1	ND	ug/L	0.50	0.13	
1,2-Dibromo-3-chloropropane	BZH0652-BLK1	ND	ug/L	1.0	0.44	
1,2-Dibromoethane	BZH0652-BLK1	ND	ug/L	0.50	0.16	
Dibromomethane	BZH0652-BLK1	ND	ug/L	0.50	0.24	
1,2-Dichlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.072	
1,3-Dichlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.15	
1,4-Dichlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.062	
Dichlorodifluoromethane	BZH0652-BLK1	ND	ug/L	0.50	0.099	
1,1-Dichloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.11	
1,2-Dichloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.17	
1,1-Dichloroethene	BZH0652-BLK1	ND	ug/L	0.50	0.18	
cis-1,2-Dichloroethene	BZH0652-BLK1	ND	ug/L	0.50	0.085	
trans-1,2-Dichloroethene	BZH0652-BLK1	ND	ug/L	0.50	0.15	
1,2-Dichloropropane	BZH0652-BLK1	ND	ug/L	0.50	0.13	
1,3-Dichloropropane	BZH0652-BLK1	ND	ug/L	0.50	0.086	
2,2-Dichloropropane	BZH0652-BLK1	ND	ug/L	0.50	0.13	
1,1-Dichloropropene	BZH0652-BLK1	ND	ug/L	0.50	0.085	
cis-1,3-Dichloropropene	BZH0652-BLK1	ND	ug/L	0.50	0.14	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BZH0652</b>						
trans-1,3-Dichloropropene	BZH0652-BLK1	ND	ug/L	0.50	0.079	
Ethylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.098	
Hexachlorobutadiene	BZH0652-BLK1	ND	ug/L	0.50	0.17	
Isopropylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.14	
p-Isopropyltoluene	BZH0652-BLK1	ND	ug/L	0.50	0.12	
Methylene chloride	BZH0652-BLK1	ND	ug/L	1.0	0.48	
Methyl t-butyl ether	BZH0652-BLK1	ND	ug/L	0.50	0.11	
Naphthalene	BZH0652-BLK1	ND	ug/L	0.50	0.36	
n-Propylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.11	
Styrene	BZH0652-BLK1	ND	ug/L	0.50	0.068	
1,1,1,2-Tetrachloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.18	
1,1,2,2-Tetrachloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.17	
Tetrachloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.13	
Toluene	BZH0652-BLK1	ND	ug/L	0.50	0.093	
1,2,3-Trichlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.16	
1,2,4-Trichlorobenzene	BZH0652-BLK1	ND	ug/L	0.50	0.19	
1,1,1-Trichloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.11	
1,1,2-Trichloroethane	BZH0652-BLK1	ND	ug/L	0.50	0.16	
Trichloroethene	BZH0652-BLK1	ND	ug/L	0.50	0.085	
Trichlorofluoromethane	BZH0652-BLK1	ND	ug/L	0.50	0.13	
1,2,3-Trichloropropane	BZH0652-BLK1	ND	ug/L	1.0	0.24	
1,2,4-Trimethylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.12	
1,3,5-Trimethylbenzene	BZH0652-BLK1	ND	ug/L	0.50	0.12	
Vinyl chloride	BZH0652-BLK1	ND	ug/L	0.50	0.12	
Total Xylenes	BZH0652-BLK1	ND	ug/L	1.0	0.36	
Acetone	BZH0652-BLK1	ND	ug/L	10	4.6	
Acrylonitrile	BZH0652-BLK1	ND	ug/L	5.0	1.2	
Carbon disulfide	BZH0652-BLK1	ND	ug/L	1.0	0.38	
2-Chloroethyl vinyl ether	BZH0652-BLK1	ND	ug/L	10	2.4	
trans-1,4-Dichloro-2-butene	BZH0652-BLK1	ND	ug/L	5.0	1.4	
1,4-Dioxane	BZH0652-BLK1	ND	ug/L	100	42	
2-Hexanone	BZH0652-BLK1	ND	ug/L	10	3.4	
Methyl ethyl ketone	BZH0652-BLK1	ND	ug/L	10	2.5	
Methyl iodide	BZH0652-BLK1	ND	ug/L	2.0	0.47	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
-------------	--------------	-----------	-------	-----	-----	-----------

**QC Batch ID: BZH0652**

Methyl isobutyl ketone	BZH0652-BLK1	ND	ug/L	10	2.1	
Vinyl acetate	BZH0652-BLK1	ND	ug/L	10	1.8	
p- & m-Xylenes	BZH0652-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BZH0652-BLK1	ND	ug/L	0.50	0.082	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>BZH0652-BLK1</b>	<b>93.2</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>BZH0652-BLK1</b>	<b>101</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>BZH0652-BLK1</b>	<b>97.3</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

**QC Batch ID: BZH0742**

Benzene	BZH0742-BLK1	ND	ug/L	0.50	0.083	
Bromobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.13	
Bromochloromethane	BZH0742-BLK1	ND	ug/L	0.50	0.24	
Bromodichloromethane	BZH0742-BLK1	ND	ug/L	0.50	0.14	
Bromoform	BZH0742-BLK1	ND	ug/L	0.50	0.27	
Bromomethane	BZH0742-BLK1	ND	ug/L	1.0	0.25	
n-Butylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.11	
sec-Butylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.15	
tert-Butylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.13	
Carbon tetrachloride	BZH0742-BLK1	ND	ug/L	0.50	0.18	
Chlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.093	
Chloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.14	
Chloroform	BZH0742-BLK1	ND	ug/L	0.50	0.12	
Chloromethane	BZH0742-BLK1	ND	ug/L	0.50	0.14	
2-Chlorotoluene	BZH0742-BLK1	ND	ug/L	0.50	0.20	
4-Chlorotoluene	BZH0742-BLK1	ND	ug/L	0.50	0.15	
Dibromochloromethane	BZH0742-BLK1	ND	ug/L	0.50	0.13	
1,2-Dibromo-3-chloropropane	BZH0742-BLK1	ND	ug/L	1.0	0.44	
1,2-Dibromoethane	BZH0742-BLK1	ND	ug/L	0.50	0.16	
Dibromomethane	BZH0742-BLK1	ND	ug/L	0.50	0.24	
1,2-Dichlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.072	
1,3-Dichlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.15	
1,4-Dichlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.062	
Dichlorodifluoromethane	BZH0742-BLK1	ND	ug/L	0.50	0.099	
1,1-Dichloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.11	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BZH0742</b>						
1,2-Dichloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.17	
1,1-Dichloroethene	BZH0742-BLK1	ND	ug/L	0.50	0.18	
cis-1,2-Dichloroethene	BZH0742-BLK1	ND	ug/L	0.50	0.085	
trans-1,2-Dichloroethene	BZH0742-BLK1	ND	ug/L	0.50	0.15	
Total 1,2-Dichloroethene	BZH0742-BLK1	ND	ug/L	1.0	0.23	
1,2-Dichloropropane	BZH0742-BLK1	ND	ug/L	0.50	0.13	
1,3-Dichloropropane	BZH0742-BLK1	ND	ug/L	0.50	0.086	
2,2-Dichloropropane	BZH0742-BLK1	ND	ug/L	0.50	0.13	
1,1-Dichloropropene	BZH0742-BLK1	ND	ug/L	0.50	0.085	
cis-1,3-Dichloropropene	BZH0742-BLK1	ND	ug/L	0.50	0.14	
trans-1,3-Dichloropropene	BZH0742-BLK1	ND	ug/L	0.50	0.079	
Ethylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.098	
Hexachlorobutadiene	BZH0742-BLK1	ND	ug/L	0.50	0.17	
Isopropylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.14	
p-Isopropyltoluene	BZH0742-BLK1	ND	ug/L	0.50	0.12	
Methylene chloride	BZH0742-BLK1	ND	ug/L	1.0	0.48	
Methyl t-butyl ether	BZH0742-BLK1	ND	ug/L	0.50	0.11	
Naphthalene	BZH0742-BLK1	ND	ug/L	0.50	0.36	
n-Propylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.11	
Styrene	BZH0742-BLK1	ND	ug/L	0.50	0.068	
1,1,1,2-Tetrachloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.18	
1,1,2,2-Tetrachloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.17	
Tetrachloroethene	BZH0742-BLK1	ND	ug/L	0.50	0.13	
Toluene	BZH0742-BLK1	ND	ug/L	0.50	0.093	
1,2,3-Trichlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.16	
1,2,4-Trichlorobenzene	BZH0742-BLK1	ND	ug/L	0.50	0.19	
1,1,1-Trichloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.11	
1,1,2-Trichloroethane	BZH0742-BLK1	ND	ug/L	0.50	0.16	
Trichloroethene	BZH0742-BLK1	ND	ug/L	0.50	0.085	
Trichlorofluoromethane	BZH0742-BLK1	ND	ug/L	0.50	0.13	
1,2,3-Trichloropropane	BZH0742-BLK1	ND	ug/L	1.0	0.24	
1,2,4-Trimethylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.12	
1,3,5-Trimethylbenzene	BZH0742-BLK1	ND	ug/L	0.50	0.12	
Vinyl chloride	BZH0742-BLK1	ND	ug/L	0.50	0.12	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BZH0742</b>						
Total Xylenes	BZH0742-BLK1	ND	ug/L	1.0	0.36	
Acetone	BZH0742-BLK1	ND	ug/L	10	4.6	
Acetonitrile	BZH0742-BLK1	ND	ug/L	10	5.5	
Acrylonitrile	BZH0742-BLK1	ND	ug/L	5.0	1.2	
Carbon disulfide	BZH0742-BLK1	ND	ug/L	1.0	0.38	
2-Chloroethyl vinyl ether	BZH0742-BLK1	ND	ug/L	10	2.4	
trans-1,4-Dichloro-2-butene	BZH0742-BLK1	ND	ug/L	5.0	1.4	
1,4-Dioxane	BZH0742-BLK1	ND	ug/L	100	42	
2-Hexanone	BZH0742-BLK1	ND	ug/L	10	3.4	
Methyl ethyl ketone	BZH0742-BLK1	ND	ug/L	10	2.5	
Methyl iodide	BZH0742-BLK1	ND	ug/L	2.0	0.47	
Methyl isobutyl ketone	BZH0742-BLK1	ND	ug/L	10	2.1	
Vinyl acetate	BZH0742-BLK1	ND	ug/L	10	1.8	
p- & m-Xylenes	BZH0742-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BZH0742-BLK1	ND	ug/L	0.50	0.082	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>BZH0742-BLK1</b>	<b>93.9</b>	<b>%</b>	<b>75 - 125 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>BZH0742-BLK1</b>	<b>99.9</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>BZH0742-BLK1</b>	<b>95.9</b>	<b>%</b>	<b>80 - 120 (LCL - UCL)</b>		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
<b>QC Batch ID: BZH0652</b>										
Benzene	BZH0652-BS1	LCS	23.931	25.000	ug/L	95.7		70 - 130		
Bromodichloromethane	BZH0652-BS1	LCS	24.929	25.000	ug/L	99.7		70 - 130		
Chlorobenzene	BZH0652-BS1	LCS	23.595	25.000	ug/L	94.4		70 - 130		
Chloroethane	BZH0652-BS1	LCS	21.923	25.000	ug/L	87.7		70 - 130		
1,4-Dichlorobenzene	BZH0652-BS1	LCS	24.728	25.000	ug/L	98.9		70 - 130		
1,1-Dichloroethane	BZH0652-BS1	LCS	22.588	25.000	ug/L	90.4		70 - 130		
1,1-Dichloroethene	BZH0652-BS1	LCS	25.913	25.000	ug/L	104		70 - 130		
Toluene	BZH0652-BS1	LCS	25.454	25.000	ug/L	102		70 - 130		
Trichloroethene	BZH0652-BS1	LCS	28.900	25.000	ug/L	116		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BZH0652-BS1	LCS	9.2700	10.000	ug/L	92.7		75 - 125		
Toluene-d8 (Surrogate)	BZH0652-BS1	LCS	9.9800	10.000	ug/L	99.8		80 - 120		
4-Bromofluorobenzene (Surrogate)	BZH0652-BS1	LCS	9.9300	10.000	ug/L	99.3		80 - 120		
<b>QC Batch ID: BZH0742</b>										
Benzene	BZH0742-BS1	LCS	24.260	25.000	ug/L	97.0		70 - 130		
Bromodichloromethane	BZH0742-BS1	LCS	26.079	25.000	ug/L	104		70 - 130		
Chlorobenzene	BZH0742-BS1	LCS	23.824	25.000	ug/L	95.3		70 - 130		
Chloroethane	BZH0742-BS1	LCS	20.353	25.000	ug/L	81.4		70 - 130		
1,4-Dichlorobenzene	BZH0742-BS1	LCS	25.116	25.000	ug/L	100		70 - 130		
1,1-Dichloroethane	BZH0742-BS1	LCS	22.876	25.000	ug/L	91.5		70 - 130		
1,1-Dichloroethene	BZH0742-BS1	LCS	25.199	25.000	ug/L	101		70 - 130		
Toluene	BZH0742-BS1	LCS	26.545	25.000	ug/L	106		70 - 130		
Trichloroethene	BZH0742-BS1	LCS	27.921	25.000	ug/L	112		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BZH0742-BS1	LCS	10.010	10.000	ug/L	100		75 - 125		
Toluene-d8 (Surrogate)	BZH0742-BS1	LCS	10.150	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BZH0742-BS1	LCS	10.090	10.000	ug/L	101		80 - 120		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

Reported: 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Volatile Organic Analysis (EPA Method 8260B)

#### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quails
								Percent Recovery	Percent Recovery	
<b>QC Batch ID: BZH0652</b>		Used client sample: N								
Benzene	MS	1621340-03	ND	25.303	25.000	ug/L		101		70 - 130
	MSD	1621340-03	ND	25.688	25.000	ug/L	1.5	103	20	70 - 130
Bromodichloromethane	MS	1621340-03	ND	26.307	25.000	ug/L		105		70 - 130
	MSD	1621340-03	ND	27.061	25.000	ug/L	2.8	108	20	70 - 130
Chlorobenzene	MS	1621340-03	ND	24.288	25.000	ug/L		97.2		70 - 130
	MSD	1621340-03	ND	25.020	25.000	ug/L	3.0	100	20	70 - 130
Chloroethane	MS	1621340-03	ND	23.271	25.000	ug/L		93.1		70 - 130
	MSD	1621340-03	ND	23.999	25.000	ug/L	3.1	96.0	20	70 - 130
1,4-Dichlorobenzene	MS	1621340-03	0.23300	25.899	25.000	ug/L		103		70 - 130
	MSD	1621340-03	0.23300	26.242	25.000	ug/L	1.3	104	20	70 - 130
1,1-Dichloroethane	MS	1621340-03	ND	23.780	25.000	ug/L		95.1		70 - 130
	MSD	1621340-03	ND	24.515	25.000	ug/L	3.0	98.1	20	70 - 130
1,1-Dichloroethene	MS	1621340-03	ND	27.591	25.000	ug/L		110		70 - 130
	MSD	1621340-03	ND	27.852	25.000	ug/L	0.9	111	20	70 - 130
Toluene	MS	1621340-03	ND	26.955	25.000	ug/L		108		70 - 130
	MSD	1621340-03	ND	27.344	25.000	ug/L	1.4	109	20	70 - 130
Trichloroethene	MS	1621340-03	ND	28.700	25.000	ug/L		115		70 - 130
	MSD	1621340-03	ND	29.079	25.000	ug/L	1.3	116	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1621340-03	ND	9.8700	10.000	ug/L		98.7		75 - 125
	MSD	1621340-03	ND	9.4400	10.000	ug/L	4.5	94.4		75 - 125
Toluene-d8 (Surrogate)	MS	1621340-03	ND	10.190	10.000	ug/L		102		80 - 120
	MSD	1621340-03	ND	10.100	10.000	ug/L	0.9	101		80 - 120
4-Bromofluorobenzene (Surrogate)	MS	1621340-03	ND	9.9600	10.000	ug/L		99.6		80 - 120
	MSD	1621340-03	ND	10.000	10.000	ug/L	0.4	100		80 - 120
<b>QC Batch ID: BZH0742</b>		Used client sample: Y - Description: MW-8, 08/04/2016 15:15								
Benzene	MS	1621648-05	ND	25.194	25.000	ug/L		101		70 - 130
	MSD	1621648-05	ND	24.633	25.000	ug/L	2.3	98.5	20	70 - 130
Bromodichloromethane	MS	1621648-05	ND	26.505	25.000	ug/L		106		70 - 130
	MSD	1621648-05	ND	26.667	25.000	ug/L	0.6	107	20	70 - 130
Chlorobenzene	MS	1621648-05	ND	23.714	25.000	ug/L		94.9		70 - 130
	MSD	1621648-05	ND	24.061	25.000	ug/L	1.5	96.2	20	70 - 130
Chloroethane	MS	1621648-05	ND	20.863	25.000	ug/L		83.5		70 - 130
	MSD	1621648-05	ND	20.645	25.000	ug/L	1.1	82.6	20	70 - 130
1,4-Dichlorobenzene	MS	1621648-05	ND	25.213	25.000	ug/L		101		70 - 130
	MSD	1621648-05	ND	25.457	25.000	ug/L	1.0	102	20	70 - 130
1,1-Dichloroethane	MS	1621648-05	ND	23.723	25.000	ug/L		94.9		70 - 130
	MSD	1621648-05	ND	23.392	25.000	ug/L	1.4	93.6	20	70 - 130

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery		Lab Quals
								RPD	Percent	
<b>QC Batch ID: BZH0742</b>										
Used client sample: Y - Description: MW-8, 08/04/2016 15:15										
1,1-Dichloroethene	MS	1621648-05	ND	26.190	25.000	ug/L		105		70 - 130
	MSD	1621648-05	ND	25.869	25.000	ug/L	1.2	103	20	70 - 130
Toluene	MS	1621648-05	ND	26.908	25.000	ug/L		108		70 - 130
	MSD	1621648-05	ND	26.972	25.000	ug/L	0.2	108	20	70 - 130
Trichloroethene	MS	1621648-05	ND	28.258	25.000	ug/L		113		70 - 130
	MSD	1621648-05	ND	28.381	25.000	ug/L	0.4	114	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1621648-05	ND	10.020	10.000	ug/L		100		75 - 125
	MSD	1621648-05	ND	9.8100	10.000	ug/L	2.1	98.1		75 - 125
Toluene-d8 (Surrogate)	MS	1621648-05	ND	10.060	10.000	ug/L		101		80 - 120
	MSD	1621648-05	ND	10.130	10.000	ug/L	0.7	101		80 - 120
4-Bromofluorobenzene (Surrogate)	MS	1621648-05	ND	10.020	10.000	ug/L		100		80 - 120
	MSD	1621648-05	ND	10.150	10.000	ug/L	1.3	102		80 - 120

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

## Water Analysis (General Chemistry)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BZH0673</b>						
Chloride	BZH0673-BLK1	ND	mg/L	0.50	0.092	
Nitrate as N	BZH0673-BLK1	ND	mg/L	0.10	0.022	
Sulfate	BZH0673-BLK1	ND	mg/L	1.0	0.14	
<b>QC Batch ID: BZH0957</b>						
Total Dissolved Solids @ 180 C	BZH0957-BLK1	ND	mg/L	6.7	6.7	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
Project: Camp San Luis Obispo - Shutter Ave Landfill  
Project Number: CAARNG - Camp San Luis Obispo  
Project Manager: Rafael Macedo

### Water Analysis (General Chemistry)

#### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
<b>QC Batch ID: BZH0673</b>											
Chloride	BZH0673-BS1	LCS	49.536	50.000	mg/L	99.1		90	110		
Nitrate as N	BZH0673-BS1	LCS	4.9440	5.0000	mg/L	98.9		90	110		
Sulfate	BZH0673-BS1	LCS	100.15	100.00	mg/L	100		90	110		
<b>QC Batch ID: BZH0957</b>											
Total Dissolved Solids @ 180 C	BZH0957-BS1	LCS	585.00	586.00	mg/L	99.8		90	110		

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

## Water Analysis (General Chemistry)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
<b>QC Batch ID: BZH0673</b>		Used client sample: Y - Description: QCBD, 08/04/2016 20:15								
Chloride	DUP	1621648-08	23.356	23.236		mg/L	0.5		10	
	MS	1621648-08	23.356	79.499	50.505	mg/L		111		80 - 120
	MSD	1621648-08	23.356	79.482	50.505	mg/L	0.0	111	10	80 - 120
Nitrate as N	DUP	1621648-08	4.0280	3.9970		mg/L	0.8		10	
	MS	1621648-08	4.0280	9.2414	5.0505	mg/L		103		80 - 120
	MSD	1621648-08	4.0280	9.3202	5.0505	mg/L	0.8	105	10	80 - 120
Sulfate	DUP	1621648-08	25.351	25.351		mg/L	0		10	
	MS	1621648-08	25.351	134.17	101.01	mg/L		108		80 - 120
	MSD	1621648-08	25.351	134.94	101.01	mg/L	0.6	108	10	80 - 120
<b>QC Batch ID: BZH0957</b>		Used client sample: N								
Total Dissolved Solids @ 180 C	DUP	1621766-01	2180.0	2200.0		mg/L	0.9		10	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Environmental Cost Management  
3525 Hyland Ave  
Costa Mesa, CA 92626

**Reported:** 08/16/2016 16:56  
**Project:** Camp San Luis Obispo - Shutter Ave Landfill  
**Project Number:** CAARNG - Camp San Luis Obispo  
**Project Manager:** Rafael Macedo

**Notes And Definitions**

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A07 Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
- A40 Initial calibration linearity criteria not met.
- V01 The Initial Calibration Verification (ICV) recovery is not within established control limits.

## **APPENDIX E**

### **LANDFILL INSPECTION PHOTOGRAPHS**

**1. Sediments from Animal Burrows in Concrete V-Ditches**



**2. Animal Burrows in Grass Ditch.**



**3. Animal Burrows near Monitoring Well MW-3**



**4. Animal Burrowing on the Landfill Cap. Some of the burrows are large in size**



**5. Plant Growth and Windblown Debris in Grass Ditches**



**6. Debris Along Fence at NW Outfall Location**



**7. Warning sign on Sutter Avenue is Faded and Unreadable**



**8. Barbwire fence along Sutter Avenue in Disrepair**



**9. Lock on Access Gate is Rusty and Difficult to Open**



## **APPENDIX F**

### **LANDFILL INSPECTION DOCUMENTATION**

Sutter Ave LANDFILL  
Camp SLO, CALIFORNIA  
Wet Weather Preparedness Inspection Form

Inspector: Kelly Therrien  
Date of Inspection: 9/24/15  
Contract No.: D0733  
Task Order No.: —  
Star Job No.: 15029

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b>		
Are there locations with ponded water?	S	NO
Are there erosional features for burrows?	S	ground squirrel burrows
Are there any odors?	S	NO
Observe vegetation and note density, height, and type(s).	S	dry vegetation
<b>INGRESS/EGRESS</b>		
Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	smooth
<b>RUN-ON AREAS</b>		
Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>RUN-OFF AREAS</b>		
Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>SLOPES</b>		
Are there any potentially unstable slopes above or on the landfill?	S	NO
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	NO
<b>DRAINAGE/SEDIMENTATION</b>		
Observe all drainages and note clogging. Photograph	S	clear
Are there sedimentation basins? If yes, at what capacity are they?	—	NO
<b>POSSIBLE RECEIVING WATERS</b>		
Any floating/suspended waste from landfill?	S	NO
Any odors or discoloration?	S	NO
Any water-associated wildlife?	S	NO
Estimate flow rate to receiving water.	—	NO

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



Sutter Avenue  
Camp San Luis Obispo  
LANDFILL  
CALIFORNIA  
Wet Weather Preparedness Inspection Form

Inspector: Kelly Therrien  
 Date of Inspection: 10/28/15  
 Contract No.: D0733  
 Task Order No.: NA  
 Star Job No.: 15029

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

Area of Concern	Rating (S / U / NI / NA)*	Comments/Recommendations
<b>SOIL COVER</b>		
Are there locations with ponded water?	S	NO
Are there erosional features for burrows?	S	No, however many burrows
Are there any odors?	S	NO
Observe vegetation and note density, height, and type(s).	S	very dry, no more than 4"
<b>INGRESS/EGRESS</b>		
Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	mostly smooth
<b>RUN-ON AREAS</b>		
Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>RUN-OFF AREAS</b>		
Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>SLOPES</b>		
Are there any potentially unstable slopes above or on the landfill?	S	NO
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	NO
<b>DRAINAGE/SEDIMENTATION</b>		
Observe all drainages and note clogging. Photograph	S	clean of vegetation
Are there sedimentation basins? If yes, at what capacity are they?	—	NO
<b>POSSIBLE RECEIVING WATERS</b>		
Any floating/suspended waste from landfill?	S	NO
Any odors or discoloration?	S	NO
Any water-associated wildlife?	S	NO
Estimate flow rate to receiving water.	—	NO

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



Sutter Ave LANDFILL  
Camp San Luis, CALIFORNIA  
**Wet Weather Preparedness Inspection Form**

Inspector: Steve Elliott  
 Date of Inspection: 11-30-15  
 Contract No.: ~~35147~~ D0733  
 Task Order No.: N/A  
 Star Job No.: 15029

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

Area of Concern	Rating (S / U / NI / NA)*	Comments/Recommendations
<b>SOIL COVER</b>		
Are there locations with ponded water?	S	No
Are there erosional features for burrows?	S	No - but burrows
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	good cond'n - plentiful but low grasses
<b>INGRESS/EGRESS</b>		
Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	smooth
<b>RUN-ON AREAS</b>		
Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b>		
Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b>		
Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b>		
Observe all drainages and note clogging. Photograph	S	good condition
Are there sedimentation basins? If yes, at what capacity are they?	N/A	none
<b>POSSIBLE RECEIVING WATERS</b>		
Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	N/A	none

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable

Abundant burrows on and around LF cap.  
 Some low-lying (ponding) areas south of LF



Sutter Avenue LANDFILL  
Camp SLO, CALIFORNIA  
Wet Weather Preparedness Inspection Form

Inspector: Kelly Thernien  
 Date of Inspection: 12/17/15  
 Contract No.: D0733  
 Task Order No.: —  
 Star Job No.: 15029

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

Area of Concern	Rating (S / U / NI / NA)*	Comments/Recommendations
<b>SOIL COVER</b>		
Are there locations with ponded water?	S	NO
Are there erosional features for burrows?	<del>S</del> U	Burrowing prevalent
Are there any odors?	S	NO
Observe vegetation and note density, height, and type(s).	S	Dry w/ some new comers in
<b>INGRESS/EGRESS</b>		
Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	smooth
<b>RUN-ON AREAS</b>		
Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>RUN-OFF AREAS</b>		
Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>SLOPES</b>		
Are there any potentially unstable slopes above or on the landfill?	S	NO
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	NO
<b>DRAINAGE/SEDIMENTATION</b>		
Observe all drainages and note clogging. Photograph	S <del>m</del>	clear
Are there sedimentation basins? If yes, at what capacity are they?	—	NO
<b>POSSIBLE RECEIVING WATERS</b>		
Any floating/suspended waste from landfill?	S	NO
Any odors or discoloration?	S	NO
Any water-associated wildlife?	S	NO
Estimate flow rate to receiving water.	—	—

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



**SUTTER AVENUE LANDFILL**  
**Camp San Luis Obispo, CALIFORNIA**  
**Wet Weather Preparedness Inspection Form**

Inspector: Elliot Haro

Date of Inspection: January 20, 2016

Contract No.: \_\_\_\_\_

Task Order No.: \_\_\_\_\_

Star Job No.: \_\_\_\_\_

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b> Are there locations with ponded water?	U	Yes. Soil surface depression near the NE corner, near the intersection of the concrete v-ditch, as well as adjacent tire ruts.
Are there erosional features for burrows?	S	Yes. Few burrows with few tailings entering the concrete lined v-ditches.
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	95- to 100-percent cover; 0.5-inches; grasses
<b>INGRESS/EGRESS</b> Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	Smooth
<b>RUN-ON AREAS</b> Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b> Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b> Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b> Observe all drainages and note clogging. Photograph	S	No clogging
Are there sedimentation basins? If yes, at what capacity are they?	S	No
<b>POSSIBLE RECEIVING WATERS</b> Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	NA	

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



**SUTTER AVENUE LANDFILL**  
**Camp San Luis Obispo, CALIFORNIA**  
**Wet Weather Preparedness Inspection Form**

Inspector: Elliot Haro

Date of Inspection: February 1, 2016

Contract No.: \_\_\_\_\_

Task Order No.: \_\_\_\_\_

Star Job No.: \_\_\_\_\_

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b> Are there locations with ponded water?	U	Yes. Soil surface depression near the NE corner, near the intersection of the concrete v-ditch, as well as adjacent tire ruts.
Are there erosional features for burrows?	S	Yes. Few burrows with few tailings entering the concrete lined v-ditches.
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	100-percent cover; 0.5 to 1.5 inches; grasses, weeds, and shrubs
<b>INGRESS/EGRESS</b> Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	Smooth
<b>RUN-ON AREAS</b> Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b> Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b> Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b> Observe all drainages and note clogging. Photograph	S	No clogging
Are there sedimentation basins? If yes, at what capacity are they?	S	No
<b>POSSIBLE RECEIVING WATERS</b> Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	NA	

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



**SUTTER AVENUE LANDFILL**  
**Camp San Luis Obispo, CALIFORNIA**  
**Wet Weather Preparedness Inspection Form**

Inspector: Elliot Haro  
Date of Inspection: February 19, 2016  
Contract No.: \_\_\_\_\_  
Task Order No.: \_\_\_\_\_  
Star Job No.: \_\_\_\_\_

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b> Are there locations with ponded water?	U	Yes. Soil surface depression near the NE corner, near the intersection of the concrete v-ditch, as well as adjacent tire ruts.
Are there erosional features for burrows?	S	Yes. Few burrows with few tailings entering the concrete lined v-ditches.
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	100-percent cover; 0.5 inches to 2.5 feet; grasses, weeds, and shrubs
<b>INGRESS/EGRESS</b> Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	Smooth
<b>RUN-ON AREAS</b> Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b> Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b> Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b> Observe all drainages and note clogging. Photograph	S	No clogging
Are there sedimentation basins? If yes, at what capacity are they?	S	No
<b>POSSIBLE RECEIVING WATERS</b> Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	NA	

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



**SUTTER AVENUE LANDFILL**  
**Camp San Luis Obispo, CALIFORNIA**  
**Wet Weather Preparedness Inspection Form**

Inspector: Elliot Haro

Date of Inspection: March 7, 2016

Contract No.: \_\_\_\_\_

Task Order No.: \_\_\_\_\_

Star Job No.: \_\_\_\_\_

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b> Are there locations with ponded water?	U	Yes. Soil surface depression near the NE corner, near the intersection of the concrete v-ditch, as well as adjacent tire ruts.
Are there erosional features for burrows?	S	Yes. Few burrows with few tailings entering the concrete lined v-ditches.
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	100-percent cover; 0.5 inches to 3.5 feet; grasses, weeds, and shrubs
<b>INGRESS/EGRESS</b> Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	Smooth
<b>RUN-ON AREAS</b> Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b> Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b> Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b> Observe all drainages and note clogging. Photograph	S	No clogging
Are there sedimentation basins? If yes, at what capacity are they?	S	No
<b>POSSIBLE RECEIVING WATERS</b> Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	NA	

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



**SUTTER AVENUE LANDFILL**  
**Camp San Luis Obispo, CALIFORNIA**  
**Wet Weather Preparedness Inspection Form**

Inspector: Elliot Haro

Date of Inspection: April 14, 2015

Contract No.: \_\_\_\_\_

Task Order No.: \_\_\_\_\_

Star Job No.: \_\_\_\_\_

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b> Are there locations with ponded water?	S	No
Are there erosional features for burrows?	S	Yes. Several burrows have tailings entering the concrete lined v-ditches.
Are there any odors?	S	No
Observe vegetation and note density, height, and type(s).	S	95- to 100-percent cover; 0.5-24-inches; grasses, coyote bush
<b>INGRESS/EGRESS</b> Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	Smooth
<b>RUN-ON AREAS</b> Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>RUN-OFF AREAS</b> Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	No
Are there any odors?	S	No
Any erosion and/or exposed refuse?	S	No
Any non-storm water discharge locations?	S	No
<b>SLOPES</b> Are there any potentially unstable slopes above or on the landfill?	S	No
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	No
<b>DRAINAGE/SEDIMENTATION</b> Observe all drainages and note clogging. Photograph	S	No clogging
Are there sedimentation basins? If yes, at what capacity are they?	S	No
<b>POSSIBLE RECEIVING WATERS</b> Any floating/suspended waste from landfill?	S	No
Any odors or discoloration?	S	No
Any water-associated wildlife?	S	No
Estimate flow rate to receiving water.	NA	

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



Sutter Ave. LANDFILL  
Camp SLO, CALIFORNIA  
Wet Weather Preparedness Inspection Form

Inspector: Kelly Therrien  
Date of Inspection: 5/15/16  
Contract No.: D0733  
Task Order No.: —  
Star Job No.: 15029

**KEY CONCERNS:**

- 1) Can storm water run onto landfill, become trapped, and percolate through waste?
- 2) Are areas susceptible to erosion, potentially exposing waste?

<u>Area of Concern</u>	<u>Rating</u> (S / U / NI / NA)*	<u>Comments/Recommendations</u>
<b>SOIL COVER</b>		
Are there locations with ponded water?	S	NO
Are there erosional features for burrows?	U	yes, many burrows
Are there any odors?	S	NO
Observe vegetation and note density, height, and type(s).	S	mostly dry
<b>INGRESS/EGRESS</b>		
Is access for service vehicles smooth or rutted (ruts can redirect storm flow)?	S	smooth except for areas w/ burrows
<b>RUN-ON AREAS</b>		
Are there uphill pathways that direct storm water onto the landfill? If so, estimate affected area and flow rate.	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>RUN-OFF AREAS</b>		
Are there downhill berms or debris that can impede storm water flow from landfill, causing ponding?	S	NO
Are there any odors?	S	NO
Any erosion and/or exposed refuse?	S	NO
Any non-storm water discharge locations?	S	NO
<b>SLOPES</b>		
Are there any potentially unstable slopes above or on the landfill?	S	NO
Are there any BMPs implemented due to slopes? If yes, photograph and note effectiveness.	S	NO
<b>DRAINAGE/SEDIMENTATION</b>		
Observe all drainages and note clogging. Photograph	S	no vegetation clogging
Are there sedimentation basins? If yes, at what capacity are they?	—	NO
<b>POSSIBLE RECEIVING WATERS</b>		
Any floating/suspended waste from landfill?	S	NO
Any odors or discoloration?	S	NO
Any water-associated wildlife?	S	NO
Estimate flow rate to receiving water.	—	—

\*S = Satisfactory; U = Unsatisfactory; NI = Not Inspected; NA = Not Applicable



## Landfill Inspection Report

Project Name: <u>CA ARWG</u>		Project No.: <u>landfill</u>
Location: <u>Camp San Luis Obispo</u>		Date: <u>6/15/16</u>
Project Manager: <u>Rafael Macedo</u>		Time (A/D): <u>10:16 / 12:08</u>
		Field Personnel: <u>Mark Czytko</u>
Standard Observations		Comments and Recommendations
For The Landfill		
Whether storm water drainage ditches and sediment/retention basins contain liquids.	Y/ <input checked="" type="radio"/> N	None observed
Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and estimated flow rate (show affected area on map).	Y/ <input checked="" type="radio"/> N	None observed
Presence of odors – characterization, source, and distance from source.	Y/ <input checked="" type="radio"/> N	None detected
Evidence of ponding over the WMUs (show affected area on map).	Y/ <input checked="" type="radio"/> N	None observed
Evidence of erosion or exposed waste.	Y/ <input checked="" type="radio"/> N	None observed
Evidence of waste in the drainage system (e.g., ditches and storm water sediment/retention basins).	Y/ <input checked="" type="radio"/> N	None observed
Inspection of storm water discharge locations for evidence of non-storm water discharges.	Y/ <input checked="" type="radio"/> N	None observed
Integrity of drainage systems during wet season.	Y/N	not applicable
For Receiving Waters		
Floating and suspended materials of waste origin; presence or absence, source, and size of affected area.	Y/ <input checked="" type="radio"/> N	No discharge
Discoloration and turbidity - description of color, source, and size of affected area.	Y/ <input checked="" type="radio"/> N	No discharge
Presence of odors - characterization, source, and distance from source.	Y/ <input checked="" type="radio"/> N	None detected
Evidence of beneficial use - presence of water-associated wildlife.	Y/ <input checked="" type="radio"/> N	None observed
Estimated flow rate to receiving water.	Y/ <input checked="" type="radio"/> N	No discharge, 0 cfs
Weather Conditions		
Wind Direction <u>from the northwest</u>	Wind Estimated Velocity <u>13 mph</u>	
Total Precipitation (5 Days) <u>0"</u>	Greater Than 1 Inch Precipitation? <input checked="" type="radio"/> Y/ <input type="radio"/> N	

**Note:**

Complete Page 2 of inspection report in addition to Standard Observations during each inspection.

<b>Project Name:</b> <u>CAARNG Camp SLO</u>		<b>Project No.:</b> <u>Landfill</u>	
<b>Field Personnel:</b> <u>Mark Czypka</u>		<b>Date:</b> <u>6/15/16</u>	
Additional Drainage Systems Inspections		Observations and Recommendations	
Describe the general condition of stormwater facilities.		Area is dry, no discharge. Concrete V-ditches had sediment from burrowing animals but are not impeded. Other ditches had plant growth. Some of the barb wire fencing along gutter area is down. Owl habits are leaning over, animal burrows on cap.	
Indicate whether stormwater sedimentation/ retention basins and drainage ditches contain liquids, and if basins are discharging.		No liquids observed in drainage ditches.	
Document compliance with the Landfill-specific Stormwater Pollution Prevention Plan (SWPPP).		Minor sediment from burrowing animals and plant growth in drainage <del>the</del> <sup>the</sup> V-ditches would not adversely affect proper function of the drainage system.	
Indicate steps taken to correct any problems found during the previous inspections, if any, and dates when corrective actions were taken. (Include photographic documentation).		V-ditches will be cleaned of sediment and plant growth after the wet weather preparedness assessment.	

# Landfill Inspection Report

Project Name: <u>Camp SLO Sutter Avenue Landfill</u>		Project No.: <u>N/A</u>
Location: <u>San Luis Obispo, California</u>		Date: <u>015/16</u>
Project Manager: <u>Rafael Macedo</u>		Time (A/D): <u>07:44 /</u>
		Field Personnel: <u>Mark Czupka</u>
Standard Observations		Comments and Recommendations
For The Landfill		
Whether storm water drainage ditches and sediment/retention basins contain liquids.	Y <input checked="" type="radio"/> N	None observed
Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and estimated flow rate (show affected area on map).	Y / <input checked="" type="radio"/> N	None observed
Presence of odors – characterization, source, and distance from source.	Y / <input checked="" type="radio"/> N	None detected
Evidence of ponding over the WMUs (show affected area on map).	Y / <input checked="" type="radio"/> N	None observed
Evidence of erosion or exposed waste.	Y / <input checked="" type="radio"/> N	None observed
Evidence of waste in the drainage system (e.g., ditches and storm water sediment/retention basins).	Y / <input checked="" type="radio"/> N	None observed
Inspection of storm water discharge locations for evidence of non-storm water discharges.	Y / <input checked="" type="radio"/> N	None observed
Integrity of drainage systems during wet season.	Y / N	Not applicable
For Receiving Waters		
Floating and suspended materials of waste origin; presence or absence, source, and size of affected area.	Y <input checked="" type="radio"/> N	No discharge
Discoloration and turbidity - description of color, source, and size of affected area.	Y / <input checked="" type="radio"/> N	No discharge
Presence of odors - characterization, source, and distance from source.	Y / <input checked="" type="radio"/> N	None detected
Evidence of beneficial use - presence of water-associated wildlife.	Y / <input checked="" type="radio"/> N	None observed
Estimated flow rate to receiving water.	Y / <input checked="" type="radio"/> N	No discharge, 0 cfs
<b>Weather Conditions</b>		
Wind Direction <u>from WSW</u>	Wind Estimated Velocity <u>6 mph</u>	
Total Precipitation (5 Days) <u>0 in</u>	Greater Than 1 Inch Precipitation?	Y <input checked="" type="radio"/> N

**Note:**

Complete Page 2 of inspection report in addition to Standard Observations during each inspection.

# Landfill Inspection Report

Project Name: <u>Camp SLO S-Hr Ave Landfill</u> Project No.: _____ Field Personnel: <u>Mark Cook</u> Date: <u>8/5/16</u>	
Additional Drainage Systems Inspections	Observations and Recommendations
Describe the general condition of stormwater facilities.	Area is dry, no discharge. Concrete U-ditches have soil from burrowing animals, one area near MW-1, SG-4 has more soil than the other areas. Other ditches had plant growth about knee high. Barb wire fencing along Section Ave has areas in need of repair. Some wind blown trash observed. Owl habitats are leaning over, several areas of large burrows
Indicate whether stormwater sedimentation/ retention basins and drainage ditches contain liquids, and if basins are discharging.	No liquids observed in drainage ditches
Document compliance with the Landfill-specific Stormwater Pollution Prevention Plan (SWPPP).	Sediment from burrowing animals and plant growth in drainage U-ditches would not adversely affect proper function of the drainage system but should be removed.
Indicate steps taken to correct any problems found during the previous inspections, if any, and dates when corrective actions were taken. (Include photographic documentation).	U-ditches will be cleaned of sediment and plant growth after the wet weather assessment

## **APPENDIX G**

### **RAINFALL DATA SHEETS**

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo KCASANLU47  
**October 1, 2015 - October 31, 2015**

2015 Oct	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	82.6 °F	71.7 °F	60.8 °F	62.2 °F	58.9 °F	51.9 °F	91%	74%	46%	13 mph	6 mph	0 mph	29.76 in	29.7 in	29.64 in	0.04 in
2	81.7 °F	70.1 °F	58.5 °F	60.3 °F	57.4 °F	53.8 °F	95%	72%	39%	16 mph	6 mph	0 mph	29.77 in	29.67 in	29.58 in	0 in
3	75.7 °F	65.4 °F	55.2 °F	60.7 °F	55.9 °F	49.9 °F	99%	83%	57%	13 mph	6 mph	0 mph	29.58 in	29.45 in	29.32 in	0 in
4	77.9 °F	66.1 °F	54.3 °F	56.9 °F	53.7 °F	50.1 °F	95%	76%	44%	9 mph	4 mph	0 mph	29.51 in	29.41 in	29.31 in	0.02 in
5	79 °F	65.6 °F	52.2 °F	57.8 °F	54.2 °F	50.8 °F	95%	74%	45%	12 mph	3 mph	0 mph	29.77 in	29.64 in	29.51 in	0 in
6	82.4 °F	68 °F	53.6 °F	59.5 °F	54.7 °F	49.2 °F	93%	73%	38%	12 mph	4 mph	0 mph	29.89 in	29.83 in	29.77 in	0 in
7	88.2 °F	72.4 °F	56.7 °F	59.8 °F	57.2 °F	54.7 °F	97%	76%	35%	14 mph	5 mph	0 mph	29.87 in	29.83 in	29.79 in	0.02 in
8	97.9 °F	78.2 °F	58.6 °F	61.2 °F	57.6 °F	54.5 °F	93%	59%	26%	15 mph	6 mph	0 mph	29.83 in	29.78 in	29.73 in	0 in
9	99.9 °F	81.6 °F	63.3 °F	60.2 °F	56.9 °F	54.3 °F	77%	52%	24%	17 mph	7 mph	0 mph	29.77 in	29.7 in	29.63 in	0 in
10	91.9 °F	76.3 °F	60.8 °F	62.6 °F	57.3 °F	51.1 °F	88%	59%	32%	9 mph	4 mph	0 mph	29.76 in	29.71 in	29.66 in	0 in
11	96.4 °F	77.6 °F	58.8 °F	61.7 °F	57.7 °F	54.6 °F	91%	66%	31%	10 mph	4 mph	0 mph	29.76 in	29.7 in	29.64 in	0 in
12	95.2 °F	76.2 °F	57.2 °F	60.2 °F	55.8 °F	49.9 °F	90%	55%	28%	8 mph	3 mph	0 mph	29.72 in	29.68 in	29.65 in	0 in
13	97.7 °F	83.3 °F	68.9 °F	66.4 °F	56.9 °F	48.7 °F	80%	45%	29%	14 mph	4 mph	0 mph	29.79 in	29.75 in	29.7 in	0 in
14	88.3 °F	77.1 °F	65.8 °F	69.1 °F	64.1 °F	58.4 °F	87%	71%	52%	11 mph	4 mph	0 mph	29.77 in	29.71 in	29.65 in	0 in
15	80.8 °F	71.9 °F	63.1 °F	68.4 °F	63 °F	59.7 °F	95%	85%	65%	8 mph	4 mph	0 mph	29.73 in	29.69 in	29.66 in	0.04 in
16	81.9 °F	72 °F	62.1 °F	65.6 °F	61.3 °F	59.1 °F	96%	84%	58%	12 mph	4 mph	0 mph	29.73 in	29.68 in	29.64 in	0 in
17	72.1 °F	66.4 °F	60.8 °F	61.4 °F	59.1 °F	58 °F	92%	86%	68%	12 mph	4 mph	0 mph	29.76 in	29.72 in	29.68 in	0 in
18	76.3 °F	66.1 °F	55.9 °F	59.4 °F	56.8 °F	53.8 °F	95%	79%	49%	16 mph	5 mph	0 mph	29.77 in	29.74 in	29.7 in	0 in
19	73.8 °F	64 °F	54.1 °F	58.7 °F	55.2 °F	50.7 °F	94%	78%	55%	14 mph	5 mph	0 mph	29.81 in	29.76 in	29.7 in	0 in
20	79.9 °F	67.7 °F	55.4 °F	59.2 °F	54.6 °F	49 °F	96%	72%	34%	14 mph	6 mph	0 mph	29.75 in	29.69 in	29.63 in	0 in
21	84.6 °F	70 °F	55.4 °F	60.2 °F	53.5 °F	48.4 °F	96%	64%	33%	14 mph	4 mph	0 mph	29.71 in	29.67 in	29.64 in	0 in
22	76.8 °F	63.7 °F	50.5 °F	59.9 °F	54.8 °F	49.7 °F	99%	85%	54%	12 mph	3 mph	0 mph	29.78 in	29.73 in	29.68 in	0.02 in
23	81.9 °F	66.3 °F	50.7 °F	60.9 °F	55.5 °F	49.9 °F	99%	79%	46%	9 mph	3 mph	0 mph	29.79 in	29.76 in	29.72 in	0.01 in
24	90.1 °F	72.3 °F	54.5 °F	57.3 °F	53.4 °F	47.9 °F	95%	60%	30%	14 mph	4 mph	0 mph	29.76 in	29.71 in	29.66 in	0 in
25	81.3 °F	69.1 °F	56.8 °F	59.4 °F	54.8 °F	49.7 °F	91%	73%	38%	17 mph	4 mph	0 mph	29.75 in	29.7 in	29.66 in	0 in
26	88.2 °F	70.7 °F	53.2 °F	60.3 °F	52.1 °F	47.6 °F	92%	63%	27%	11 mph	4 mph	0 mph	29.75 in	29.7 in	29.65 in	0 in
27	82.8 °F	67.8 °F	52.7 °F	57.7 °F	53.6 °F	41.2 °F	98%	71%	29%	10 mph	4 mph	0 mph	29.78 in	29.73 in	29.68 in	0.01 in
28	82.4 °F	69.8 °F	57.2 °F	60.9 °F	57.2 °F	44.5 °F	94%	73%	33%	16 mph	6 mph	0 mph	29.79 in	29.74 in	29.68 in	0 in
29	74.3 °F	65.6 °F	56.8 °F	56 °F	51.3 °F	46 °F	93%	68%	42%	17 mph	6 mph	0 mph	29.79 in	29.72 in	29.64 in	0 in
30	79.2 °F	68.2 °F	57.2 °F	46.6 °F	44.3 °F	40.3 °F	63%	50%	25%	11 mph	4 mph	0 mph	29.79 in	29.75 in	29.7 in	0 in
31	92.7 °F	75.6 °F	58.5 °F	57 °F	51.8 °F	45.9 °F	93%	52%	22%	11 mph	6 mph	0 mph	29.83 in	29.78 in	29.74 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]

Rancho De Caballo **KCASANLU47**

**November 1, 2015 - November 30, 2015**

2015	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
Nov	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	78.6 °F	66.4 °F	54.3 °F	59.8 °F	55.7 °F	51.4 °F	95%	75%	49%	9 mph	4 mph	0 mph	29.88 in	29.8 in	29.72 in	0 in
2	59 °F	53.8 °F	48.6 °F	55.7 °F	52.7 °F	47.2 °F	98%	92%	83%	14 mph	4 mph	0 mph	29.73 in	29.64 in	29.55 in	1.09 in
3	69.6 °F	57.7 °F	45.7 °F	53.2 °F	47.6 °F	42 °F	97%	78%	50%	12 mph	4 mph	0 mph	29.73 in	29.67 in	29.62 in	0.01 in
4	67.1 °F	56.2 °F	45.3 °F	48.1 °F	41.1 °F	32.5 °F	82%	61%	30%	18 mph	4 mph	0 mph	29.91 in	29.81 in	29.72 in	0 in
5	74.5 °F	63 °F	51.4 °F	48.2 °F	40 °F	33.2 °F	75%	51%	26%	13 mph	6 mph	0 mph	30.01 in	29.96 in	29.91 in	0 in
6	70.5 °F	60.9 °F	51.3 °F	40.8 °F	39.1 °F	36.9 °F	66%	48%	34%	22 mph	9 mph	0 mph	30.02 in	29.96 in	29.9 in	0 in
7	80.4 °F	64.7 °F	48.9 °F	47.9 °F	41.2 °F	34.1 °F	82%	49%	26%	16 mph	5 mph	0 mph	29.91 in	29.85 in	29.78 in	0 in
8	69.4 °F	56.6 °F	43.7 °F	56.2 °F	47.2 °F	37.9 °F	97%	75%	40%	12 mph	5 mph	0 mph	29.83 in	29.77 in	29.72 in	0.28 in
9	67.5 °F	56.8 °F	46 °F	53.7 °F	48.9 °F	43.5 °F	98%	85%	52%	9 mph	2 mph	0 mph	29.84 in	29.8 in	29.75 in	0.12 in
10	63.1 °F	52.4 °F	41.7 °F	48.9 °F	43.1 °F	39.7 °F	95%	73%	51%	11 mph	4 mph	0 mph	30.11 in	29.98 in	29.84 in	0.03 in
11	65.5 °F	56.7 °F	47.8 °F	44.5 °F	40.9 °F	38.9 °F	74%	59%	42%	21 mph	12 mph	0 mph	30.14 in	30.06 in	29.97 in	0 in
12	64.6 °F	57.7 °F	50.7 °F	46.1 °F	42 °F	36.9 °F	70%	58%	48%	31 mph	14 mph	0 mph	29.97 in	29.88 in	29.8 in	0 in
13	79.3 °F	67.2 °F	55.2 °F	46.6 °F	40.6 °F	35.9 °F	63%	45%	25%	20 mph	7 mph	0 mph	29.82 in	29.77 in	29.72 in	0 in
14	78.3 °F	62.6 °F	46.8 °F	49.7 °F	40.6 °F	32.1 °F	89%	55%	21%	10 mph	3 mph	0 mph	29.75 in	29.69 in	29.64 in	0 in
15	58.8 °F	51 °F	43.2 °F	52.2 °F	46.1 °F	38.7 °F	95%	87%	70%	14 mph	4 mph	0 mph	29.81 in	29.74 in	29.66 in	0.49 in
16	59.5 °F	50.9 °F	42.3 °F	38.1 °F	31.3 °F	22.3 °F	84%	49%	32%	20 mph	9 mph	0 mph	30.04 in	29.92 in	29.81 in	0 in
17	64.9 °F	55.1 °F	45.3 °F	37.1 °F	31.8 °F	23.1 °F	55%	42%	34%	14 mph	6 mph	0 mph	30.1 in	30.04 in	29.98 in	0 in
18	67.8 °F	60.1 °F	52.3 °F	44.9 °F	41.4 °F	37 °F	59%	53%	43%	23 mph	8 mph	0 mph	29.99 in	29.92 in	29.85 in	0 in
19	74.5 °F	65.7 °F	56.8 °F	48.2 °F	44.5 °F	41.4 °F	62%	48%	37%	19 mph	8 mph	0 mph	29.89 in	29.82 in	29.75 in	0 in
20	77.7 °F	69.6 °F	61.5 °F	50.9 °F	47.2 °F	43.5 °F	58%	48%	37%	23 mph	8 mph	0 mph	29.82 in	29.77 in	29.72 in	0 in
21	86.4 °F	72.1 °F	57.7 °F	48.8 °F	44.2 °F	40.4 °F	55%	40%	23%	11 mph	4 mph	0 mph	29.81 in	29.75 in	29.69 in	0 in
22	85.6 °F	70.1 °F	54.5 °F	46.6 °F	42.1 °F	36.7 °F	60%	45%	20%	11 mph	4 mph	0 mph	29.77 in	29.72 in	29.67 in	0 in
23	72.5 °F	61.5 °F	50.4 °F	54.5 °F	45.6 °F	32.4 °F	86%	66%	41%	9 mph	4 mph	0 mph	29.75 in	29.7 in	29.66 in	0 in
24	65.1 °F	53.8 °F	42.4 °F	52.9 °F	46.7 °F	37.2 °F	94%	77%	57%	13 mph	4 mph	0 mph	29.79 in	29.73 in	29.67 in	0.21 in
25	57.4 °F	49.2 °F	41 °F	47.6 °F	40.3 °F	35.8 °F	96%	77%	58%	12 mph	4 mph	0 mph	29.74 in	29.72 in	29.69 in	0.12 in
26	56.1 °F	48.3 °F	40.5 °F	40.2 °F	37.1 °F	35 °F	83%	68%	52%	13 mph	7 mph	0 mph	29.84 in	29.79 in	29.74 in	0 in
27	62.4 °F	52.5 °F	42.6 °F	41.7 °F	35.1 °F	32.6 °F	71%	59%	39%	14 mph	7 mph	0 mph	29.86 in	29.82 in	29.78 in	0 in
28	65.7 °F	55.3 °F	45 °F	41.6 °F	35.3 °F	30.9 °F	74%	55%	32%	17 mph	7 mph	0 mph	29.91 in	29.85 in	29.8 in	0 in
29	67.5 °F	56 °F	44.6 °F	38.7 °F	31.4 °F	26.6 °F	64%	45%	22%	16 mph	5 mph	0 mph	29.95 in	29.91 in	29.87 in	0 in
30	66.4 °F	52.7 °F	39 °F	40.7 °F	31.8 °F	26.2 °F	69%	48%	27%	9 mph	3 mph	0 mph	29.97 in	29.93 in	29.89 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]

Rancho De Caballo **KCASANLU47**

**December 1, 2015 - December 31, 2015**

2015 Dec	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	68 °F	57.5 °F	47.1 °F	35.8 °F	30.5 °F	25 °F	55%	38%	27%	17 mph	7 mph	0 mph	29.97 in	29.92 in	29.88 in	0 in
2	77 °F	62.5 °F	48 °F	47.4 °F	34.9 °F	24.6 °F	79%	45%	20%	19 mph	4 mph	0 mph	29.97 in	29.9 in	29.84 in	0 in
3	71.6 °F	59.2 °F	46.9 °F	53.4 °F	44.5 °F	36.1 °F	95%	69%	37%	11 mph	3 mph	0 mph	29.89 in	29.85 in	29.82 in	0.13 in
4	64.6 °F	55.8 °F	46.9 °F	48.4 °F	44.6 °F	40 °F	96%	70%	52%	13 mph	5 mph	0 mph	30.03 in	29.94 in	29.86 in	0 in
5	72.5 °F	60.6 °F	48.7 °F	46.2 °F	42.2 °F	37.5 °F	77%	60%	28%	20 mph	6 mph	0 mph	30.07 in	30.01 in	29.96 in	0 in
6	67.6 °F	56.3 °F	45 °F	49 °F	42.6 °F	37 °F	83%	64%	45%	9 mph	3 mph	0 mph	30.1 in	30.05 in	29.99 in	0 in
7	74.8 °F	65.4 °F	55.9 °F	54.5 °F	43.8 °F	34.8 °F	66%	48%	32%	22 mph	7 mph	0 mph	30.03 in	29.98 in	29.92 in	0 in
8	73.6 °F	67.1 °F	60.6 °F	47.8 °F	46.3 °F	43 °F	61%	50%	37%	23 mph	8 mph	0 mph	29.96 in	29.91 in	29.86 in	0 in
9	72.3 °F	64.1 °F	55.9 °F	53.2 °F	46.3 °F	41.4 °F	85%	55%	36%	18 mph	7 mph	0 mph	29.91 in	29.84 in	29.77 in	0 in
10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11	58.5 °F	51.9 °F	45.3 °F	49.1 °F	44.3 °F	39.2 °F	98%	79%	66%	10 mph	4 mph	0 mph	29.79 in	29.72 in	29.65 in	0.36 in
12	58.8 °F	52.2 °F	45.5 °F	43.9 °F	41.3 °F	39.1 °F	79%	68%	56%	14 mph	6 mph	0 mph	29.97 in	29.88 in	29.79 in	0 in
13	57.2 °F	48.9 °F	40.6 °F	53.2 °F	42 °F	36 °F	94%	78%	60%	20 mph	5 mph	0 mph	29.97 in	29.85 in	29.73 in	0.26 in
14	55.6 °F	47.6 °F	39.6 °F	39.9 °F	35 °F	30.5 °F	83%	66%	45%	14 mph	5 mph	0 mph	29.9 in	29.86 in	29.82 in	0 in
15	54.1 °F	46.2 °F	38.3 °F	35.9 °F	31.7 °F	27.7 °F	76%	61%	40%	10 mph	5 mph	0 mph	29.98 in	29.92 in	29.86 in	0 in
16	60.1 °F	50.2 °F	40.3 °F	40.7 °F	32.1 °F	28.5 °F	75%	53%	33%	11 mph	4 mph	0 mph	30.03 in	29.99 in	29.95 in	0 in
17	63.7 °F	55.1 °F	46.4 °F	42.1 °F	30.1 °F	26.4 °F	60%	41%	28%	13 mph	5 mph	0 mph	30.04 in	29.98 in	29.92 in	0 in
18	62.8 °F	51.4 °F	40.1 °F	49.1 °F	39.1 °F	26.5 °F	98%	66%	36%	8 mph	3 mph	0 mph	29.94 in	29.85 in	29.75 in	0 in
19	58.5 °F	50.7 °F	42.8 °F	53.2 °F	45 °F	37 °F	99%	91%	75%	8 mph	3 mph	0 mph	29.9 in	29.81 in	29.71 in	0.82 in
20	57.7 °F	49.2 °F	40.8 °F	43.2 °F	39.3 °F	35.9 °F	87%	76%	46%	10 mph	2 mph	0 mph	30.05 in	29.98 in	29.91 in	0 in
21	56.7 °F	50.2 °F	43.7 °F	56.4 °F	49.2 °F	40.1 °F	99%	92%	79%	13 mph	5 mph	0 mph	30.01 in	29.88 in	29.75 in	0.98 in
22	58.3 °F	54.3 °F	50.4 °F	57.7 °F	54.5 °F	46 °F	99%	96%	79%	22 mph	10 mph	0 mph	29.74 in	29.67 in	29.59 in	0.77 in
23	58.5 °F	51.8 °F	45 °F	45.4 °F	40.5 °F	36.4 °F	85%	65%	46%	14 mph	8 mph	0 mph	29.77 in	29.71 in	29.65 in	0 in
24	59.2 °F	49.3 °F	39.4 °F	48.2 °F	40 °F	35.4 °F	93%	76%	58%	13 mph	4 mph	0 mph	29.86 in	29.8 in	29.73 in	0.19 in
25	55.6 °F	46.5 °F	37.4 °F	41.8 °F	36.6 °F	33.5 °F	87%	72%	57%	10 mph	4 mph	0 mph	30.01 in	29.94 in	29.86 in	0 in
26	48.2 °F	43.8 °F	39.4 °F	33.1 °F	26.8 °F	22.9 °F	71%	51%	42%	9 mph	4 mph	0 mph	30.2 in	30.14 in	30.07 in	0 in
27	60.6 °F	47.5 °F	34.5 °F	39.7 °F	31.9 °F	23.5 °F	83%	63%	40%	10 mph	3 mph	0 mph	30.08 in	29.98 in	29.87 in	0.17 in
28	56.1 °F	47 °F	37.9 °F	42 °F	37 °F	32.9 °F	90%	76%	59%	14 mph	4 mph	0 mph	29.88 in	29.79 in	29.7 in	0 in
29	54.5 °F	45.6 °F	36.7 °F	37.5 °F	34.1 °F	31.3 °F	84%	67%	51%	11 mph	4 mph	0 mph	29.95 in	29.86 in	29.77 in	0 in
30	59.4 °F	50.6 °F	41.7 °F	35.4 °F	31.3 °F	28.4 °F	64%	50%	38%	15 mph	6 mph	0 mph	30.02 in	29.97 in	29.92 in	0 in
31	60.8 °F	49.7 °F	38.5 °F	40.1 °F	34.2 °F	29 °F	83%	59%	40%	18 mph	5 mph	0 mph	29.96 in	29.9 in	29.84 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo **KCASANLU47**  
**January 1, 2016 - January 31, 2016**

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	Jan	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low
1	59.9 °F	47.8 °F	35.6 °F	43.3 °F	36.6 °F	31.8 °F	87%	73%	49%	9 mph	3 mph	0 mph	29.92 in	29.88 in	29.83 in	0 in
2	63.5 °F	52.9 °F	42.3 °F	47.6 °F	40.5 °F	33.6 °F	90%	70%	37%	9 mph	3 mph	0 mph	29.87 in	29.82 in	29.76 in	0 in
3	62.4 °F	54.7 °F	46.9 °F	46.4 °F	44.4 °F	41.1 °F	86%	71%	47%	19 mph	4 mph	0 mph	29.78 in	29.66 in	29.54 in	0.02 in
4	61.9 °F	56.2 °F	50.5 °F	51.1 °F	47.2 °F	43.4 °F	91%	79%	62%	9 mph	2 mph	0 mph	29.61 in	29.57 in	29.52 in	0.01 in
5	55.4 °F	52.1 °F	48.7 °F	52.8 °F	49.6 °F	47.5 °F	98%	93%	81%	18 mph	6 mph	0 mph	29.7 in	29.57 in	29.43 in	2.08 in
6	59.2 °F	52.5 °F	45.7 °F	50.6 °F	46.9 °F	43.8 °F	99%	92%	71%	18 mph	5 mph	0 mph	29.7 in	29.6 in	29.51 in	1.1 in
7	57 °F	49.3 °F	41.7 °F	49.5 °F	44.5 °F	40.5 °F	99%	90%	72%	11 mph	4 mph	0 mph	29.78 in	29.69 in	29.59 in	0.54 in
8	57.2 °F	49.8 °F	42.3 °F	45.1 °F	40.9 °F	38.4 °F	91%	75%	58%	12 mph	4 mph	0 mph	29.9 in	29.83 in	29.76 in	0 in
9	54.7 °F	49.6 °F	44.4 °F	50.2 °F	45.1 °F	39.1 °F	96%	86%	73%	16 mph	4 mph	0 mph	29.95 in	29.91 in	29.86 in	0.02 in
10	59.9 °F	54.3 °F	48.7 °F	51.7 °F	49.5 °F	47 °F	99%	91%	71%	9 mph	2 mph	0 mph	30.02 in	29.96 in	29.9 in	0.1 in
11	68.4 °F	57.1 °F	45.7 °F	51.7 °F	47.5 °F	42.1 °F	99%	81%	47%	14 mph	3 mph	0 mph	30.09 in	30.05 in	30 in	0 in
12	67.6 °F	56.3 °F	45 °F	56.5 °F	39.4 °F	33.8 °F	73%	58%	34%	12 mph	5 mph	0 mph	30.04 in	29.98 in	29.91 in	0 in
13	63.7 °F	54.4 °F	45.1 °F	54.9 °F	45.3 °F	35.4 °F	95%	80%	62%	9 mph	4 mph	0 mph	29.99 in	29.94 in	29.9 in	0.07 in
14	65.3 °F	55.5 °F	45.7 °F	48.7 °F	44.1 °F	41.1 °F	92%	76%	50%	16 mph	5 mph	0 mph	29.96 in	29.9 in	29.84 in	0 in
15	66.2 °F	57 °F	47.8 °F	55.3 °F	50.1 °F	45.9 °F	99%	90%	60%	9 mph	4 mph	0 mph	29.92 in	29.86 in	29.81 in	0.08 in
16	68.5 °F	58.6 °F	48.7 °F	57.4 °F	51.6 °F	47.4 °F	99%	90%	64%	12 mph	4 mph	0 mph	30.01 in	29.95 in	29.9 in	0.14 in
17	62.6 °F	55.9 °F	49.3 °F	56.4 °F	53 °F	49 °F	99%	95%	78%	10 mph	2 mph	0 mph	30.02 in	29.95 in	29.89 in	0.01 in
18	67.5 °F	58.5 °F	49.5 °F	59.3 °F	54.4 °F	49.2 °F	99%	94%	70%	9 mph	4 mph	0 mph	29.96 in	29.92 in	29.88 in	0.49 in
19	59.4 °F	55.2 °F	50.9 °F	59.1 °F	54.8 °F	50.6 °F	99%	99%	98%	18 mph	5 mph	0 mph	29.98 in	29.92 in	29.86 in	2.56 in
20	68.7 °F	59.2 °F	49.8 °F	56 °F	52.2 °F	47.1 °F	99%	86%	61%	7 mph	2 mph	0 mph	30.04 in	29.99 in	29.94 in	0.03 in
21	71.4 °F	59.8 °F	48.2 °F	52.7 °F	48.2 °F	43.3 °F	99%	78%	47%	8 mph	3 mph	0 mph	29.97 in	29.92 in	29.87 in	0 in
22	66.7 °F	57.8 °F	48.9 °F	54.4 °F	51.4 °F	48.6 °F	99%	86%	57%	14 mph	4 mph	0 mph	29.94 in	29.87 in	29.79 in	0.39 in
23	61.3 °F	54.4 °F	47.5 °F	54.6 °F	49.7 °F	43.5 °F	99%	85%	67%	14 mph	6 mph	0 mph	29.9 in	29.85 in	29.8 in	0.26 in
24	61.7 °F	53.7 °F	45.7 °F	46.9 °F	43.6 °F	41.5 °F	85%	72%	55%	12 mph	5 mph	0 mph	30.01 in	29.95 in	29.9 in	0 in
25	61.9 °F	55.4 °F	48.9 °F	46.8 °F	43.6 °F	41.7 °F	79%	68%	56%	18 mph	6 mph	0 mph	30.01 in	29.98 in	29.94 in	0 in
26	73.8 °F	61.4 °F	48.9 °F	52.1 °F	44.1 °F	40.3 °F	83%	64%	34%	22 mph	6 mph	0 mph	30.07 in	30.02 in	29.98 in	0 in
27	73.8 °F	59.9 °F	45.9 °F	52.7 °F	45 °F	39.2 °F	91%	68%	38%	9 mph	3 mph	0 mph	30.07 in	30.03 in	29.99 in	0 in
28	70.5 °F	58.2 °F	46 °F	52.4 °F	41.4 °F	35.1 °F	92%	55%	32%	12 mph	5 mph	0 mph	30.04 in	29.98 in	29.91 in	0 in
29	73.4 °F	60.7 °F	48 °F	57.3 °F	50.2 °F	35.1 °F	99%	78%	42%	16 mph	5 mph	0 mph	29.97 in	29.9 in	29.83 in	0.01 in
30	61.7 °F	55.2 °F	48.7 °F	56.7 °F	51.8 °F	46.9 °F	99%	91%	67%	14 mph	4 mph	0 mph	29.84 in	29.78 in	29.73 in	0.48 in
31	53.8 °F	47 °F	40.3 °F	50.8 °F	42.4 °F	34.5 °F	99%	82%	58%	22 mph	9 mph	0 mph	29.72 in	29.57 in	29.42 in	1.83 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo **KCASANLU47**  
**February 1, 2016 - February 29, 2016**

2016 Feb	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	56.3 °F	48.1 °F	39.9 °F	40.2 °F	31.8 °F	26.7 °F	76%	56%	36%	15 mph	7 mph	0 mph	30.03 in	29.86 in	29.69 in	0 in
2	55.8 °F	47.7 °F	39.6 °F	45.7 °F	38.9 °F	32.2 °F	98%	75%	53%	8 mph	3 mph	0 mph	30.05 in	30.01 in	29.97 in	0 in
3	65.5 °F	53.9 °F	42.3 °F	45.4 °F	38.9 °F	32.6 °F	94%	66%	38%	11 mph	5 mph	0 mph	30.18 in	30.11 in	30.05 in	0 in
4	62.8 °F	56 °F	49.3 °F	43 °F	36.8 °F	30.9 °F	60%	50%	42%	18 mph	9 mph	0 mph	30.17 in	30.11 in	30.06 in	0 in
5	74.7 °F	61.1 °F	47.5 °F	51 °F	41 °F	35.5 °F	77%	56%	35%	13 mph	5 mph	0 mph	30.15 in	30.11 in	30.07 in	0 in
6	73.6 °F	63.2 °F	52.7 °F	44.9 °F	38.3 °F	31.1 °F	58%	43%	29%	18 mph	8 mph	0 mph	30.16 in	30.08 in	29.99 in	0 in
7	80.4 °F	69.6 °F	58.8 °F	53.7 °F	42.2 °F	33 °F	58%	43%	34%	22 mph	8 mph	0 mph	30.01 in	29.94 in	29.87 in	0.01 in
8	90 °F	73.9 °F	57.9 °F	56.6 °F	44 °F	34.7 °F	62%	40%	26%	14 mph	4 mph	0 mph	29.95 in	29.91 in	29.86 in	0 in
9	89.8 °F	71.6 °F	53.4 °F	57.5 °F	45.3 °F	38.1 °F	68%	48%	21%	8 mph	3 mph	0 mph	29.97 in	29.9 in	29.84 in	0 in
10	83.1 °F	67.3 °F	51.6 °F	58.4 °F	45.2 °F	35.1 °F	68%	43%	26%	12 mph	5 mph	0 mph	29.96 in	29.91 in	29.86 in	0 in
11	83.7 °F	66.1 °F	48.6 °F	59.9 °F	47.7 °F	37.2 °F	97%	62%	33%	10 mph	3 mph	0 mph	29.93 in	29.89 in	29.85 in	0 in
12	78.8 °F	61.9 °F	45 °F	60.2 °F	50.9 °F	44.2 °F	99%	65%	41%	16 mph	6 mph	0 mph	29.92 in	29.87 in	29.82 in	0 in
13	75.9 °F	68.7 °F	61.5 °F	58.6 °F	51.7 °F	45 °F	68%	58%	46%	22 mph	6 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
14	73.8 °F	65.2 °F	56.7 °F	53.2 °F	49.7 °F	46.3 °F	76%	58%	47%	23 mph	6 mph	0 mph	29.99 in	29.92 in	29.86 in	0 in
15	78.3 °F	71.4 °F	64.4 °F	56.7 °F	51.8 °F	47.8 °F	60%	54%	44%	25 mph	13 mph	0 mph	29.88 in	29.79 in	29.7 in	0.01 in
16	92.8 °F	74.9 °F	57 °F	57.8 °F	49.2 °F	43.7 °F	63%	48%	21%	12 mph	4 mph	0 mph	29.75 in	29.65 in	29.55 in	0 in
17	63.7 °F	57.5 °F	51.3 °F	54.2 °F	48.4 °F	38.6 °F	96%	73%	44%	20 mph	6 mph	0 mph	29.6 in	29.53 in	29.46 in	1.17 in
18	65.3 °F	55.5 °F	45.7 °F	56 °F	48.3 °F	43.8 °F	99%	82%	51%	11 mph	4 mph	0 mph	29.85 in	29.71 in	29.57 in	0.22 in
19	63.3 °F	52.8 °F	42.3 °F	50.3 °F	45.8 °F	41.5 °F	97%	80%	54%	16 mph	4 mph	0 mph	29.97 in	29.9 in	29.83 in	0 in
20	69.8 °F	59.8 °F	49.8 °F	54.8 °F	45.6 °F	40.7 °F	89%	66%	53%	12 mph	6 mph	0 mph	29.98 in	29.92 in	29.85 in	0 in
21	70.5 °F	60.6 °F	50.7 °F	51.6 °F	45.9 °F	40.9 °F	72%	60%	44%	16 mph	7 mph	0 mph	29.97 in	29.94 in	29.91 in	0 in
22	71.2 °F	62.8 °F	54.3 °F	47.9 °F	44.9 °F	38.9 °F	69%	55%	41%	26 mph	10 mph	0 mph	29.95 in	29.88 in	29.8 in	0.02 in
23	80.2 °F	65.6 °F	50.9 °F	56.4 °F	47.4 °F	41.6 °F	81%	58%	41%	28 mph	5 mph	0 mph	29.85 in	29.78 in	29.7 in	0 in
24	80.2 °F	64.1 °F	48 °F	56.3 °F	44.2 °F	34.4 °F	86%	58%	34%	9 mph	3 mph	0 mph	29.92 in	29.88 in	29.84 in	0 in
25	77.9 °F	63.8 °F	49.6 °F	58.7 °F	46.2 °F	33.5 °F	80%	56%	35%	9 mph	4 mph	0 mph	29.89 in	29.85 in	29.82 in	0 in
26	71.8 °F	59.3 °F	46.8 °F	56.6 °F	50.6 °F	43.7 °F	99%	82%	54%	12 mph	3 mph	0 mph	29.94 in	29.89 in	29.84 in	0 in
27	80.2 °F	64 °F	47.8 °F	59.2 °F	52 °F	46.2 °F	99%	75%	44%	16 mph	6 mph	0 mph	29.93 in	29.86 in	29.8 in	0 in
28	76.5 °F	66.8 °F	57.2 °F	52.7 °F	48.2 °F	40.9 °F	75%	54%	40%	19 mph	6 mph	0 mph	29.92 in	29.88 in	29.83 in	0 in
29	80.6 °F	69.6 °F	58.6 °F	56.8 °F	47.7 °F	41.3 °F	59%	47%	37%	25 mph	6 mph	0 mph	29.92 in	29.86 in	29.81 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo **KCASANLU47**  
**March 1, 2016 - March 31, 2016**

2016 Mar	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	79.2 °F	64.6 °F	50 °F	58.2 °F	45.7 °F	31.7 °F	92%	52%	25%	15 mph	4 mph	0 mph	29.9 in	29.86 in	29.83 in	0 in
2	74.7 °F	61 °F	47.3 °F	56.9 °F	49.2 °F	41.5 °F	90%	79%	53%	12 mph	3 mph	0 mph	29.92 in	29.88 in	29.83 in	0 in
3	66.7 °F	56.8 °F	46.9 °F	54.5 °F	50.6 °F	44.7 °F	97%	81%	55%	11 mph	4 mph	0 mph	29.93 in	29.88 in	29.82 in	0 in
4	67.6 °F	59 °F	50.4 °F	59.3 °F	55.7 °F	50.1 °F	99%	91%	73%	7 mph	3 mph	0 mph	29.85 in	29.81 in	29.77 in	0.01 in
5	61.2 °F	57.8 °F	54.3 °F	59.8 °F	56.6 °F	53.2 °F	99%	97%	91%	26 mph	7 mph	0 mph	29.79 in	29.7 in	29.61 in	3.01 in
6	64 °F	55.2 °F	46.4 °F	55.1 °F	48.1 °F	44.1 °F	99%	80%	56%	14 mph	5 mph	0 mph	29.84 in	29.72 in	29.6 in	0.81 in
7	54.9 °F	49.3 °F	43.7 °F	49.1 °F	44.8 °F	41 °F	97%	87%	75%	16 mph	6 mph	0 mph	29.76 in	29.65 in	29.54 in	1.9 in
8	63 °F	53.8 °F	44.6 °F	49.3 °F	45 °F	40.9 °F	95%	77%	55%	14 mph	5 mph	0 mph	29.92 in	29.84 in	29.76 in	0 in
9	72.1 °F	59.2 °F	46.4 °F	55.9 °F	49.8 °F	41.8 °F	99%	78%	50%	14 mph	4 mph	0 mph	29.91 in	29.87 in	29.83 in	0 in
10	74.3 °F	62.1 °F	49.8 °F	57.1 °F	52.6 °F	49.5 °F	99%	80%	49%	11 mph	3 mph	0 mph	29.9 in	29.83 in	29.77 in	0.01 in
11	56.8 °F	51.2 °F	45.5 °F	52.1 °F	47.4 °F	42.8 °F	99%	90%	71%	18 mph	6 mph	0 mph	29.88 in	29.75 in	29.62 in	0.63 in
12	63.5 °F	53 °F	42.4 °F	48.5 °F	45.4 °F	40.3 °F	96%	77%	55%	14 mph	3 mph	0 mph	30 in	29.94 in	29.88 in	0 in
13	62.2 °F	54.7 °F	47.1 °F	57 °F	51.5 °F	45.5 °F	98%	91%	77%	9 mph	4 mph	0 mph	29.96 in	29.92 in	29.87 in	0.58 in
14	65.8 °F	58.7 °F	51.6 °F	55.9 °F	52.1 °F	43.4 °F	99%	82%	61%	10 mph	4 mph	0 mph	29.97 in	29.92 in	29.88 in	0.55 in
15	69.4 °F	60.4 °F	51.4 °F	49.5 °F	44.8 °F	41.4 °F	71%	57%	44%	18 mph	8 mph	0 mph	29.97 in	29.88 in	29.8 in	0 in
16	76.8 °F	66.4 °F	56.1 °F	54.2 °F	46.8 °F	40.7 °F	66%	53%	43%	26 mph	11 mph	0 mph	29.83 in	29.76 in	29.68 in	0.08 in
17	84.9 °F	68.7 °F	52.5 °F	60.7 °F	51.5 °F	45.6 °F	98%	63%	42%	11 mph	4 mph	0 mph	29.7 in	29.67 in	29.64 in	0 in
18	68.5 °F	59.5 °F	50.4 °F	57.1 °F	52.7 °F	50.1 °F	99%	92%	64%	10 mph	4 mph	0 mph	29.78 in	29.73 in	29.67 in	0.01 in
19	67.5 °F	59.4 °F	51.3 °F	58 °F	53.5 °F	51 °F	99%	90%	70%	8 mph	3 mph	0 mph	29.86 in	29.82 in	29.77 in	0 in
20	76.1 °F	60.8 °F	45.5 °F	56.2 °F	52 °F	45.2 °F	99%	83%	46%	14 mph	3 mph	0 mph	29.91 in	29.86 in	29.81 in	0.07 in
21	66.2 °F	60.5 °F	54.9 °F	58.5 °F	54.2 °F	47.9 °F	99%	86%	53%	10 mph	2 mph	0 mph	29.94 in	29.91 in	29.87 in	0.04 in
22	66 °F	55.5 °F	45 °F	53 °F	45.6 °F	39.9 °F	96%	73%	40%	18 mph	6 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
23	71.8 °F	58.6 °F	45.3 °F	51.1 °F	43.5 °F	37.2 °F	87%	62%	40%	15 mph	5 mph	0 mph	30.06 in	30.01 in	29.97 in	0 in
24	74.1 °F	63 °F	52 °F	54.3 °F	45.9 °F	39.7 °F	92%	62%	40%	19 mph	6 mph	0 mph	30.02 in	29.93 in	29.84 in	0 in
25	72.7 °F	61.1 °F	49.5 °F	53.9 °F	49.6 °F	46.6 °F	95%	76%	48%	17 mph	6 mph	0 mph	29.87 in	29.77 in	29.67 in	0 in
26	76.6 °F	62.8 °F	48.9 °F	55.2 °F	49.2 °F	44.3 °F	95%	71%	35%	14 mph	5 mph	0 mph	29.77 in	29.73 in	29.69 in	0 in
27	73.6 °F	60.8 °F	48 °F	57.7 °F	50.2 °F	45.9 °F	99%	79%	51%	14 mph	4 mph	0 mph	29.85 in	29.81 in	29.77 in	0 in
28	59.5 °F	50 °F	40.6 °F	47.9 °F	43.2 °F	37 °F	97%	78%	56%	24 mph	6 mph	0 mph	29.78 in	29.72 in	29.65 in	0 in
29	60.6 °F	49.8 °F	39 °F	46.2 °F	41.9 °F	35.5 °F	91%	76%	57%	14 mph	4 mph	0 mph	29.75 in	29.72 in	29.68 in	0 in
30	66.7 °F	53 °F	39.4 °F	50.5 °F	43.8 °F	37.5 °F	95%	77%	47%	16 mph	4 mph	0 mph	29.87 in	29.8 in	29.72 in	0 in
31	70.7 °F	56.2 °F	41.7 °F	52.7 °F	47.3 °F	41.2 °F	99%	78%	51%	19 mph	5 mph	0 mph	29.9 in	29.88 in	29.86 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
 Rancho De Caballo KCASANLU47

April 1, 2015 - April 30, 2015

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	Apr	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low
1	70.9 °F	58.8 °F	46.8 °F	54.8 °F	47.7 °F	41.8 °F	97%	74%	48%	14 mph	4 mph	0 mph	29.96 in	29.92 in	29.88 in	0 in
2	76.8 °F	60 °F	43.2 °F	58.1 °F	49.7 °F	42.7 °F	99%	84%	47%	7 mph	3 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
3	66.6 °F	57 °F	47.5 °F	55.3 °F	50.3 °F	47.2 °F	99%	90%	66%	9 mph	3 mph	0 mph	29.91 in	29.88 in	29.84 in	0 in
4	82.4 °F	64.7 °F	46.9 °F	57.1 °F	48.8 °F	41.7 °F	99%	67%	39%	14 mph	5 mph	0 mph	29.96 in	29.91 in	29.86 in	0 in
5	88.9 °F	69.9 °F	50.9 °F	50.9 °F	46.2 °F	41.9 °F	85%	45%	25%	19 mph	7 mph	0 mph	29.95 in	29.85 in	29.75 in	0 in
6	96.8 °F	75.9 °F	55 °F	58.6 °F	50.4 °F	44.7 °F	91%	49%	25%	21 mph	7 mph	0 mph	29.84 in	29.79 in	29.74 in	0 in
7	74.7 °F	62.7 °F	50.7 °F	56.9 °F	53.2 °F	49.9 °F	97%	81%	51%	9 mph	3 mph	0 mph	29.84 in	29.76 in	29.67 in	0 in
8	62.8 °F	58.9 °F	55 °F	58.5 °F	55.4 °F	53 °F	98%	93%	84%	5 mph	1 mph	0 mph	29.71 in	29.68 in	29.65 in	0.38 in
9	73.9 °F	64.7 °F	55.4 °F	57.2 °F	54.7 °F	53.5 °F	97%	81%	54%	8 mph	2 mph	0 mph	29.7 in	29.66 in	29.61 in	0 in
10	74.7 °F	64.1 °F	53.6 °F	56.4 °F	53.9 °F	52.2 °F	97%	85%	52%	13 mph	3 mph	0 mph	29.77 in	29.69 in	29.62 in	0 in
11	73.6 °F	62.2 °F	50.7 °F	56.3 °F	52.2 °F	48.8 °F	95%	80%	54%	11 mph	3 mph	0 mph	29.94 in	29.85 in	29.77 in	0 in
12	70.2 °F	59.8 °F	49.3 °F	56.6 °F	51 °F	47.6 °F	97%	80%	61%	12 mph	4 mph	0 mph	29.97 in	29.94 in	29.91 in	0 in
13	74.7 °F	61.2 °F	47.8 °F	53.4 °F	48.5 °F	45.2 °F	96%	75%	41%	15 mph	5 mph	0 mph	29.96 in	29.9 in	29.84 in	0 in
14	67.3 °F	55.7 °F	44.1 °F	52.9 °F	47.3 °F	41.9 °F	98%	76%	48%	14 mph	6 mph	0 mph	29.88 in	29.83 in	29.77 in	0 in
15	69.1 °F	58.3 °F	47.5 °F	50.9 °F	44.1 °F	39.1 °F	75%	60%	40%	14 mph	6 mph	0 mph	29.85 in	29.8 in	29.74 in	0 in
16	80.6 °F	66.2 °F	51.8 °F	49.4 °F	43.2 °F	37.2 °F	63%	48%	29%	14 mph	4 mph	0 mph	29.86 in	29.82 in	29.78 in	0.01 in
17	93.7 °F	74.2 °F	54.7 °F	51.1 °F	41.3 °F	34.7 °F	55%	37%	19%	9 mph	3 mph	0 mph	29.81 in	29.77 in	29.74 in	0 in
18	89.4 °F	71.9 °F	54.5 °F	51.7 °F	41 °F	30 °F	55%	37%	24%	12 mph	3 mph	0 mph	29.83 in	29.79 in	29.75 in	0 in
19	93.4 °F	74.1 °F	54.7 °F	48 °F	40.3 °F	33.4 °F	65%	42%	20%	11 mph	2 mph	0 mph	29.78 in	29.72 in	29.66 in	0 in
20	79.7 °F	64.1 °F	48.6 °F	48.9 °F	42.7 °F	34.8 °F	91%	53%	27%	12 mph	4 mph	0 mph	29.73 in	29.71 in	29.69 in	0 in
21	78.3 °F	62.5 °F	46.6 °F	57.4 °F	50.1 °F	37.7 °F	92%	72%	44%	14 mph	4 mph	0 mph	29.72 in	29.69 in	29.67 in	0 in
22	76.5 °F	62.3 °F	48.2 °F	56.7 °F	51.9 °F	45.6 °F	94%	79%	47%	17 mph	4 mph	0 mph	29.89 in	29.8 in	29.7 in	0.11 in
23	69.3 °F	59.2 °F	49.1 °F	52.9 °F	47.2 °F	42.2 °F	92%	69%	46%	16 mph	6 mph	0 mph	29.96 in	29.9 in	29.85 in	0 in
24	70.9 °F	58.3 °F	45.7 °F	53.4 °F	47.7 °F	41.4 °F	90%	71%	50%	18 mph	6 mph	0 mph	29.85 in	29.78 in	29.71 in	0 in
25	67.6 °F	54 °F	40.5 °F	47.2 °F	42.5 °F	36.8 °F	89%	71%	45%	17 mph	5 mph	0 mph	29.81 in	29.76 in	29.7 in	0 in
26	69.3 °F	55.5 °F	41.7 °F	49 °F	44.8 °F	40.2 °F	95%	75%	44%	15 mph	5 mph	0 mph	29.85 in	29.82 in	29.79 in	0 in
27	70.2 °F	56.9 °F	43.7 °F	53.4 °F	44.3 °F	37.2 °F	95%	73%	42%	19 mph	7 mph	0 mph	29.81 in	29.71 in	29.61 in	0 in
28	64 °F	53 °F	41.9 °F	50.3 °F	45.9 °F	40.2 °F	96%	80%	59%	17 mph	4 mph	0 mph	29.76 in	29.71 in	29.66 in	0 in
29	70.5 °F	58.7 °F	46.8 °F	53 °F	48.1 °F	45.4 °F	96%	82%	54%	11 mph	4 mph	0 mph	29.86 in	29.78 in	29.71 in	0 in
30	75.9 °F	60.2 °F	44.6 °F	51.2 °F	47.3 °F	42.4 °F	93%	68%	38%	14 mph	4 mph	0 mph	29.7 in	29.63 in	29.56 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo KCASANLU47  
May 1, 2015 - May 31, 2015

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
May	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	81 °F	65.8 °F	50.7 °F	56.1 °F	49.5 °F	42.1 °F	93%	67%	39%	13 mph	4 mph	0 mph	29.76 in	29.67 in	29.59 in	0 in
2	71.2 °F	61.1 °F	51.1 °F	55.7 °F	52 °F	48.8 °F	94%	81%	57%	8 mph	4 mph	0 mph	29.84 in	29.8 in	29.76 in	0 in
3	78.3 °F	64.1 °F	49.8 °F	58.9 °F	52.2 °F	49 °F	98%	82%	51%	11 mph	4 mph	0 mph	29.77 in	29.73 in	29.68 in	0 in
4	72.3 °F	61.6 °F	50.9 °F	54.7 °F	51.2 °F	48.9 °F	96%	81%	53%	10 mph	3 mph	0 mph	29.74 in	29.7 in	29.66 in	0 in
5	73.2 °F	63.6 °F	54.1 °F	53.4 °F	51.1 °F	49.4 °F	89%	74%	46%	8 mph	3 mph	0 mph	29.71 in	29.67 in	29.62 in	0 in
6	74.8 °F	62.4 °F	50 °F	54.3 °F	51 °F	48.5 °F	95%	78%	49%	14 mph	4 mph	0 mph	29.69 in	29.65 in	29.61 in	0 in
7	76.3 °F	63.8 °F	51.3 °F	53.4 °F	50.2 °F	48 °F	93%	73%	43%	11 mph	4 mph	0 mph	29.76 in	29.72 in	29.68 in	0 in
8	71.1 °F	59.4 °F	47.7 °F	54.8 °F	50.8 °F	46.1 °F	95%	77%	56%	14 mph	5 mph	0 mph	29.77 in	29.74 in	29.71 in	0 in
9	70.5 °F	61.8 °F	53.2 °F	55.3 °F	51.2 °F	49.3 °F	88%	76%	58%	15 mph	5 mph	0 mph	29.76 in	29.74 in	29.72 in	0 in
10	72.9 °F	62.6 °F	52.3 °F	55.4 °F	51.5 °F	49.1 °F	92%	75%	54%	13 mph	4 mph	0 mph	29.79 in	29.76 in	29.73 in	0 in
11	64.8 °F	59 °F	53.1 °F	53.2 °F	51.4 °F	50.6 °F	93%	83%	66%	10 mph	5 mph	0 mph	29.81 in	29.79 in	29.77 in	0 in
12	70.7 °F	61.5 °F	52.3 °F	52.3 °F	52.8 °F	51.1 °F	97%	84%	59%	13 mph	5 mph	0 mph	29.86 in	29.81 in	29.76 in	0 in
13	68.4 °F	59.9 °F	51.4 °F	53.9 °F	51.3 °F	47.6 °F	97%	82%	59%	11 mph	4 mph	0 mph	29.82 in	29.79 in	29.76 in	0 in
14	71.2 °F	59.5 °F	47.8 °F	55.7 °F	51.8 °F	46.4 °F	95%	77%	54%	17 mph	6 mph	0 mph	29.82 in	29.77 in	29.72 in	0 in
15	56.1 °F	54.4 °F	52.7 °F	52.9 °F	52.2 °F	50.6 °F	97%	94%	89%	6 mph	3 mph	0 mph	29.74 in	29.72 in	29.7 in	0 in
16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17	82 °F	67.1 °F	52.2 °F	59.8 °F	54.8 °F	50 °F	93%	65%	47%	9 mph	4 mph	0 mph	29.74 in	29.7 in	29.66 in	0 in
18	79 °F	65.2 °F	51.3 °F	58.8 °F	53.9 °F	49.6 °F	96%	76%	49%	10 mph	4 mph	0 mph	29.78 in	29.73 in	29.68 in	0 in
19	72.3 °F	62.2 °F	52 °F	54.8 °F	50.7 °F	46.5 °F	97%	82%	53%	14 mph	4 mph	0 mph	29.74 in	29.69 in	29.64 in	0 in
20	66 °F	57.3 °F	48.7 °F	48.6 °F	46.5 °F	44.4 °F	86%	71%	53%	17 mph	7 mph	0 mph	29.75 in	29.69 in	29.62 in	0 in
21	64.4 °F	54 °F	43.5 °F	50.3 °F	46 °F	41.6 °F	94%	81%	56%	17 mph	4 mph	0 mph	29.86 in	29.81 in	29.75 in	0 in
22	70.3 °F	57.8 °F	45.3 °F	51.3 °F	47.6 °F	43.7 °F	96%	74%	43%	16 mph	6 mph	0 mph	29.89 in	29.83 in	29.77 in	0 in
23	69.3 °F	57.7 °F	46 °F	51.3 °F	48.7 °F	44.6 °F	95%	74%	50%	14 mph	6 mph	0 mph	29.8 in	29.74 in	29.67 in	0 in
24	68.4 °F	60.5 °F	52.5 °F	53.4 °F	51 °F	48.1 °F	95%	78%	57%	16 mph	4 mph	0 mph	29.84 in	29.77 in	29.7 in	0.01 in
25	67.5 °F	60.5 °F	53.6 °F	53.3 °F	50.6 °F	48.7 °F	86%	75%	58%	15 mph	6 mph	0 mph	29.91 in	29.87 in	29.83 in	0 in
26	66.9 °F	57.2 °F	47.5 °F	53 °F	50.2 °F	46.1 °F	97%	77%	60%	14 mph	5 mph	0 mph	29.9 in	29.83 in	29.77 in	0 in
27	72.1 °F	61.4 °F	50.7 °F	55.4 °F	51.5 °F	47.3 °F	91%	75%	55%	12 mph	4 mph	0 mph	29.78 in	29.69 in	29.61 in	0 in
28	77.7 °F	64.2 °F	50.7 °F	57.6 °F	52.8 °F	48.9 °F	95%	76%	50%	13 mph	5 mph	0 mph	29.71 in	29.65 in	29.58 in	0 in
29	73 °F	63.7 °F	54.3 °F	57.1 °F	53.3 °F	51.5 °F	93%	80%	57%	11 mph	3 mph	0 mph	29.81 in	29.76 in	29.71 in	0 in
30	75.6 °F	64.2 °F	52.9 °F	57.8 °F	52.9 °F	50.2 °F	93%	77%	53%	11 mph	4 mph	0 mph	29.81 in	29.75 in	29.69 in	0 in
31	77.5 °F	64.1 °F	50.7 °F	58.4 °F	53.3 °F	49.6 °F	98%	77%	51%	11 mph	4 mph	0 mph	29.69 in	29.65 in	29.6 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
 Rancho De Caballo KCASANLU47  
 June 1, 2015 - June 30, 2015

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
Jun	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	76.6 °F	64.7 °F	52.7 °F	58.6 °F	53.9 °F	50.7 °F	96%	79%	53%	14 mph	4 mph	0 mph	29.72 in	29.67 in	29.63 in	0 in
2	82.8 °F	67.2 °F	51.6 °F	58.9 °F	54.1 °F	49.7 °F	97%	76%	44%	9 mph	3 mph	0 mph	29.79 in	29.75 in	29.7 in	0 in
3	94.1 °F	71.3 °F	48.6 °F	63 °F	55.2 °F	47.5 °F	98%	66%	36%	8 mph	3 mph	0 mph	29.75 in	29.69 in	29.64 in	0 in
4	99.1 °F	75.4 °F	51.8 °F	62.5 °F	54.3 °F	49 °F	95%	67%	21%	10 mph	4 mph	0 mph	29.73 in	29.68 in	29.64 in	0 in
5	77 °F	64.2 °F	51.3 °F	58.2 °F	53.9 °F	50.8 °F	98%	77%	52%	11 mph	4 mph	0 mph	29.7 in	29.66 in	29.62 in	0 in
6	78.3 °F	65.7 °F	53.1 °F	57.7 °F	53.5 °F	51.2 °F	95%	78%	49%	11 mph	4 mph	0 mph	29.67 in	29.63 in	29.59 in	0 in
7	76.1 °F	64.6 °F	53.1 °F	58.4 °F	54.3 °F	51.8 °F	98%	81%	54%	13 mph	5 mph	0 mph	29.71 in	29.68 in	29.65 in	0 in
8	72.9 °F	63.3 °F	53.8 °F	57 °F	54.1 °F	50.3 °F	96%	79%	57%	14 mph	6 mph	0 mph	29.7 in	29.67 in	29.64 in	0 in
9	72.7 °F	62.5 °F	52.3 °F	56.4 °F	53.1 °F	51.2 °F	98%	79%	56%	12 mph	5 mph	0 mph	29.74 in	29.7 in	29.66 in	0 in
10	80.2 °F	66.7 °F	53.2 °F	58.8 °F	53.1 °F	48.2 °F	92%	73%	48%	10 mph	4 mph	0 mph	29.77 in	29.71 in	29.65 in	0 in
11	79 °F	64.9 °F	50.9 °F	60.4 °F	53.3 °F	47.9 °F	91%	74%	53%	10 mph	4 mph	0 mph	29.76 in	29.71 in	29.66 in	0 in
12	76.5 °F	65.2 °F	54 °F	58.6 °F	54.3 °F	50.8 °F	89%	70%	54%	15 mph	4 mph	0 mph	29.87 in	29.81 in	29.75 in	0 in
13	72.5 °F	62.8 °F	53.2 °F	57.2 °F	53.2 °F	50.6 °F	92%	77%	58%	12 mph	4 mph	0 mph	29.91 in	29.86 in	29.82 in	0 in
14	71.8 °F	59.9 °F	48 °F	53.2 °F	50 °F	46.4 °F	97%	73%	47%	14 mph	5 mph	0 mph	29.82 in	29.76 in	29.71 in	0 in
15	70 °F	57.8 °F	45.7 °F	50.1 °F	47.7 °F	44.1 °F	94%	73%	47%	18 mph	6 mph	0 mph	29.86 in	29.79 in	29.72 in	0 in
16	76.8 °F	61.9 °F	46.9 °F	54.2 °F	49 °F	42.6 °F	93%	67%	36%	18 mph	6 mph	0 mph	29.86 in	29.83 in	29.8 in	0 in
17	79.9 °F	65.6 °F	51.3 °F	58.7 °F	54.5 °F	49.3 °F	95%	76%	46%	16 mph	5 mph	0 mph	29.87 in	29.83 in	29.8 in	0 in
18	82 °F	68.1 °F	54.1 °F	60.3 °F	55.5 °F	50.2 °F	98%	72%	48%	16 mph	5 mph	0 mph	29.88 in	29.84 in	29.8 in	0 in
19	91.2 °F	72.6 °F	54.1 °F	58.1 °F	53.8 °F	49.7 °F	86%	56%	32%	16 mph	7 mph	0 mph	29.82 in	29.74 in	29.66 in	0 in
20	92.3 °F	74.8 °F	57.2 °F	58.4 °F	53.1 °F	49.3 °F	77%	51%	28%	19 mph	7 mph	0 mph	29.74 in	29.68 in	29.63 in	0 in
21	91.6 °F	74.1 °F	56.5 °F	56.3 °F	50.8 °F	41 °F	77%	49%	19%	12 mph	6 mph	0 mph	29.75 in	29.7 in	29.65 in	0 in
22	83.1 °F	67.1 °F	51.1 °F	58.3 °F	53 °F	48.3 °F	90%	66%	42%	10 mph	4 mph	0 mph	29.75 in	29.72 in	29.68 in	0 in
23	98.2 °F	73.6 °F	48.9 °F	51.8 °F	47.4 °F	36.8 °F	95%	52%	12%	15 mph	5 mph	0 mph	29.77 in	29.73 in	29.69 in	0 in
24	80.1 °F	65.9 °F	51.8 °F	55.2 °F	50.7 °F	46.7 °F	86%	63%	40%	12 mph	6 mph	0 mph	29.78 in	29.73 in	29.68 in	0 in
25	95.9 °F	73.8 °F	51.8 °F	54.9 °F	49.9 °F	46.7 °F	87%	60%	20%	11 mph	5 mph	0 mph	29.71 in	29.65 in	29.6 in	0 in
26	95.9 °F	75.8 °F	55.6 °F	57.3 °F	51.8 °F	47.3 °F	81%	50%	25%	14 mph	6 mph	0 mph	29.68 in	29.65 in	29.62 in	0 in
27	98.8 °F	80 °F	61.2 °F	57.5 °F	52.4 °F	46 °F	70%	41%	21%	12 mph	5 mph	0 mph	29.7 in	29.66 in	29.61 in	0 in
28	95.9 °F	74.8 °F	53.8 °F	62.2 °F	55.3 °F	49.7 °F	86%	55%	33%	10 mph	4 mph	0 mph	29.73 in	29.68 in	29.64 in	0 in
29	77.2 °F	64.4 °F	51.6 °F	57.1 °F	52.6 °F	48.8 °F	92%	72%	49%	12 mph	4 mph	0 mph	29.72 in	29.69 in	29.66 in	0 in
30	77.4 °F	63.8 °F	50.2 °F	56.2 °F	51.8 °F	49.1 °F	97%	77%	48%	9 mph	4 mph	0 mph	29.72 in	29.67 in	29.61 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo KCASANLU47  
July 1, 2015 - July 31, 2015

2016 Jul	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	77.5 °F	64.9 °F	52.3 °F	57.9 °F	53.5 °F	49.8 °F	92%	73%	50%	11 mph	4 mph	0 mph	29.72 in	29.67 in	29.63 in	0 in
2	77.9 °F	66.4 °F	54.9 °F	60.9 °F	56 °F	51.2 °F	94%	76%	56%	13 mph	3 mph	0 mph	29.79 in	29.75 in	29.7 in	0 in
3	77 °F	65.1 °F	53.1 °F	59.7 °F	54.4 °F	50.1 °F	96%	76%	52%	11 mph	4 mph	0 mph	29.86 in	29.82 in	29.77 in	0 in
4	73.4 °F	62 °F	50.5 °F	58.2 °F	53.7 °F	48.6 °F	94%	77%	59%	12 mph	4 mph	0 mph	29.85 in	29.81 in	29.76 in	0 in
5	75.9 °F	65.4 °F	54.9 °F	57.5 °F	53.6 °F	51.7 °F	90%	77%	53%	12 mph	4 mph	0 mph	29.83 in	29.78 in	29.73 in	0 in
6	75.9 °F	64.6 °F	53.2 °F	57 °F	53.3 °F	51.2 °F	94%	78%	52%	11 mph	4 mph	0 mph	29.82 in	29.77 in	29.73 in	0 in
7	73.4 °F	63.5 °F	53.6 °F	57.3 °F	53.6 °F	51.3 °F	93%	79%	57%	11 mph	4 mph	0 mph	29.79 in	29.76 in	29.72 in	0 in
8	77.4 °F	65.1 °F	52.7 °F	58.2 °F	54 °F	51.5 °F	96%	79%	51%	10 mph	4 mph	0 mph	29.8 in	29.77 in	29.74 in	0 in
9	88.9 °F	70.7 °F	52.5 °F	60.7 °F	54.9 °F	50.8 °F	95%	72%	37%	13 mph	5 mph	0 mph	29.82 in	29.78 in	29.75 in	0 in
10	80.8 °F	65.9 °F	51.1 °F	55.1 °F	50.6 °F	41.4 °F	90%	67%	25%	14 mph	6 mph	0 mph	29.8 in	29.74 in	29.68 in	0 in
11	73.9 °F	61.8 °F	49.8 °F	55.5 °F	52 °F	48.4 °F	95%	75%	52%	12 mph	6 mph	0 mph	29.71 in	29.67 in	29.62 in	0 in
12	82.4 °F	67 °F	51.6 °F	56.9 °F	52.7 °F	49.3 °F	95%	70%	38%	10 mph	4 mph	0 mph	29.75 in	29.7 in	29.65 in	0 in
13	78.1 °F	64.2 °F	50.2 °F	58 °F	53.1 °F	48 °F	92%	73%	49%	12 mph	4 mph	0 mph	29.79 in	29.74 in	29.69 in	0 in
14	88.2 °F	70.3 °F	52.5 °F	60 °F	53.9 °F	50.4 °F	94%	73%	38%	10 mph	4 mph	0 mph	29.81 in	29.76 in	29.7 in	0 in
15	82.6 °F	66.8 °F	51.1 °F	59.1 °F	53.5 °F	49 °F	97%	74%	45%	9 mph	4 mph	0 mph	29.77 in	29.72 in	29.66 in	0 in
16	77.9 °F	65.1 °F	52.3 °F	58 °F	53.4 °F	48.9 °F	90%	75%	50%	10 mph	4 mph	0 mph	29.74 in	29.69 in	29.65 in	0 in
17	76.1 °F	64.4 °F	52.7 °F	58.2 °F	53.9 °F	50.9 °F	95%	77%	53%	10 mph	4 mph	0 mph	29.78 in	29.73 in	29.67 in	0 in
18	81.5 °F	67.3 °F	53.2 °F	58.6 °F	54.1 °F	50.4 °F	92%	74%	45%	11 mph	4 mph	0 mph	29.84 in	29.8 in	29.76 in	0 in
19	79.3 °F	64.7 °F	50 °F	58.9 °F	53.7 °F	48.6 °F	97%	76%	49%	10 mph	3 mph	0 mph	29.84 in	29.8 in	29.76 in	0 in
20	84.2 °F	67.6 °F	51.1 °F	58.6 °F	53.2 °F	48.5 °F	94%	68%	39%	10 mph	3 mph	0 mph	29.8 in	29.76 in	29.72 in	0 in
21	85.6 °F	68.7 °F	51.8 °F	57.7 °F	53.2 °F	49.7 °F	97%	71%	34%	11 mph	5 mph	0 mph	30.05 in	29.9 in	29.75 in	0 in
22	90.1 °F	72.6 °F	55 °F	57.9 °F	52.9 °F	49.2 °F	84%	57%	29%	17 mph	6 mph	0 mph	30.03 in	29.98 in	29.92 in	0 in
23	88.7 °F	71.5 °F	54.3 °F	57.1 °F	52.1 °F	45.6 °F	85%	58%	26%	14 mph	6 mph	0 mph	29.98 in	29.88 in	29.78 in	0 in
24	89.2 °F	71.3 °F	53.4 °F	59.6 °F	54.4 °F	49.3 °F	87%	64%	37%	8 mph	4 mph	0 mph	29.92 in	29.87 in	29.82 in	0 in
25	84.2 °F	66.4 °F	48.7 °F	60 °F	53.3 °F	47.2 °F	97%	72%	44%	9 mph	3 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
26	88.2 °F	68.6 °F	49.1 °F	60.1 °F	54.1 °F	47.4 °F	96%	65%	37%	12 mph	3 mph	0 mph	29.94 in	29.89 in	29.84 in	0 in
27	92.1 °F	73.8 °F	55.4 °F	59.5 °F	54.6 °F	50.5 °F	84%	62%	33%	9 mph	3 mph	0 mph	29.92 in	29.89 in	29.85 in	0 in
28	84.4 °F	68.6 °F	52.7 °F	60.1 °F	54.9 °F	51.2 °F	96%	72%	44%	10 mph	4 mph	0 mph	29.93 in	29.88 in	29.83 in	0 in
29	85.3 °F	69.4 °F	53.6 °F	60.2 °F	55.3 °F	52.3 °F	96%	75%	43%	8 mph	3 mph	0 mph	29.88 in	29.83 in	29.79 in	0 in
30	88.3 °F	71.1 °F	53.8 °F	61.7 °F	56.5 °F	52.3 °F	95%	72%	39%	10 mph	4 mph	0 mph	29.87 in	29.83 in	29.78 in	0 in
31	85.8 °F	70.9 °F	55.9 °F	63.8 °F	58.2 °F	53.6 °F	95%	75%	48%	12 mph	4 mph	0 mph	29.92 in	29.88 in	29.83 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo **KCASANLU47**  
**August 1, 2015 - August 31, 2015**

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
Aug	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	84.9 °F	70.7 °F	56.5 °F	63.1 °F	58.1 °F	54.8 °F	94%	76%	47%	10 mph	3 mph	0 mph	30 in	29.94 in	29.89 in	0 in
2	80.8 °F	68.8 °F	56.8 °F	61 °F	57.2 °F	54.1 °F	96%	78%	51%	9 mph	4 mph	0 mph	30.03 in	29.99 in	29.94 in	0 in
3	82.8 °F	69.4 °F	56.1 °F	61.7 °F	56.3 °F	53.5 °F	92%	76%	49%	9 mph	4 mph	0 mph	30.02 in	29.97 in	29.92 in	0 in
4	75.6 °F	65.7 °F	55.8 °F	59.3 °F	55.3 °F	53.2 °F	93%	80%	57%	11 mph	4 mph	0 mph	30 in	29.94 in	29.89 in	0 in
5	71.4 °F	63.5 °F	55.6 °F	57.9 °F	54.2 °F	52.2 °F	90%	80%	60%	11 mph	4 mph	0 mph	29.99 in	29.94 in	29.89 in	0 in
6	74.3 °F	64.5 °F	54.7 °F	58.4 °F	54.4 °F	51.7 °F	90%	79%	57%	13 mph	4 mph	0 mph	29.94 in	29.89 in	29.84 in	0 in
7	74.8 °F	64 °F	53.1 °F	57.2 °F	53.8 °F	50.2 °F	95%	77%	53%	12 mph	5 mph	0 mph	29.9 in	29.85 in	29.81 in	0 in
8	82.9 °F	67.7 °F	52.5 °F	59.4 °F	54.4 °F	49.7 °F	98%	79%	45%	10 mph	3 mph	0 mph	29.89 in	29.74 in	29.58 in	0 in
9	79.5 °F	65.8 °F	52 °F	58.6 °F	54.3 °F	49.7 °F	96%	82%	49%	11 mph	4 mph	0 mph	29.94 in	29.81 in	29.67 in	0 in
10	81.9 °F	68.9 °F	55.9 °F	59.7 °F	54.7 °F	52 °F	88%	75%	47%	10 mph	4 mph	0 mph	29.96 in	29.82 in	29.68 in	0 in
11	81 °F	68 °F	55 °F	60.1 °F	55.5 °F	51.8 °F	93%	76%	49%	10 mph	4 mph	0 mph	30.05 in	29.88 in	29.72 in	0 in
12	78.6 °F	66 °F	53.4 °F	60.5 °F	55.5 °F	52.3 °F	97%	80%	54%	9 mph	3 mph	0 mph	30.07 in	29.94 in	29.82 in	0 in
13	82.4 °F	68.4 °F	54.5 °F	60.9 °F	56.5 °F	53.7 °F	97%	78%	48%	10 mph	4 mph	0 mph	29.99 in	29.83 in	29.66 in	0 in
14	86 °F	70.2 °F	54.3 °F	61.6 °F	56.5 °F	53.5 °F	98%	78%	44%	12 mph	4 mph	0 mph	29.92 in	29.8 in	29.67 in	0 in
15	76.6 °F	65 °F	53.4 °F	59.6 °F	55.5 °F	52.8 °F	99%	83%	55%	11 mph	4 mph	0 mph	29.97 in	29.83 in	29.69 in	0 in
16	77.7 °F	65.3 °F	52.9 °F	58.9 °F	54.8 °F	52.4 °F	98%	81%	52%	9 mph	3 mph	0 mph	29.94 in	29.8 in	29.65 in	0 in
17	80.8 °F	66.9 °F	53.1 °F	59.3 °F	55.1 °F	51.2 °F	97%	77%	48%	9 mph	3 mph	0 mph	29.91 in	29.76 in	29.62 in	0 in
18	86.5 °F	69.9 °F	53.4 °F	59.3 °F	54.7 °F	52.1 °F	96%	78%	40%	9 mph	3 mph	0 mph	29.92 in	29.76 in	29.61 in	0 in
19	76.5 °F	65.6 °F	54.7 °F	59.2 °F	54.9 °F	52 °F	93%	80%	55%	10 mph	2 mph	0 mph	29.96 in	29.92 in	29.88 in	0 in
20	75 °F	64.9 °F	54.9 °F	59.1 °F	55.4 °F	53.6 °F	96%	83%	57%	11 mph	4 mph	0 mph	29.99 in	29.93 in	29.88 in	0 in
21	75 °F	64.8 °F	54.7 °F	59.3 °F	55.6 °F	52.5 °F	97%	82%	58%	10 mph	4 mph	0 mph	29.96 in	29.92 in	29.89 in	0 in
22	75.7 °F	65.6 °F	55.6 °F	59.9 °F	56.1 °F	53.6 °F	93%	82%	58%	10 mph	4 mph	0 mph	29.99 in	29.95 in	29.91 in	0 in
23	72.9 °F	64.3 °F	55.8 °F	59.2 °F	56 °F	54.1 °F	94%	81%	61%	11 mph	5 mph	0 mph	30.09 in	30.03 in	29.98 in	0 in
24	72 °F	63.5 °F	55 °F	59.1 °F	55.4 °F	53.7 °F	97%	85%	63%	12 mph	5 mph	0 mph	30.11 in	30.04 in	29.97 in	0 in
25	74.8 °F	64.7 °F	54.5 °F	58.7 °F	55.1 °F	52.7 °F	96%	81%	57%	12 mph	4 mph	0 mph	29.99 in	29.94 in	29.9 in	0 in
26	77.4 °F	66.7 °F	55.9 °F	58.9 °F	55.4 °F	52.7 °F	90%	79%	53%	10 mph	4 mph	0 mph	30.01 in	29.96 in	29.91 in	0 in
27	73.2 °F	64.2 °F	55.2 °F	59.4 °F	55.7 °F	52.5 °F	91%	77%	61%	14 mph	5 mph	0 mph	30.03 in	29.99 in	29.96 in	0 in
28	75.7 °F	65 °F	54.3 °F	59.9 °F	56 °F	52.3 °F	94%	79%	58%	11 mph	4 mph	0 mph	30.07 in	30.03 in	30 in	0 in
29	83.5 °F	68.8 °F	54.1 °F	61.1 °F	56 °F	52.3 °F	97%	77%	46%	14 mph	5 mph	0 mph	30.04 in	29.97 in	29.9 in	0 in
30	96.6 °F	76.3 °F	56.1 °F	57.8 °F	54.3 °F	51.5 °F	87%	64%	26%	15 mph	6 mph	0 mph	29.93 in	29.88 in	29.82 in	0 in
31	81 °F	66.5 °F	52 °F	59.6 °F	55.2 °F	50.3 °F	95%	75%	48%	11 mph	4 mph	0 mph	29.91 in	29.88 in	29.85 in	0 in

Weather History for San Luis Obispo, CA [KCASANLU47]  
Rancho De Caballo **KCASANLU47**  
**September 1, 2015 - September 29, 2015**

2016	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Accum.
Sep	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	74.7 °F	62.8 °F	50.9 °F	58.9 °F	54.3 °F	50.1 °F	98%	83%	58%	11 mph	3 mph	0 mph	29.98 in	29.93 in	29.89 in	0 in
2	78.6 °F	64.9 °F	51.3 °F	58.6 °F	54.3 °F	49.3 °F	96%	78%	49%	11 mph	4 mph	0 mph	29.97 in	29.92 in	29.86 in	0 in
3	72 °F	62.7 °F	53.4 °F	59.2 °F	54.1 °F	52 °F	96%	86%	64%	11 mph	4 mph	0 mph	29.94 in	29.9 in	29.85 in	0 in
4	71.6 °F	62 °F	52.5 °F	55.9 °F	52.7 °F	49.3 °F	89%	75%	53%	14 mph	4 mph	0 mph	29.92 in	29.88 in	29.84 in	0 in
5	72 °F	60.7 °F	49.3 °F	55.9 °F	52 °F	46.7 °F	95%	80%	57%	18 mph	4 mph	0 mph	29.87 in	29.83 in	29.79 in	0 in
6	90 °F	70.1 °F	50.2 °F	58.9 °F	52.7 °F	47.6 °F	97%	65%	35%	14 mph	4 mph	0 mph	29.86 in	29.83 in	29.79 in	0 in
7	87.6 °F	69.9 °F	52.2 °F	61.8 °F	56.3 °F	49.1 °F	94%	74%	41%	12 mph	4 mph	0 mph	30.05 in	29.93 in	29.81 in	0 in
8	77.7 °F	67.1 °F	56.5 °F	61.8 °F	57.6 °F	53.2 °F	93%	79%	57%	11 mph	3 mph	0 mph	30.11 in	30.05 in	29.99 in	0 in
9	75.4 °F	64.1 °F	52.7 °F	60.5 °F	56.1 °F	51.3 °F	96%	81%	60%	10 mph	4 mph	0 mph	30.05 in	30.01 in	29.98 in	0 in
10	75.6 °F	65.3 °F	55 °F	60.2 °F	56.1 °F	53.8 °F	97%	84%	58%	9 mph	3 mph	0 mph	30.07 in	30.03 in	30 in	0 in
11	73.4 °F	64.2 °F	54.9 °F	59.1 °F	55.4 °F	53.3 °F	97%	84%	61%	9 mph	3 mph	0 mph	30.12 in	30.05 in	29.98 in	0 in
12	76.8 °F	66.4 °F	56.1 °F	58 °F	53.8 °F	50.2 °F	90%	78%	51%	12 mph	4 mph	0 mph	30 in	29.94 in	29.89 in	0 in
13	72.9 °F	62.2 °F	51.6 °F	51 °F	48.9 °F	46.8 °F	85%	65%	42%	12 mph	4 mph	0 mph	30.04 in	29.97 in	29.9 in	0 in
14	76.6 °F	62.5 °F	48.4 °F	55.3 °F	50.8 °F	44.4 °F	91%	69%	43%	12 mph	4 mph	0 mph	30.1 in	30.06 in	30.02 in	0 in
15	87.3 °F	69.9 °F	52.5 °F	58.1 °F	54.7 °F	50.6 °F	95%	66%	33%	14 mph	5 mph	0 mph	30.05 in	29.99 in	29.93 in	0 in
16	76.8 °F	64.4 °F	52 °F	60 °F	55 °F	51.5 °F	99%	81%	52%	12 mph	4 mph	0 mph	29.96 in	29.93 in	29.9 in	0 in
17	85.3 °F	68.9 °F	52.5 °F	60.5 °F	55.3 °F	51.7 °F	99%	74%	40%	14 mph	4 mph	0 mph	29.98 in	29.93 in	29.88 in	0 in
18	103.1 °F	79 °F	54.9 °F	58.4 °F	51.3 °F	46.5 °F	93%	43%	17%	12 mph	5 mph	0 mph	29.92 in	29.87 in	29.82 in	0 in
19	92.8 °F	75.2 °F	57.7 °F	61 °F	56.8 °F	46.9 °F	84%	61%	31%	9 mph	4 mph	0 mph	30.03 in	29.95 in	29.87 in	0 in
20	86.5 °F	71.8 °F	57 °F	59.9 °F	54.8 °F	42.8 °F	93%	61%	38%	11 mph	3 mph	0 mph	30.01 in	29.94 in	29.87 in	0 in
21	72.7 °F	62 °F	51.4 °F	59.4 °F	54.9 °F	48.9 °F	98%	84%	61%	12 mph	4 mph	0 mph	29.95 in	29.92 in	29.88 in	0 in
22	69.4 °F	58.6 °F	47.7 °F	55.2 °F	49.3 °F	42.2 °F	96%	73%	46%	15 mph	5 mph	0 mph	30.07 in	29.99 in	29.92 in	0 in
23	79.9 °F	64.5 °F	50.5 °F	53.7 °F	48.1 °F	41.2 °F	83%	58%	28%	14 mph	4 mph	0 mph	30.12 in	30.08 in	30.04 in	0 in
24	92.5 °F	76.6 °F	64.8 °F	53.7 °F	46.2 °F	40.9 °F	45%	35%	21%	11 mph	5 mph	0 mph	30.07 in	30.01 in	29.94 in	0 in
25	105.6 °F	83.6 °F	67.5 °F	52.4 °F	45.6 °F	38.6 °F	44%	28%	14%	10 mph	3 mph	0 mph	30.02 in	29.96 in	29.9 in	0 in
26	109.6 °F	83.7 °F	68.2 °F	46 °F	40.8 °F	36.6 °F	35%	23%	12%	12 mph	4 mph	0 mph	29.96 in	29.78 in	29.61 in	0 in
27	104.9 °F	81.5 °F	59.7 °F	53.2 °F	44.8 °F	36.4 °F	77%	32%	13%	14 mph	4 mph	0 mph	29.66 in	29.58 in	29.5 in	0 in
28	94.6 °F	68.5 °F	52.2 °F	60.2 °F	53 °F	47.8 °F	92%	63%	27%	7 mph	2 mph	0 mph	29.77 in	29.7 in	29.64 in	0 in
29	78.1 °F	63.2 °F	48.4 °F	58.5 °F	50.9 °F	47.9 °F	98%	90%	51%	4 mph	1 mph	0 mph	29.85 in	29.81 in	29.76 in	0 in

**MATERIAL SAFETY**  
**DATA SHEET**

**CHEMGUARD 3% AFFF C-303**

Revision Date: 1/25/2006

**1. PRODUCT IDENTIFICATION**

Chemical Family: Surfactant mixture; fire fighting foam concentrate  
*Aqueous Film Forming Foam*

Product name: Chemguard 3% AFFF C-303

Manufacturer: Chemguard, Inc.  
204 South 6th Ave.  
Mansfield, TX 76063  
emergency phone: 817-473-9964

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

<u>CAS NO.</u>	<u>Common Name</u>	<u>ACGIH/PPM</u>		<u>OSHA/PPM</u>	<u>% by wt</u>
		<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	
7732-18-5	water				85% - 90%
57018-52-7	propylene glycol t-butyl ether	not established			2% - 4%
7487-88-9	magnesium sulfate	N/A	N/A	N/A	1% - 2%
proprietary mixture	proprietary hydrocarbon surfactant	N/A	N/A	N/A	proprietary
proprietary mixture	proprietary fluorosurfactant	N/A	N/A	N/A	proprietary

**3. HAZARDS IDENTIFICATION**

Routes of entry: Dermal, inhalation and ingestion  
Potential Health Effects: May cause skin and eye irritation.

Carcinogenicity: Not a carcinogen.

**4. FIRST AID MEASURES**

Ingestion: Do not induce vomiting. Call a physician.

Inhalation: Remove to fresh air.

Skin: Rinse with water. Wash with soap and water. Contaminated clothing should be washed before re-use.

Eyes: Rinse with water. Call a physician.

## **5. FIRE FIGHTING MEASURES**

Flash Point:	>150°F
Flammable Limits in air (lower % by volume):	not evaluated
Flammable Limits in air (upper % by volume):	not evaluated
Auto-ignition Temperature:	not evaluated

General Hazards: None known.

Fire Fighting Equipment: Self contained breathing apparatus

Fire Extinguishing Media: Water, Foam, Carbon Dioxide, Dry Chemical, Halon

Fire and Explosion Hazards: Decomposition products may be toxic.

Hazardous Combustion Products: oxides of nitrogen, sulfur and carbon

## **6. ACCIDENTAL RELEASE**

Contain spills. Vacuum or pump into storage containers, absorb smaller quantities with absorbent materials, and dispose of properly. Washing area with water will create large amounts of foam.

Dispose of released and contained material in accordance with local, state, and federal regulations. Release to local waste treatment plant only with permission.

## **7. HANDLING AND STORAGE**

Store in original container, or appropriate end-use device. Store at temperatures of 35 - 120 degrees F. If the material freezes, it may be thawed without loss of performance.

## **8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

Eye Protection: Wear side-shield safety glasses.

Skin Protection: Wear latex gloves.

Respiratory Protection: Use organic vapor respirator if needed.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:	205° - 212°F
Melting Point:	30° F
Specific Gravity:	1.012 g/ml
Vapor Pressure (mm Hg):	N/A
pH	7.0 - 8.5
Flash Point (PMCC):	>150°F
Vapor Density (air = 1)	N/A
Solubility in water:	100%
Appearance:	clear amber liquid
Odor:	slight solvent odor

## **10. STABILITY AND REACTIVITY**

Stability: Stable

Incompatibility: Strong oxidizers

Hazardous Polymerization: Will not occur.

Decomposition Products: Oxides of nitrogen, sulfur, carbon.

## **11. TOXICOLOGICAL INFORMATION**

Eye Irritation: (Rabbits) mild irritant

Skin Irritation: (Rabbits) minimal irritant

Inhalation Toxicity: not evaluated

Sensitization: not evaluated

Teratology: not evaluated

Mutagenicity: not evaluated

Reproduction: not evaluated

Acute Oral Effects (Rats): not evaluated

## **12. ECOLOGICAL INFORMATION**

	<u>CONCENTRATE</u>	<u>SOLUTION (AS USED)</u>
Chemical Oxygen Demand:	210,000 mg/l	6,300 mg/l
Biological Oxygen Demand (20 day):	79,800 mg/l	2,394 mg/l
Biodegradability (B.O.D./C.O.D.):	38%	38%
Total Organic Carbon:	33,600 mg/l	1008 mg/l
LC50 (96 hour pimephales promelas)	233 ppm	7767 ppm
LC50 (48 hour, daphnia magna)	1110 ppm	37,000 ppm

## **13. DISPOSAL CONSIDERATIONS**

Dispose in accordance with local, state, and federal regulations. Discharge to waste treatment plants only with permission. Anti-foam agents may be used to reduce foaming in waste streams.

## **14. TRANSPORTATION INFORMATION**

Department of Transportation proper shipping name: not regulated

## **15. REGULATORY INFORMATION**

All ingredients are on the TSCA inventory.

No components are reportable under SARA Title III, sec. 313

No components are priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).

No components are reportable under **CERCLA**.

## **16. OTHER INFORMATION**

### **NFPA Hazard Ratings**

1

1

0

Health Hazard Rating

Flammability Rating

Instability/Reactivity Rating

### **HMIS Identification System**

1

1

0

Revision 2 - Revision date changed.

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 1/ 10

## SECTION 1: Product and Company Identification

*Trade name:* **FireAde 2000 - Fire Fighting Agent**

*Product utilisation:* As a 0.5% up to 1% additive to water used in fire-fighting, to reduce surface tension. It is suitable for use in fighting fires of class A (generally combustible substances, tested by the MPA Dresden) and class B (inflammable liquids, tested by the MPA Dresden). Particular suitable for fighting fires of organic fluids such as petrol, kerosine, alcohols etc. In order to maximise foam extinguisher the product may also be used as a 3% or 6% additive to water used in fire-fighting. As a 6% or 10% additive to water used in fire-fighting the product is also suitable to cool and extinguish alkaline-earth metal fires and fires class F (edible oil, edible fat).

*Manufacturer/Supplier:* FIRST VALUE HOLDINGS LIMITED  
Ammochostou 10, P.C. 4528 Pentacomo, Cyprus  
ph.: 00357 97760034; fax: 00357 25812491;  
e-mail: first-value@cytanet.com.cy

*Person in charge:* Mrs. Christiane Sotiriou (speaks English)  
phone, fax and e-mail as aforementioned

## SECTION 2: Hazards Identification

2.1 Classification: None

2.2 Information pertaining to particular dangers to man and the environment:

The product may cause eye and slight skin irritations. If large amounts are ingested the product may cause nausea and diarrhea. The product contains a component at a concentration of less than 0.04% which is sensitizing for the skin. At the application concentrations up to 10% of the concentrate no harmful effects are to be expected.

Not combustible. Combustible after evaporation of the water.

Low toxicity for water organisms,

## SECTION 3: Composition / Information on Ingredients

*Characterization:* Aqueous concentrate of soaps and a dihydric alcohol

*Hazardous ingredients:*

<i>Common or chemical name</i>	<i>CAS-No.</i>	<i>EINECS-No.</i>	<i>Hazard symbol</i>	<i>R-Phrases</i>	<i>Percentage by weight</i>
<b>2-Methyl-2,4-pentanediol</b>	107-41-5	203-489-0	Xi	36/38	< 8

*Synonyms: Hexlene glykol; 2,4-Pentanediol, 2-methyl-; 1,1,3-Trimethyltrimethylenediol*

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 2/ 10

<i>Common or chemical name</i>	<i>CAS-No.</i>	<i>EINECS-No.</i>	<i>Hazard symbol</i>	<i>R-Phrases</i>	<i>Percentage by weigh</i>
<b>Polyethylene glycol, nonyl, decyl, undecyl ether</b> <i>Synonyms: C9-11 Pareth-3 (-4, -5); Alkyl (C9-11), ethoxylated</i>	68439-46-3	not existent	Xn	22-36	< 2
<b>Sodium decyl sulfate</b> <i>Synonyms: Sulfuric acid, monodecyl ester, sodiumsalt</i>	142-87-0	205-568-5	Xn	22-38-41	< 0.8

Wording of R-phrases see SECTION 16

Note: The identity of the component which is sensitizing for the skin (refer to SECTION 2.2) will be disclosed on demand by a physician.

#### Other ingredients:

<i>Common or chemical name</i>	<i>CAS No.</i>	<i>EINECS No.</i>	<i>Chemical nature</i>	<i>Percentage by weight</i>
<b>Sodium octyl sulfate</b>	142-31-4	205-535-5	Soap	< 8
<b>Water</b>	7732-18-5	231-791-2	No comment	< 80

## SECTION 4: First Aid Measures

**General information:** The following information is only relevant for the product upon delivery (concentrate). At the concentrations of application up to 10% no first-aid measures are expected to be necessary.

**Inhalation of aerosols:** If irritations occur immediately move the affected person into fresh air. If symptoms persist seek medical attention. (Not relevant for vapours, because it is almost only water which evaporates.)

**Skin:** Wash skin with plenty of water and soap. Change contaminated clothing. If symptoms persist seek medical attention.

**Eyes:** Rinse with plenty of water for at least 15 minutes. Seek medical attention.

**Ingestion:** If the patient is conscious have him rinse his mouth with water, spit it out and then have him drink water. Seek medical attention. Occurance of symptoms may be delayed.

**Information for doctor:** If injured skin is contaminated on a large scale apply polyethylene glycol (e. g. Lutrol, PEG 400), leave it on for some minutes and then wash with water.

## SECTION 5: Fire Fighting Measures

**General information:** The product is a fire-fighting agent. Use a fire-fighting agent that is suitable for the burning materials.

**Extinguishing agents:** Dependent on burning materials.

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 3/ 10

*Not suitable extinguishing agents for safety reasons:* Dependent on burning materials.

*Special exposure hazards:* Dependent on burning materials.

*Special protective equipment for fire-fighters:* Dependent on burning materials.

*Further notice:* The product is tested as an additive to water used in fire-fighting.

## SECTION 6: Accidental Release Measures

*Personal precaution:* If aerosols are generated use fine dust respirator (P2 or P3) or a ventilated breathing hood.

*Environmental precaution:* Do not discharge the product into surface water, groundwater or soil.

*Methods for cleaning up:* Withdraw large quantities. Take up the rest with liquid-absorbent material (sand, clay, cat litter or other adsorbent material for water). Discharge contaminated material according to SECTION 13.

## SECTION 7: Handling and Storage

*Handling:* Avoid contact with skin and eyes.

*Notes for prevention of fire and explosion:* Not applicable

*Storage:* Keep containers closed. Store between 1°C to 49°C in well-ventilated area. Shield from solar radiation and heat. German VCI-class of storage: 12.

## SECTION 8: Exposure Controls / Personal Protection

8.1 *Technical protection:* Avoid the generation of aerosols from the concentrate.

8.2 *Occupational exposure limit values:*

Note: If no European exposure limit value exists, the former German maximum concentration in the workplace (MAK, TRK) including the associated short time limit values are stated. They are not mandatory any more, but it is recommended to comply with.

2-Methyl-2,4-pentanediol

- CAS-No.:	107-41-5
- Exposure limit value:	49 mg/m <sup>3</sup> (10 ml/m <sup>3</sup> )
- Short term limit value:	98 mg/m <sup>3</sup> (15-minute average, 4 measurements at intervals of 1 hour)
- BLV:	None
- Origin:	Not mandatory recommendation of the MAK-Commission of Germany
- Remarks:	None.
- Year:	2008

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 4/ 10

## Explanations:

- BLV: Biological limit value
- Remarks:: H : Substances effective by resorption through skin  
S = Sensitizing substance  
Y or C: There is no teratogenic risk if the exposure limit value and the BLV are maintained.

## 8.3 Personal Protection:

Adjust personal protective equipment to the type of burning materials. Use a fine dust respirator at least. Use eye protection if handling the concentrate.

The following protection measures apply to the product upon delivery (concentrate).

- Respiratory protection:** If aerosols are generated use fine dust respirator (P2 or P3) or a ventilated breathing hood.
- Hand protection:** If contact with hands cannot be avoided use protection gloves tested according to DIN EN 374. Seek advice from manufacturers of protection gloves. If gloves cannot be used for safety reasons (e. g. while working at rotating machines) use skin-protective barrier cream. Consult the company medical officer for the type of barrier cream to be used.  
Comment: In contrary to the European ordinance 1907/2006/EC (REACH), it is not sufficient to specify only the protective glove material. The break-through-times are dependent not only on the material but also on the manufacturing technique. It is therefore essential to consult the manufacturers of protective gloves. For this product rubber or plastic gloves are generally sufficient.
- Eye protection:** Safety glasses with side shield.
- Skin protection:** Use waterproof protective clothing and gumboots if contamination of clothing cannot be avoided.
- General protective measures:** Avoid contact with eyes and skin. Change contaminated clothing immediately.
- Industrial hygiene:** Do not eat, drink, smoke or take snuff at work.

## SECTION 9: Physical and Chemical Properties

### 9.1 Appearance

- Physical state:** Liquid.
- Colour:** Transparent, slightly red.
- Odour:** Faint pleasant odour.

### 9.2 Relevant data for Safety and Health for the product (concentrate):

- Melting point/ range:** -1°C
- Boiling point / range:** 127°C
- Flash range:** No inflammability
- Ignition temperature:** Not applicable
- Autoignition temperature:** Not applicable

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 5/ 10

<i>Explosive range:</i>	Not applicable
<i>Vapour pressure:</i>	Almost like water
<i>Substance weight:</i>	1.011 g/ml
<i>Bulk density:</i>	Not applicable
<i>Solubility in water:</i>	Miscible
<i>pH-Value:</i>	8.0 (Will be lowered by carbon dioxide from air.)
<i>Volatile components:</i>	Water
<i>Solubility in other solvents:</i>	Not determined
<i>Partition coefficient n-octanol/water:</i>	Not determined
<i>Kinematic viscosity:</i>	2.23 mm <sup>2</sup> /sec at 20°C and 4.74 mm <sup>2</sup> /sec at 5°C, respectively
<i>Surface tension:</i>	Product: 0.0162 +/- 0.002 N/m (16.2 +/- 2 dyn/cm) 1% aqueous solution: 0.029 +/- 0.002 N/m (29 +/- 2 dyn/cm) 3% aqueous solution: 0.026 +/- 0.002 N/m (26 +/- 2 dyn/cm) 6% aqueous solution: 0.022 +/- 0.002 N/m (22 +/- 2 dyn/cm)
<i>Interfacial tension:</i>	Not determined

## SECTION 10: Stability and Reactivity

<i>Thermal decomposition:</i>	Not determined
<i>Substances to be avoided:</i>	Strong oxidizing agents.
<i>Dangerous reactions:</i>	No dangerous reactions are known.
<i>Hazardous decomposition products:</i>	After evaporation of water: carbon monoxide, carbon dioxide, different hydrocarbons and sulfur compounds, mainly sulfur dioxide when burning.
<i>Dangerous polymerisations:</i>	None.

## SECTION 11: Toxicological Information

11.1 Product	Only few information on the toxicity of the product is available (refer to a letter of the Hygiene-Institut des Ruhrgebietes dated 04 <sup>th</sup> Aug. 2008). On the basis of the toxicities of the ingredients the following toxicities of the product are to be expected:
<i>Acute toxicity:</i>	The product may cause eye and slight skin irritations, and nausea and diarrhea if large amounts are swallowed. No toxic effects are to be expected if industrial hygiene standards are maintained.
<i>Acute oral toxicity:</i>	LD <sub>50</sub> (rat, oral): > 2000 mg/kg (Hygiene-Institut des Ruhrgebietes)
<i>Acute inhalative toxicity:</i>	No data.
<i>Acute dermal toxicity:</i>	At a patch-test the pure component 2-Methyl-2,4-pentanediol caused already skin reactions of some patients with eczema at a concentration of 1% (GESTIS).
<i>After inhalation:</i>	We have no information on symptoms resulting from aerosol inhalation. The vapour pressure of all other components is negligible in comparison to the water component.
<i>After skin contact:</i>	Slight irritations are possible.
<i>After eye contact:</i>	Irritations are possible.

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 6/ 10

*After ingestion:* We have no information on symptoms resulting from ingestion. On the basis of the component 2-Methyl-2,4-pentanediol nausea and diarrhea are to be expected if large amounts of the product are swallowed.

*Sensitization:* No sensitizing effects are known.  
*Mutagenicity:* No mutagenic effects are known.  
*Cancer:* No carcinogenic effects are known.  
*Reproductive toxicity:* No toxic effects on reproduction are known.

*Toxic effects after repeated exposure (subacute to chronic toxicity):*

No information available.

*Further Information:* The product contains a further component at a concentration less than 0.04% which is sensitizing for the skin (refer to SECTION 2.2 and 3).

*Practical experience:* There are no reports of symptoms of poisoning after using the product.

## 11.2 Animal based data for the pure components:

### 11.2.1 2-Methyl-2,4-pentanediol

LD<sub>50</sub> (different rodents, oral): 2500 - 5000 mg/kg (GESTIS)  
LD<sub>50</sub> (rabbit, dermal): > 7.5 - 12.5 mg/kg (24 h contact, GESTIS)

### 11.2.2 Polyethylene glycol, nonyl, decyl, undecyl ether

LD<sub>50</sub> (rat, oral): 1378 mg/kg (ChemIDplus: J. of the American Collage of Toxicology, Vol. 10, p. 427, 1997)  
LD<sub>50</sub> (rabbit, dermal): > 2000 mg/kg (as aforementioned)

### 11.2.3 Sodium decyl sulfate

LD<sub>50</sub> (Ratte, oral): 1950 mg/kg (ChemIDplus and MSDS of the company Solberg, Norway)

### 11.2.4 Sodium octyl sulfate

LD<sub>50</sub> (Ratte, oral): 3200 mg/kg (Merck: RTECS)

## SECTION 12: Ecological Information

### 12.1 Product upon delivery (concentrate):

*Ecotoxic effects:* The product is water polluting (WGK 2) according to the German WHG (federal water act). The product may be used for fighting forest fires up to a concentration of 0.5% without affecting soil biota (Tests of the Hygiene-Institut des Ruhrgebietes). No further information is available.

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 7/ 10

## *Ecotoxic data:*

*Fish toxicity:* EC<sub>0</sub>: 20 mg/l / 48 h (Bericht -Nr. [report No.] 424-222750/110675/2.000 dated 4<sup>th</sup> March 2002 by TÜV Produkt und Umwelt GmbH, Köln, Germany)  
EC<sub>50</sub>: 40 mg/l / 48 h (as aforementioned)

*Further information:* None

## 12.2 Information on the **pure ingredients**:

### 12.2.1 2-Methyl-2,4-pentanediol:

*Ecotoxic effects:* Readily biodegradable. No bioaccumulation is to be expected.

## *Ecotoxic data:*

*Fish toxicity:* Gambusia affinis: LC<sub>50</sub>: 8,510 mg/l / 98 h (Merck)  
*Daphnia toxicity:* Daphnia magna: EC<sub>50</sub>: 3,200 mg/l / 48 h (Merck)  
*Bacterial toxicity:* Photobacterium phosphoreum: EC<sub>50</sub>: 3,028 mg/l / 5 min (Merck)

## *Further information:*

*Biodegradation:* > 70% / 28 d (Zahn-Wellens-test)

*Distribution:* log Pow: 0.58 (calculated, Merck)

*WGK (Water Pollution category, Germany):* 1 (slightly water polluting), VwVwS, annex 3, identification no.: 5025

### 12.2.2 Polyethylene glycol, nonyl, decyl, undecyl ether:

*Ecotoxic effects:* No information available.

## *Ecotoxic data:*

*Fish toxicity:* LC<sub>50</sub>: 9 mg/l / 98 h (MSDS of Deverochema, Czech Republic)  
*Daphnia toxicity:* EC<sub>50</sub>: 21 mg/l / 48 h (as aforementioned)  
*Algae toxicity:* EC<sub>50</sub>: 100 mg/l / 72 h (as aforementioned)

## *Further information:*

*WGK (Water Pollution category, Germany):* 2 (water polluting), VwVwS, annex 3, self-rating

### 12.2.3 Sodium decyl sulfate:

*Ecotoxic effects:* Readily biodegradable. No bioaccumulation is to be expected.

*Ecotoxic data:* No information available.

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 8/ 10

*Further information:*

*WGK (Water Pollution category, Germany):* 2 (water polluting), VwVwS, annex 2, identification no.: 664

12.2.4 Sodium octyl sulfate:

*Ecotoxic effects:* Readily biodegradable. No bioaccumulation is to be expected.

*Ecotoxic data:* No information available.

*Further information:*

*WGK (Water Pollution category, Germany):* 2 (water polluting), VwVwS, annex 2, identification no.: 664

12.3 For the application concentration of 3% the following data are available:

*Ecotoxic effects:* Readily biodegradable. No adverse effects to sewage plants are to be expected (TTC-test by the Hygiene-Institut des Ruhrgebietes).

*Ecotoxic data for the 3% aqueous solution:*

*Fish toxicity:* LC<sub>50</sub>: 1,330 mg/l (Estimation by the Hygiene-Institut des Ruhrgebietes based on the data of the concentrate)

*Daphnia toxicity:* EC<sub>50</sub>: 26,000 mg/l / 48 h (Hygiene-Institut des Ruhrgebietes: tested according to TG OECD 202)

*Algal toxicity:* EC<sub>50</sub>: 63,390 mg/l / 72 h (Hygiene-Institut des Ruhrgebietes: tested according to TG OECD 201)

EC<sub>20</sub>: 18,830 mg/l / 72 h (as aforementioned)

EC<sub>10</sub>: 9,950 mg/l / 72 h (as aforementioned)

*Further information:*

*COD (3% solution):* 9,680 mg O<sub>2</sub> / l (Hygiene-Institut des Ruhrgebietes)

*BOD<sub>5</sub> (3% solution):* 1,920 mg O<sub>2</sub> / l (= 19,8%) (Hygiene-Institut d. R.: MITI-test)

*Biodegradability:* 87% / 25 d (Hygiene-Institut des Ruhrgebietes)

*WGK (Water Pollution category, Germany):* 1 (slightly water polluting), VwVwS, annex 3, self-rating

Do not allow the product to enter water supplies, waste water or soil.

## SECTION 13: Disposal Considerations

13.1 *Product:* Previous to recovery the product should be pretreated to remove the water. For disposal the product has to be supervised.

*Waste code:* 16 10 04

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 9/ 10

*Waste name:* Aqueous concentrates with the exception of those included under waste code 16 10 03\*

**13.2 Wastes contaminated by the product (adsorbent materials, protective clothing):**

*Waste code:* 15 02 03  
*Waste name:* Adsorbent and filter materials, wipes and protective clothing with the exception of those included under waste code 15 02 02\*

**13.3 Packing materials (completely emptied):**

- a) Packing materials made of plastics:  
*Waste code:* 15 01 02  
*Waste name:* Packing materials made of plastics
- b) Packing materials made of metal:  
*Waste code:* 15 01 04  
*Waste name:* Packing materials made of metal

**13.4 1 to 3% aqueous solution of the product:**

An aqueous solution of the concentrate (product upon delivery) up to 3% may be discarded to the sewage system mixed with other waters at a ratio of 1 : 11, respectively.

Waste-codes in accordance with the European Waste Register ordinance.

## SECTION 14: Transport Information

The product is not classified under international transport regulations.

## SECTION 15: Regulatory Information (EC Directive 67/548 including the 29<sup>th</sup> conformity)

**15.1** There are no safety reports according to 1907/2006/EC (REACH) available.

**15.2** *EEC Classification:* None

**15.3** *EEC Labeling:*

*Safety-phrases:* 24/25 Avoid contact with skin and eyes

**15.4** *National Regulations, Germany:*

**15.4.1** *Special regulations from the Gefahrstoffverordnung:* None. Schutzgruppe (protection group): 1

**15.4.2** *StörfallV:* Not applicable

**15.4.3** *TA-Luft:* Clause 5.2.5: Organic substances apart from particulate matter: max. mass concentration: 50 mg/m<sup>3</sup> or max. mass flow: 0.50 kg/h (calculated as total carbon)

**15.4.4** *VCI Storage Class:* 12

# SAFETY DATA SHEET



Safety Data Sheet according to  
1907/2006/EC (REACH), Article 31 and Annex II  
Product name: **FireAde 2000 - Fire Fighting Agent**  
Date of issue: 12 Sept. 2008  
Date of last revision:

FIRST VALUE HOLDINGS Ltd.

Page 10/ 10

15.4.5 *WHG:* Water polluting (German Water Pollution Category 2)

15.4.6 *Volatile components:* Water

15.5 *Further regulations  
and restrictions:* None

## SECTION 16: Other Information

### *R-Phrases of SECTION 3:*

R 36/38 Irritating to eyes and skin  
R 22 Harmful if swallowed  
R 36 Irritating to eyes  
R 38 Irritating to skin  
R 41 Risk of serious damage to eyes

### Abbreviations:

BOD: Biochemical oxygen demand  
ChemIDplus: Database of the United States National Library of Medicine  
COD: Chemical oxygen demand  
EINECS: European Inventory of Existing Commercial Substances  
GESTIS: Data base of Berufsgenossenschaftliches Institut für Arbeitsschutz, Germany  
MAK: Maximale Arbeitsplatzkonzentration (maximum concentration in the workplace, out of date)  
Merck: Actuel MSDS of Merck, Darmstadt, Germany  
MITI: Ministry of International Trade and Industry, Japan  
MSDS: Material Safety Data Sheet  
OECD: Organisation for Economic Co-operation and Development  
RTECS: Register of Toxic Effects of Chemical Substances  
TG: Test-Guideline  
TOC: Total organic carbon  
TRK: Technische Richtkonzentration (technical concentration in the workplace to comply with [for cancerogenic substances], out of date)  
TTC: 2,3,5-Triphenyl, tetrazoliumchloride  
VCI: Verband der Chemischen Industrie e.V. (Chemical Industry Association, Germany)  
VwVwS: Ordinance on water polluting substances, Germany  
WHG: Wasserhaushaltsgesetz (German Federal Water Act)

As of the date of issuance, we are providing available information relevant to the handling of this material in the workplace. All information contained herein is offered in good faith in the belief that it is accurate. This material safety data sheet shall not be deemed to constitute or imply any warranty of any kind. In the event of an adverse incident associated with this material, this safety data sheet is not intended as a substitute for consultation with appropriately trained personnel (refer to section 1). Nor is this safety data sheet intended to be a substitute for any product literature which may accompany the finished product.



**Camp Luis Obispo**

Camp Luis Obispo

San Luis Obispo, CA 93405

Inquiry Number: 5326782.5

June 13, 2018

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# EDR Aerial Photo Decade Package

06/13/18

**Site Name:**

Camp Luis Obispo  
Camp Luis Obispo  
San Luis Obispo, CA 93405  
EDR Inquiry # 5326782.5

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Jacquelyn Harrington



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

## Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=1000'	Flight Year: 2016	USDA/NAIP
2012	1"=1000'	Flight Year: 2012	USDA/NAIP
2009	1"=1000'	Flight Year: 2009	USDA/NAIP
2006	1"=1000'	Flight Year: 2006	USDA/NAIP
1994	1"=1000'	Acquisition Date: May 13, 1994	USGS/DOQQ
1981	1"=1000'	Flight Date: August 01, 1981	USDA
1976	1"=1000'	Flight Date: January 01, 1976	USGS
1963	1"=1000'	Flight Date: January 01, 1963	USGS
1956	1"=1000'	Flight Date: September 10, 1956	USGS
1949	1"=1000'	Flight Date: April 03, 1949	USDA

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

### Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2018 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

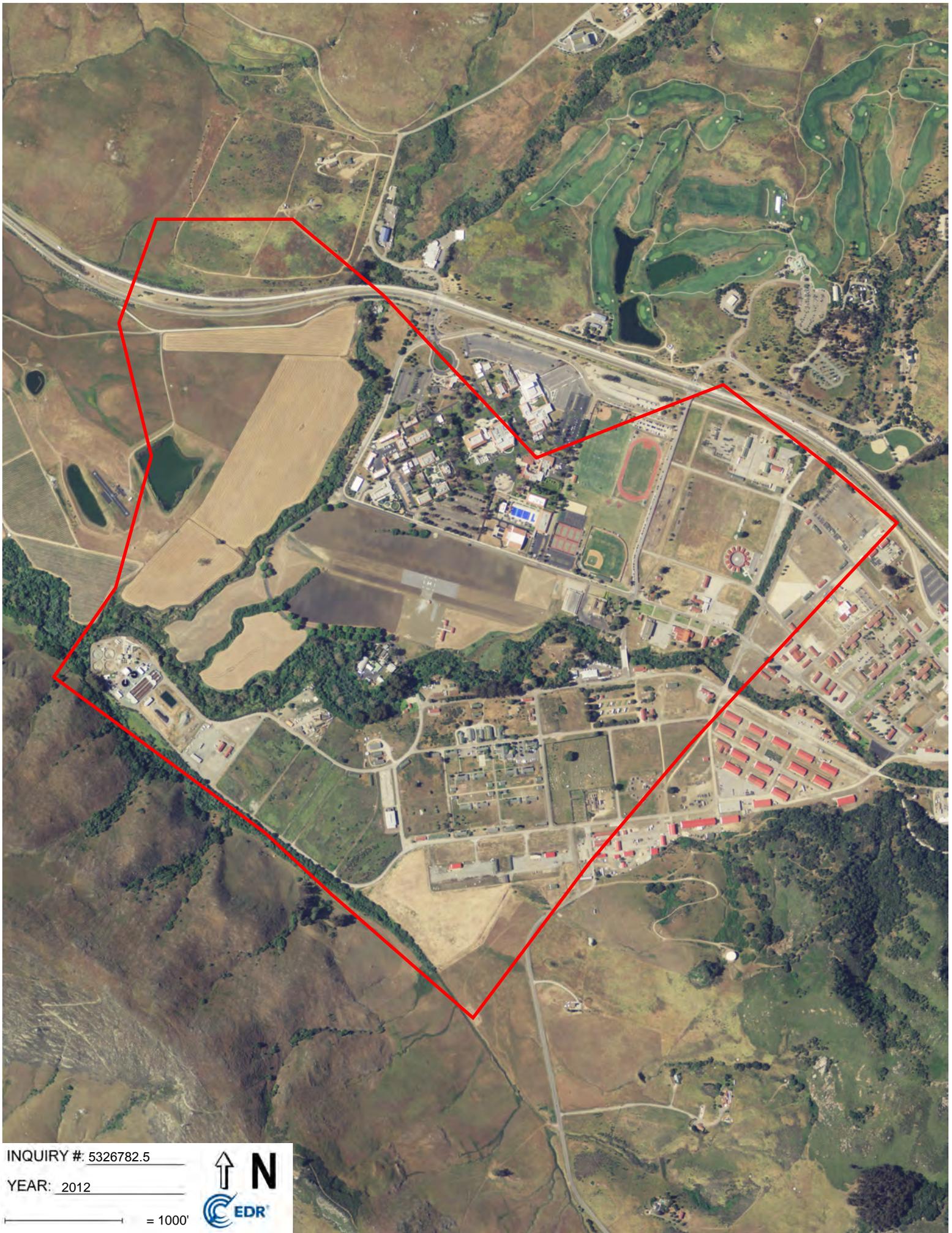


INQUIRY #: 5326782.5

YEAR: 2016

— = 1000'





INQUIRY # 5326782.5

YEAR: 2012

— = 1000'





INQUIRY # 5326782.5

YEAR: 2009

— = 1000'









INQUIRY #: 5326782.5

YEAR: 1981



— = 1000'



INQUIRY # 5326782.5

YEAR: 1976

— = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY #: 5326782.5

YEAR: 1963

— = 1000'



Subject boundary not shown because it exceeds image extent or image is not georeferenced.



INQUIRY # 5326782.5

YEAR: 1956

 = 1000'





INQUIRY #: 5326782.5

YEAR: 1949

— = 1000'



**Camp Luis Obispo**

Camp Luis Obispo

San Luis Obispo, CA 93405

Inquiry Number: 5326782.2s

June 08, 2018

# The EDR Radius Map™ Report with GeoCheck®



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary .....	ES1
Overview Map .....	2
Detail Map .....	3
Map Findings Summary .....	4
Map Findings .....	8
Orphan Summary .....	74
Government Records Searched/Data Currency Tracking .....	GR-1
 <b><u>GEOCHECK ADDENDUM</u></b>	
Physical Setting Source Addendum .....	A-1
Physical Setting Source Summary .....	A-2
Physical Setting SSURGO Soil Map .....	A-5
Physical Setting Source Map .....	A-12
Physical Setting Source Map Findings .....	A-14
Physical Setting Source Records Searched .....	PSGR-1

***Thank you for your business.***  
 Please contact EDR at 1-800-352-0050  
 with any questions or comments.

### Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2018 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission. EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

CAMP LUIS OBISPO  
SAN LUIS OBISPO, CA 93405

#### COORDINATES

Latitude (North): 35.3269790 - 35° 19' 37.12"  
Longitude (West): 120.7333120 - 120° 43' 59.92"  
Universal Transverse Mercator: Zone 10  
UTM X (Meters): 706035.6  
UTM Y (Meters): 3911463.5  
Elevation: 248 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5629228 SAN LUIS OBISPO, CA  
Version Date: 2012  
  
West Map: 5603506 MORRO BAY SOUTH, CA  
Version Date: 2012

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140604, 20140613  
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:  
 CAMP LUIS OBISPO  
 SAN LUIS OBISPO, CA 93405

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	ACHIEVEMENT HOUSE	3003 CUESTA COLLEGE	CUPA Listings	Lower	1 ft.
2	OPER ENGINEERS TRAIN	COLUSA & WASHINGTON	CUPA Listings, CERS HAZ WASTE, CERS	Lower	1 ft.
3	CAMP SAN LUIS OBISPO	HWY 1	CPS-SLIC, CERS	Lower	1 ft.
4	MANHOLE NEAR CUESTA	CHILDREN'S CENTER	Notify 65	Lower	1 ft.
5	CUESTA COLLEGE	HWY 1	LUST, UST, SWEEPS UST, HIST UST, CUPA Listings,...	Lower	1 ft.
6	CAMP SAN LUIS OBISPO	HIGHWAY 1	CPS-SLIC, CERS	Higher	1 ft.
7	CAL FIRE CUESTA CAMP	BLDG 962, HWY 1, CAM	CUPA Listings	Higher	1 ft.
8	DAIRY CREEK GOLF COU	2950 DAIRY CREEK RD	CUPA Listings, CERS HAZ WASTE	Higher	183, 0.035, NNW
9	SLO CO SUPER. OF SCH	3420 WATSON DR	CUPA Listings, HAZNET, NPDES, WDS, CIWQS	Higher	227, 0.043, NW
A10	GRENADÉ COURTS 17 AN		UXO	Lower	308, 0.058, NW
A11	GRENADÉ COURTS 25 AN		UXO	Lower	308, 0.058, NW
A12	MULTI-USE RANGE COMP		UXO	Lower	308, 0.058, NW
A13	RIFLE GRENADÉ RANGE		UXO	Lower	308, 0.058, NW
B14	VERIZON WIRELESS CUE	3535 EDUCATION DR	CUPA Listings, CERS	Higher	444, 0.084, NW
B15	AT&T MOBILITY-SLG28-	3535 EDUCATION DR	CUPA Listings	Higher	444, 0.084, NW
C16	CA ARMY NAT. GRD., C	HIGHWAY 1	CPS-SLIC, DEED, CERS	Higher	583, 0.110, South
C17	CAMP SAN LUIS OBISPO	HWY 1 BLDG 1328	CUPA Listings	Higher	657, 0.124, South
D18		2100 HWY 1	AST	Higher	662, 0.125, NW
D19	CALIFORNIA MENS COLO	2100 HWY 1	SWEEPS UST	Higher	662, 0.125, NW
20	CAMP SAN LUIS OBISPO	HWY 1	UST	Higher	938, 0.178, SE
21	CAMP SAN LUIS OBISPO	SAN JOAQUIN AVENUE	CPS-SLIC	Higher	980, 0.186, ESE
22	LOMA VISTA COMMUNITY	PENNINGTON CREEK ROA	ENVIROSTOR, SCH	Higher	2953, 0.559, NNW

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

NPL..... National Priority List  
Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
SEMS..... Superfund Enterprise Management System

### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators  
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List

## EXECUTIVE SUMMARY

US INST CONTROL..... Sites with Institutional Controls

### **Federal ERNS list**

ERNS..... Emergency Response Notification System

### **State- and tribal - equivalent NPL**

RESPONSE..... State Response Sites

### **State and tribal landfill and/or solid waste disposal site lists**

SWF/LF..... Solid Waste Information System

### **State and tribal leaking storage tank lists**

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

### **State and tribal registered storage tank lists**

FEMA UST..... Underground Storage Tank Listing

INDIAN UST..... Underground Storage Tanks on Indian Land

### **State and tribal voluntary cleanup sites**

INDIAN VCP..... Voluntary Cleanup Priority Listing

VCP..... Voluntary Cleanup Program Properties

### **State and tribal Brownfields sites**

BROWNFIELDS..... Considered Brownfields Sites Listing

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

US BROWNFIELDS..... A Listing of Brownfields Sites

### **Local Lists of Landfill / Solid Waste Disposal Sites**

WMUDS/SWAT..... Waste Management Unit Database

SWRCY..... Recycler Database

HAULERS..... Registered Waste Tire Haulers Listing

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

ODI..... Open Dump Inventory

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

IHS OPEN DUMPS..... Open Dumps on Indian Land

### **Local Lists of Hazardous waste / Contaminated Sites**

US HIST CDL..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites..... Historical Calsites Database

SCH..... School Property Evaluation Program

CDL..... Clandestine Drug Labs

## EXECUTIVE SUMMARY

Toxic Pits..... Toxic Pits Cleanup Act Sites  
US CDL..... National Clandestine Laboratory Register

### **Local Lists of Registered Storage Tanks**

CA FID UST..... Facility Inventory Database

### **Local Land Records**

LIENS..... Environmental Liens Listing  
LIENS 2..... CERCLA Lien Information

### **Records of Emergency Release Reports**

HMIRS..... Hazardous Materials Information Reporting System  
CHMIRS..... California Hazardous Material Incident Report System  
LDS..... Land Disposal Sites Listing  
MCS..... Military Cleanup Sites Listing  
SPILLS 90..... SPILLS 90 data from FirstSearch

### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
FUDS..... Formerly Used Defense Sites  
DOD..... Department of Defense Sites  
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing  
US FIN ASSUR..... Financial Assurance Information  
EPA WATCH LIST..... EPA WATCH LIST  
2020 COR ACTION..... 2020 Corrective Action Program List  
TSCA..... Toxic Substances Control Act  
TRIS..... Toxic Chemical Release Inventory System  
SSTS..... Section 7 Tracking Systems  
ROD..... Records Of Decision  
RMP..... Risk Management Plans  
RAATS..... RCRA Administrative Action Tracking System  
PRP..... Potentially Responsible Parties  
PADS..... PCB Activity Database System  
ICIS..... Integrated Compliance Information System  
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)  
MLTS..... Material Licensing Tracking System  
COAL ASH DOE..... Steam-Electric Plant Operation Data  
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List  
PCB TRANSFORMER..... PCB Transformer Registration Database  
RADINFO..... Radiation Information Database  
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing  
DOT OPS..... Incident and Accident Data  
CONSENT..... Superfund (CERCLA) Consent Decrees  
INDIAN RESERV..... Indian Reservations  
FUSRAP..... Formerly Utilized Sites Remedial Action Program  
UMTRA..... Uranium Mill Tailings Sites  
LEAD SMELTERS..... Lead Smelter Sites  
US AIRS..... Aerometric Information Retrieval System Facility Subsystem  
US MINES..... Mines Master Index File  
ABANDONED MINES..... Abandoned Mines

## EXECUTIVE SUMMARY

FINDS.....	Facility Index System/Facility Registry System
DOCKET HWC.....	Hazardous Waste Compliance Docket Listing
ECHO.....	Enforcement & Compliance History Information
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN.....	Bond Expenditure Plan
Cortese.....	"Cortese" Hazardous Waste & Substances Sites List
DRYCLEANERS.....	Cleaner Facilities
EMI.....	Emissions Inventory Data
ENF.....	Enforcement Action Listing
Financial Assurance.....	Financial Assurance Information Listing
HAZNET.....	Facility and Manifest Data
ICE.....	ICE
HIST CORTESE.....	Hazardous Waste & Substance Site List
HWP.....	EnviroStor Permitted Facilities Listing
HWT.....	Registered Hazardous Waste Transporter Database
MINES.....	Mines Site Location Listing
MWMP.....	Medical Waste Management Program Listing
NPDES.....	NPDES Permits Listing
PEST LIC.....	Pesticide Regulation Licenses Listing
PROC.....	Certified Processors Database
UIC.....	UIC Listing
WASTEWATER PITS.....	Oil Wastewater Pits Listing
WDS.....	Waste Discharge System
WIP.....	Well Investigation Program Case List
CERS.....	CERS
CIWQS.....	California Integrated Water Quality System
UIC GEO.....	UIC GEO (GEOTRACKER)
PROJECT.....	PROJECT (GEOTRACKER)
PROD WATER PONDS.....	PROD WATER PONDS (GEOTRACKER)
WELL STIM PROJ.....	Well Stimulation Project (GEOTRACKER)
SAMPLING POINT.....	SAMPLING POINT (GEOTRACKER)
MILITARY PRIV SITES.....	MILITARY PRIV SITES (GEOTRACKER)
NON-CASE INFO.....	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS.....	OTHER OIL & GAS (GEOTRACKER)

### **EDR HIGH RISK HISTORICAL RECORDS**

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical Cleaners

### **EDR RECOVERED GOVERNMENT ARCHIVES**

#### ***Exclusive Recovered Govt. Archives***

RGA LF.....	Recovered Government Archive Solid Waste Facilities List
RGA LUST.....	Recovered Government Archive Leaking Underground Storage Tank

### **SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

## EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### **STANDARD ENVIRONMENTAL RECORDS**

#### ***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/30/2018 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>LOMA VISTA COMMUNITY</i></b> Facility Id: 40020002 Status: No Action Required	<b><i>PENNINGTON CREEK ROA</i></b>	<b><i>NNW 1/2 - 1 (0.559 mi.)</i></b>	<b><i>22</i></b>	<b><i>71</i></b>

#### ***State and tribal leaking storage tank lists***

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>CUESTA COLLEGE</i></b> Database: LUST REG 3, Date of Government Version: 05/19/2003 Database: LUST, Date of Government Version: 03/12/2018 Status: Completed - Case Closed Status: Case Closed Global Id: T0607900113 Global ID: T0607900113	<b><i>HWY 1</i></b>	<b><i>0 - 1/8 (0.000 mi.)</i></b>	<b><i>5</i></b>	<b><i>17</i></b>

## EXECUTIVE SUMMARY

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there are 4 CPS-SLIC sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CAMP SAN LUIS OBISPO</b> Database: CPS-SLIC, Date of Government Version: 03/12/2018 Global Id: T10000002060 Facility Status: Completed - Case Closed	<b>HIGHWAY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>6</b>	<b>50</b>
<b>CA ARMY NAT. GRD., C</b> Database: CPS-SLIC, Date of Government Version: 03/12/2018 Global Id: T0607949899 Facility Status: Completed - Case Closed	<b>HIGHWAY 1</b>	<b>S 0 - 1/8 (0.110 mi.)</b>	<b>C16</b>	<b>66</b>
<b>CAMP SAN LUIS OBISPO</b> Database: CPS-SLIC, Date of Government Version: 03/12/2018 Global Id: T10000006258 Facility Status: Completed - Case Closed	<b>SAN JOAQUIN AVENUE</b>	<b>ESE 1/8 - 1/4 (0.186 mi.)</b>	<b>21</b>	<b>70</b>

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CAMP SAN LUIS OBISPO</b> Database: CPS-SLIC, Date of Government Version: 03/12/2018 Global Id: T10000001485 Facility Status: Completed - Case Closed	<b>HWY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>3</b>	<b>16</b>

### **State and tribal registered storage tank lists**

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CAMP SAN LUIS OBISPO</b> Database: UST, Date of Government Version: 03/12/2018	<b>HWY 1</b>	<b>SE 1/8 - 1/4 (0.178 mi.)</b>	<b>20</b>	<b>70</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CUESTA COLLEGE</b> Database: UST, Date of Government Version: 03/12/2018	<b>HWY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>5</b>	<b>17</b>

## EXECUTIVE SUMMARY

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported	2100 HWY 1	NW 1/8 - 1/4 (0.125 mi.)	D18	68

Database: AST, Date of Government Version: 07/06/2016

### ADDITIONAL ENVIRONMENTAL RECORDS

#### **Local Lists of Hazardous waste / Contaminated Sites**

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 04/23/2018 has revealed that there are 3 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>DAIRY CREEK GOLF COU</b>	<b>2950 DAIRY CREEK RD</b>	<b>NNW 0 - 1/8 (0.035 mi.)</b>	<b>8</b>	<b>52</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>OPER ENGINEERS TRAIN</b>	<b>COLUSA &amp; WASHINGTON</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>2</b>	<b>8</b>
<b>CUESTA COLLEGE</b>	<b>HWY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>5</b>	<b>17</b>

#### **Local Lists of Registered Storage Tanks**

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CALIFORNIA MENS COLO Status: A Tank Status: A Comp Number: 11301	2100 HWY 1	NW 1/8 - 1/4 (0.125 mi.)	D19	68
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CUESTA COLLEGE</b> Status: A Tank Status: A	<b>HWY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>5</b>	<b>17</b>

## EXECUTIVE SUMMARY

Comp Number: 13001

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CUESTA COLLEGE</b> Facility Id: 00000023045	<b>HWY 1</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>5</b>	<b>17</b>

### **Local Land Records**

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 02/08/2018 has revealed that there is 1 DEED site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CA ARMY NAT. GRD., C</b> Status: COMPLETED - CASE CLOSED Envirostor ID: T0607949899	<b>HIGHWAY 1</b>	<b>S 0 - 1/8 (0.110 mi.)</b>	<b>C16</b>	<b>66</b>

### **Other Ascertainable Records**

UXO: A listing of unexploded ordnance site locations

A review of the UXO list, as provided by EDR, and dated 09/30/2016 has revealed that there are 4 UXO sites within approximately 1 mile of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GRENADE COURTS 17 AN		NW 0 - 1/8 (0.058 mi.)	A10	61
GRENADE COURTS 25 AN		NW 0 - 1/8 (0.058 mi.)	A11	61
MULTI-USE RANGE COMP		NW 0 - 1/8 (0.058 mi.)	A12	62
RIFLE GRENADE RANGE		NW 0 - 1/8 (0.058 mi.)	A13	62

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 9 CUPA Listings sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>CAL FIRE CUESTA CAMP</b> Database: CUPA SAN LUIS OBISPO, Date of Government Version: 11/16/2017	<b>BLDG 962, HWY 1, CAM</b>	<b>0 - 1/8 (0.000 mi.)</b>	<b>7</b>	<b>51</b>



## EXECUTIVE SUMMARY

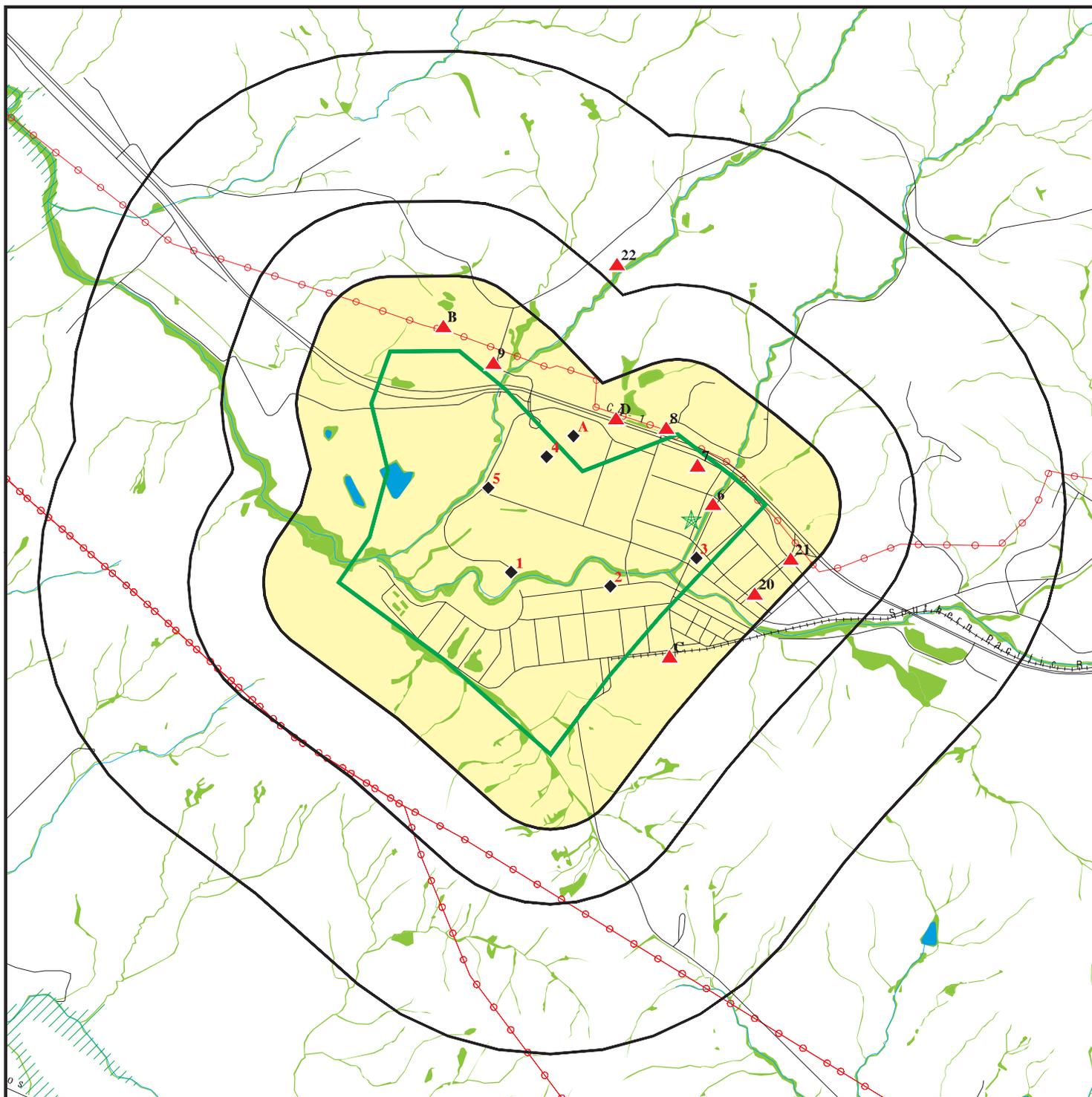
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
MANHOLE NEAR CUESTA	CHILDREN'S CENTER	0 - 1/8 (0.000 mi.)	4	17

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 4 records.

<u>Site Name</u>	<u>Database(s)</u>
CAMP SAN LUIS SUTTER AVENUE LANDFI	CERS
CAMP SAN LUIS OBISPO	RGA LUST
SAN LUIS OBISPO COUNTY COMMUNITY C	HAZNET
CAMP SAN LUIS SUTTER AVENUE LANDFI	FINDS

# OVERVIEW MAP - 5326782.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  Power transmission lines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands
-  Upgradient Area
-  Areas of Concern

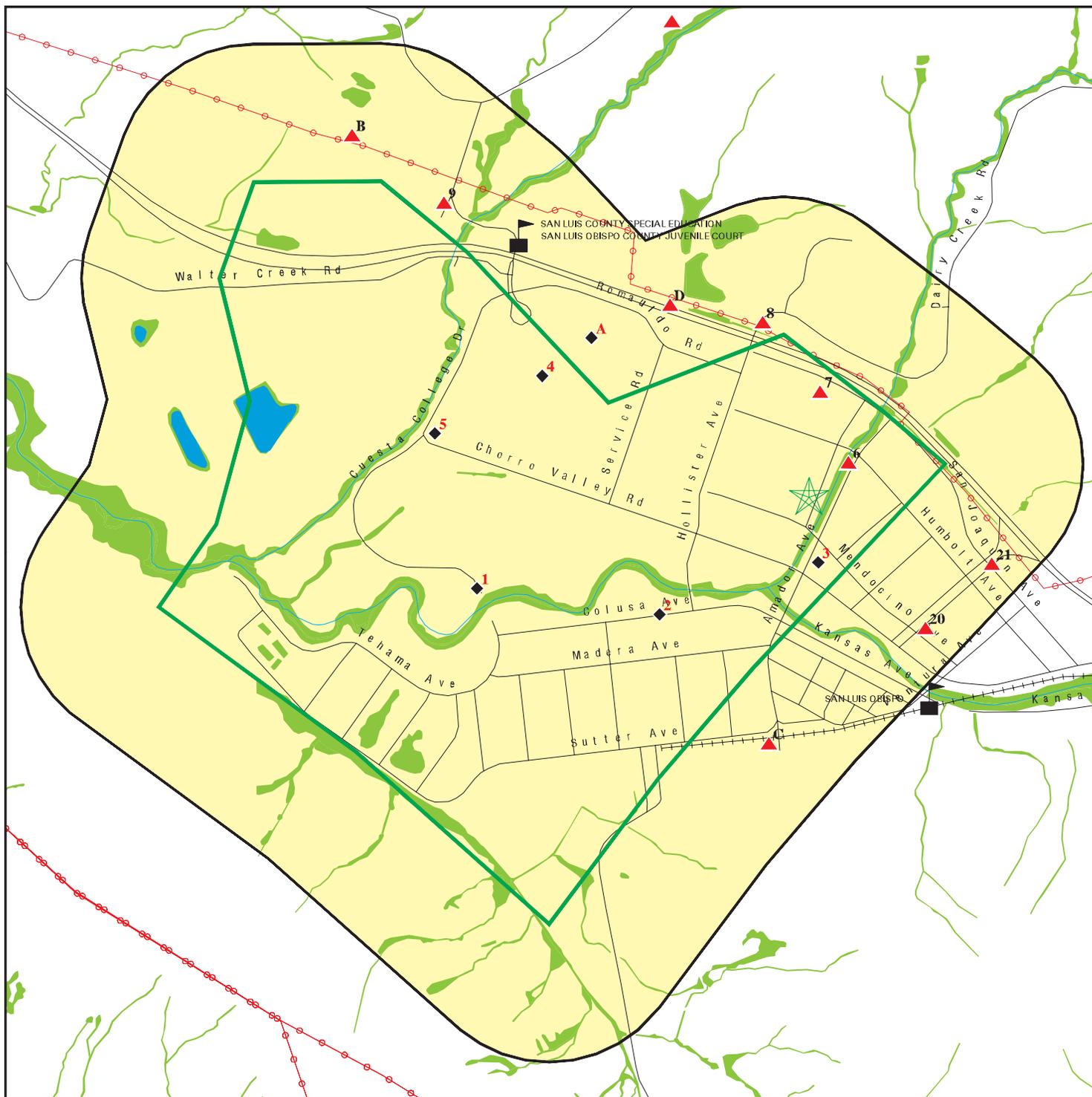


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Camp Luis Obispo  
 ADDRESS: Camp Luis Obispo  
 San Luis Obispo CA 93405  
 LAT/LONG: 35.326979 / 120.733312

CLIENT: AECOM  
 CONTACT: Jacquelyn Harrington  
 INQUIRY #: 5326782.2s  
 DATE: June 08, 2018 6:02 pm

# DETAIL MAP - 5326782.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  Power transmission lines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands
-  Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Camp Luis Obispo ADDRESS: Camp Luis Obispo San Luis Obispo CA 93405 LAT/LONG: 35.326979 / 120.733312	CLIENT: AECOM CONTACT: Jacquelyn Harrington INQUIRY #: 5326782.2s DATE: June 08, 2018 6:03 pm
--	--

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent NPL</i></b>								
RESPONSE	1.000		0	0	0	0	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
ENVIROSTOR	1.000		0	0	0	1	NR	1
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
LUST	0.500		1	0	0	NR	NR	1

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		3	1	0	NR	NR	4
<b>State and tribal registered storage tank lists</b>								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		1	1	NR	NR	NR	2
AST	0.250		0	1	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		3	0	NR	NR	NR	3
<b>Local Lists of Registered Storage Tanks</b>								
SWEEPS UST	0.250		1	1	NR	NR	NR	2
HIST UST	0.250		1	0	NR	NR	NR	1
CA FID UST	0.250		0	0	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		1	0	0	NR	NR	1

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		4	0	0	0	NR	4
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		9	0	NR	NR	NR	9
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0



MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Site

Database(s)

EDR ID Number  
EPA ID Number

**1**            **ACHIEVEMENT HOUSE**  
**3003 CUESTA COLLEGE RD**  
**< 1/8**        **SAN LUIS OBISPO, CA 93406**  
**1 ft.**

**CUPA Listings**    **S115950040**  
                                 **N/A**

**Relative:**  
**Lower**  
**Actual:**  
**208 ft.**

CUPA SAN LUIS OBISPO:  
Facility Id:            FA0000659  
Program Element Code:    0726  
Program Element:        HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id:              PR0010219  
Cross Street:            Not reported  
Status Code:            02  
Status:                 Inactive, non-billable  
Latitude:                35.32459  
Longitude:              -120.74381

**2**            **OPER ENGINEERS TRAINING - CAMP SLO**  
**COLUSA & WASHINGTON BLDG 1600**  
**< 1/8**        **SAN LUIS OBISPO, CA 93405**  
**1 ft.**

**CUPA Listings**    **S119002603**  
**CERS HAZ WASTE**    **N/A**  
**CERS**

**Relative:**  
**Lower**  
**Actual:**  
**245 ft.**

CUPA SAN LUIS OBISPO:  
Facility Id:            FA0006837  
Program Element Code:    0726  
Program Element:        HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id:              PR0013952  
Cross Street:            Not reported  
Status Code:            01  
Status:                 Active, billable  
Latitude:                35.32384  
Longitude:              -120.73809

Facility Id:            FA0006837  
Program Element Code:    1126  
Program Element:        HAZWASTE GEN (1-5 WASTE STREAMS)  
Record Id:              PR0010581  
Cross Street:            Not reported  
Status Code:            01  
Status:                 Active, billable  
Latitude:                35.32384  
Longitude:              -120.73809

CERS HAZ WASTE:  
Site ID:                140120  
CERS ID:                10623964  
CERS Description:        Hazardous Waste Generator

Violations:  
Site ID:                140120  
Site Name:             OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date:        03-20-2015  
Citation:              HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple  
Violation Description:    Haz Waste Generator Program - Administration/Documentation - General  
Violation Notes:        Returned to compliance on 07/29/2015. UPDATE HAZARDOUS MATERIAL BUSINESS PLAN, THROUGH SLO COUNTY EHS PUBLIC PORTAL, BY 4/19/2015 1. APPLY FOR USER NAME AND PASSWORD FOR JAMES 2. UPDATE EMERGENCY CONTACT INFORMATION 3. ADD DIESEL FUEL TO CHEMICAL INVENTORY 4. REMOVE MOTOR OIL FROM CHEMICAL INVENTORY 5. REVIEW SITE MAP AND ENSURE DIESEL FUEL TRUCK IS ON MAP.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 140120  
Site Name: OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date: 09-08-2017  
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)  
Violation Description: Failure to complete and electronically submit a site map with all required content.  
Violation Notes: UPDATE THE SITE MAP TO INCLUDE THE STORAGE LOCATION OF DIESEL FUEL AND USED OIL TRUCK. SUBMIT ELECTRONICALLY.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 140120  
Site Name: OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date: 03-20-2015  
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple  
Violation Description: Haz Waste Generator Program - Training - General  
Violation Notes: Returned to compliance on 07/29/2015. SUBMIT COPY OF JAMES NIGHTINGALE HAZARD COMMUNICATION TRAINING DOCUMENTATION, TO YOUR INSPECTOR, BY 4/19/2015

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 140120  
Site Name: OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date: 03-20-2015  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 07/29/2015. HAVE WASTE OIL PICKED UP BY HAZ WASTE HAULER AND SUBMIT COPY OF WASTE OIL MANIFEST, TO YOUR INSPECTOR, BY 4/19/2015

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 140120  
Site Name: OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date: 09-08-2017  
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)  
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.  
Violation Notes: ELECTRONICALLY UPDATE THE CHEMICAL INVENTORY WITH THESE CHANGES: 800-GAL DIESEL, USED OIL LARGEST CONTAINER=100-GAL. THE CHEMICAL INVENTORY MUST BE CERTIFIED AS ACCURATE ANNUALLY.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Evaluation:

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 03-20-2015  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: HAZARDOUS MATERIAL BUSINESS PLAN IS REQUIRED TO BE CERTIFIED EVERY YEAR BY 3/1 IF YOU HAVE SIGNIFICANT CHANGES TO YOUR PLAN (EMERGENCY CONTACTS CHANGE, CHANGE IN CHEMICAL INVENTORY), UPDATE THE HMBP WITHIN 30 DAYS. FACILITY STORES HAZARDOUS MATERIALS ABOVE THRESHOLD QUANTITY AND QUALIFIES FOR PE726

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 07-29-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-17-2013  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Affiliation:

Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Affiliation Type Desc: Document Preparer  
Entity Name: Rich Beesmer  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact  
Entity Name: Rich Beesmer  
Entity Title: Not reported  
Affiliation Address: 2190 SO. PELLISSIER  
Affiliation City: WHITTIER  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 90601  
Affiliation Phone: (562) 254-8747

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: COLUSA & WASHINGTON BLDG 1600  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93405  
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer  
Entity Name: Larry L. Hopkins  
Entity Title: Director of Training  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: OPER ENGINEERS TRAINING TRUST  
Entity Title: Not reported  
Affiliation Address: 2190 S PELLISSIER PL  
Affiliation City: WHITTIER  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 90601  
Affiliation Phone: (562) 695-0611

Affiliation Type Desc: Operator  
Entity Name: Operating Engineers Training Trust

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (562) 695-0611

Affiliation Type Desc: Parent Corporation  
Entity Name: Operating Engineers Training Trust  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Primary Emergency Contact  
Entity Name: JAMES NIGHTINGALE  
Entity Title: INSTRUCTOR  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (562) 254-8699

Affiliation Type Desc: Secondary Emergency Contact  
Entity Name: David Kayl  
Entity Title: Project Coordinator  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (562) 254-8745

**CERS TANKS:**

Site ID: 140120  
CERS ID: 10623964  
CERS Description: Chemical Storage Facilities

**Violations:**

Site ID: 140120  
Site Name: OPER ENGINEERS TRAINING - CAMP SLO  
Violation Date: 03-20-2015  
Citation: HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple  
Violation Description: Haz Waste Generator Program - Administration/Documentation - General  
Violation Notes: Returned to compliance on 07/29/2015. UPDATE HAZARDOUS MATERIAL BUSINESS PLAN, THROUGH SLO COUNTY EHS PUBLIC PORTAL, BY 4/19/2015 1. APPLY FOR USER NAME AND PASSWORD FOR JAMES 2. UPDATE EMERGENCY CONTACT INFORMATION 3. ADD DIESEL FUEL TO CHEMICAL INVENTORY 4. REMOVE MOTOR OIL FROM CHEMICAL INVENTORY 5. REVIEW SITE MAP AND ENSURE DIESEL FUEL TRUCK IS ON MAP.

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

<p>Violation Division:          Violation Program:          Violation Source:</p>	<p>San Luis Obispo County Environmental Health          HW          CERS</p>
<p>Site ID:          Site Name:          Violation Date:          Citation:</p>	<p>140120          OPER ENGINEERS TRAINING - CAMP SLO          09-08-2017          HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)</p>
<p>Violation Description:</p>	<p>Failure to complete and electronically submit a site map with all required content.</p>
<p>Violation Notes:</p>	<p>UPDATE THE SITE MAP TO INCLUDE THE STORAGE LOCATION OF DIESEL FUEL AND USED OIL TRUCK. SUBMIT ELECTRONICALLY.</p>
<p>Violation Division:          Violation Program:          Violation Source:</p>	<p>San Luis Obispo County Environmental Health          HMRRP          CERS</p>
<p>Site ID:          Site Name:          Violation Date:          Citation:</p>	<p>140120          OPER ENGINEERS TRAINING - CAMP SLO          03-20-2015          HSC 6.5 Multiple - California Health and Safety Code, Chapter 6.5, Section(s) Multiple</p>
<p>Violation Description:</p>	<p>Haz Waste Generator Program - Training - General</p>
<p>Violation Notes:</p>	<p>Returned to compliance on 07/29/2015. SUBMIT COPY OF JAMES NIGHTINGALE HAZARD COMMUNICATION TRAINING DOCUMENTATION, TO YOUR INSPECTOR, BY 4/19/2015</p>
<p>Violation Division:          Violation Program:          Violation Source:</p>	<p>San Luis Obispo County Environmental Health          HW          CERS</p>
<p>Site ID:          Site Name:          Violation Date:          Citation:</p>	<p>140120          OPER ENGINEERS TRAINING - CAMP SLO          03-20-2015          HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections</p>
<p>Violation Description:</p>	<p>Haz Waste Generator Program - Operations/Maintenance - General</p>
<p>Violation Notes:</p>	<p>Returned to compliance on 07/29/2015. HAVE WASTE OIL PICKED UP BY HAZ WASTE HAULER AND SUBMIT COPY OF WASTE OIL MANIFEST, TO YOUR INSPECTOR, BY 4/19/2015</p>
<p>Violation Division:          Violation Program:          Violation Source:</p>	<p>San Luis Obispo County Environmental Health          HW          CERS</p>
<p>Site ID:          Site Name:          Violation Date:          Citation:</p>	<p>140120          OPER ENGINEERS TRAINING - CAMP SLO          09-08-2017          HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)</p>
<p>Violation Description:</p>	<p>Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.</p>
<p>Violation Notes:</p>	<p>ELECTRONICALLY UPDATE THE CHEMICAL INVENTORY WITH THESE CHANGES: 800-GAL DIESEL, USED OIL LARGEST CONTAINER=100-GAL. THE CHEMICAL INVENTORY MUST BE CERTIFIED AS ACCURATE ANNUALLY.</p>
<p>Violation Division:          Violation Program:          Violation Source:</p>	<p>San Luis Obispo County Environmental Health          HMRRP          CERS</p>

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Evaluation:

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 03-20-2015  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: HAZARDOUS MATERIAL BUSINESS PLAN IS REQUIRED TO BE CERTIFIED EVERY YEAR BY 3/1 IF YOU HAVE SIGNIFICANT CHANGES TO YOUR PLAN (EMERGENCY CONTACTS CHANGE, CHANGE IN CHEMICAL INVENTORY), UPDATE THE HMBP WITHIN 30 DAYS. FACILITY STORES HAZARDOUS MATERIALS ABOVE THRESHOLD QUANTITY AND QUALIFIES FOR PE726

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 07-29-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-17-2013  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Affiliation:

Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Affiliation Type Desc: Document Preparer  
Entity Name: Rich Beesmer  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact  
Entity Name: Rich Beesmer  
Entity Title: Not reported  
Affiliation Address: 2190 SO. PELLISSIER  
Affiliation City: WHITTIER  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 90601  
Affiliation Phone: (562) 254-8747

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: COLUSA & WASHINGTON BLDG 1600  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93405  
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer  
Entity Name: Larry L. Hopkins  
Entity Title: Director of Training  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: OPER ENGINEERS TRAINING TRUST  
Entity Title: Not reported  
Affiliation Address: 2190 S PELLISSIER PL  
Affiliation City: WHITTIER  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 90601  
Affiliation Phone: (562) 695-0611

Affiliation Type Desc: Operator  
Entity Name: Operating Engineers Training Trust

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**OPER ENGINEERS TRAINING - CAMP SLO (Continued)**

**S119002603**

Entity Title: Not reported  
 Affiliation Address: Not reported  
 Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: (562) 695-0611

Affiliation Type Desc: Parent Corporation  
 Entity Name: Operating Engineers Training Trust  
 Entity Title: Not reported  
 Affiliation Address: Not reported  
 Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: Not reported

Affiliation Type Desc: Primary Emergency Contact  
 Entity Name: JAMES NIGHTINGALE  
 Entity Title: INSTRUCTOR  
 Affiliation Address: Not reported  
 Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: (562) 254-8699

Affiliation Type Desc: Secondary Emergency Contact  
 Entity Name: David Kayl  
 Entity Title: Project Coordinator  
 Affiliation Address: Not reported  
 Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: (562) 254-8745

3

**CAMP SAN LUIS OBISPO HUTMENTS  
 HWY 1  
 SAN LUIS OBISPO, CA 93401**

**CPS-SLIC S113887347  
 CERS N/A**

< 1/8  
 1 ft.

**Relative:  
 Lower  
 Actual:  
 246 ft.**

CPS-SLIC:  
 Region: STATE  
**Facility Status: Completed - Case Closed**  
 Status Date: 12/07/2015  
 Global Id: T10000001485  
 Lead Agency: CENTRAL COAST RWQCB (REGION 3)  
 Lead Agency Case Number: Not reported  
 Latitude: 35.325206626677  
 Longitude: -120.73301166742  
 Case Type: Cleanup Program Site  
 Case Worker: SMS  
 Local Agency: Not reported  
 RB Case Number: SLIC#: 2034200  
 File Location: Regional Board

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**CAMP SAN LUIS OBISPO HUTMENTS (Continued)**

**S113887347**

Potential Media Affected: Other Groundwater (uses other than drinking water), Soil  
 Potential Contaminants of Concern: Heating Oil / Fuel Oil, Total Petroleum Hydrocarbons (TPH)  
 Site History: Fuel oil storage and distribution infrastructure for hutment heating historically leaked. Hutment areas have been investigated, and extent of petroleum contamination has been identified in soil and groundwater. Remediation techniques of soil excavation, chemical injection, and soil vapor extraction have removed petroleum to levels that are lower than detection levels, or below health and ecological risk levels. All petroleum storage tanks and piping have been removed. Hutments and old structures have been removed or replaced.

Click here to access the California GeoTracker records for this facility:

**CERS TANKS:**

Site ID: 219529  
 CERS ID: T10000001485  
 CERS Description: Cleanup Program Site

**Affiliation:**

Affiliation Type Desc: Regional Board Caseworker  
 Entity Name: SHEILA SODERBERG - CENTRAL COAST RWQCB (REGION 3)  
 Entity Title: Not reported  
 Affiliation Address: 895 AEROVISTA PLACE, SUITE 101  
 Affiliation City: SAN LUIS OBISPO  
 Affiliation State: CA  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: 8055493592

**4**

**MANHOLE NEAR CUESTA COLLEGE  
 CHILDREN'S CENTER  
 SAN LUIS OBISPO, CA 91372**

**Notify 65 S100179697  
 N/A**

< 1/8  
 1 ft.

**Relative:  
 Lower**

**NOTIFY 65:**

Date Reported: Not reported  
 Staff Initials: Not reported  
 Board File Number: Not reported  
 Facility Type: Not reported  
 Discharge Date: Not reported  
 Issue Date: Not reported  
 Incident Description: Not reported

**Actual:  
 243 ft.**

**5**

**CUESTA COLLEGE  
 HWY 1  
 SAN LUIS OBISPO, CA 93401**

**LUST U001584977  
 UST N/A  
 SWEEPS UST  
 HIST UST  
 CUPA Listings  
 CERS  
 CERS HAZ WASTE**

< 1/8  
 1 ft.

**Relative:  
 Lower**

**LUST:**

Lead Agency: SAN LUIS OBISPO, CITY OF  
 Case Type: LUST Cleanup Site  
 Geo Track: [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=T0607900113](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607900113)

**Actual:  
 226 ft.**

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Global Id: T0607900113  
Latitude: 35.3286  
Longitude: -120.7453  
Status: Completed - Case Closed  
Status Date: 01/20/1988  
Case Worker: UST  
RB Case Number: 397  
Local Agency: SAN LUIS OBISPO, CITY OF  
File Location: Not reported  
Local Case Number: Not reported  
Potential Media Affect: Soil  
Potential Contaminants of Concern: \* Solvents  
Site History: Not reported

LUST:

Global Id: T0607900113  
Contact Type: Local Agency Caseworker  
Contact Name: UST CASE WORKER  
Organization Name: SAN LUIS OBISPO, CITY OF  
Address: Not reported  
City: SAN LUIS OBISPO  
Email: Not reported  
Phone Number: 8057817560

LUST:

Global Id: T0607900113  
Action Type: Other  
Date: 03/10/1987  
Action: Leak Reported

Global Id: T0607900113  
Action Type: Other  
Date: 03/09/1987  
Action: Leak Discovery

LUST:

Global Id: T0607900113  
Status: Open - Case Begin Date  
Status Date: 03/09/1987

Global Id: T0607900113  
Status: Open - Site Assessment  
Status Date: 06/19/1987

Global Id: T0607900113  
Status: Open - Remediation  
Status Date: 08/27/1987

Global Id: T0607900113  
Status: Completed - Case Closed  
Status Date: 01/20/1988

LUST REG 3:

Region: 3  
Regional Board: Central Coast Region

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Facility County: San Luis Obispo  
Global ID: T0607900113  
Status: Case Closed  
Case Number: 397  
Local Case Num: Not reported  
Case Type: S  
Substance: Solvents  
Quantity: Not reported  
Abatement Method: U  
Leak Source: Tank  
Leak Cause: Corrosion  
How Stopped: Not reported  
How Discovered: Tank Closure  
Release Date: 03/10/1987  
Discovered Date: 3/9/87  
Enter Date: 03/16/1987  
Stop Date: Not reported  
Review Date: 01/20/1988  
Enforce Date: Not reported  
Close Date: 1/20/88  
Enforcement Type: Not reported  
Responsible Party: Not reported  
RP Address: Not reported  
Contact: Not reported  
Cross Street: Not reported  
Local Agency: San Luis Obispo, San Luis Obispo County  
Lead Agency: Local Agency  
Staff Initials: FJD  
Confirm Leak: Not reported  
Workplan: Not reported  
Prelim Assess: Not reported  
Pollution Char: 06/19/1987  
Remedial Plan: 8/27/87  
Remedial Action: Not reported  
Monitoring: / /  
Pilot Program: UST  
Interim Action: 0  
Funding: Not reported  
MTBE Class: \*  
Max MTBE Grnd Wtr: Not reported  
Max MTBE Soil: Not reported  
Max MTBE Data: / /  
MTBE Tested: NRQ  
Lat/Long: 35.2208751 / -120.635804  
Soil Qualifier: Not reported  
Grnd Wtr Qualifier: Not reported  
Mtbe Concentratn: 0  
Mtbe Fuel: 0  
Org Name: Not reported  
Basin Plan: 10.24  
Beneficial: Not reported  
Priority: 0  
UST Cleanup Fund ID: Not reported  
Suspended: Not reported  
Operator: Not reported  
Water System: CAL. CITIES - ROLLING HILLS/EDNA  
Well Name: CRESTMONT WELL (1992) - ABANDONED

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Distance From Well: 0  
Assigned Name: 31S/12E-13R01 M  
Summary: AN ANALYSIS OF SOILS AT EXCAVATION SITE, DATED 4-27-87, WAS DONE.

UST:

Facility ID: Not reported  
Permitting Agency: San Luis Obispo County Environmental Health  
Latitude: Not reported  
Longitude: Not reported

SWEEPS UST:

Status: Active  
Comp Number: 13001  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 03-16-93  
Action Date: 03-16-93  
Created Date: 02-29-88  
Owner Tank Id: 1504-1  
SWRCB Tank Id: 40-000-013001-000006  
Tank Status: A  
Capacity: 2000  
Active Date: 02-13-91  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: 3

Status: Active  
Comp Number: 13001  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 03-16-93  
Action Date: 03-16-93  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 40-000-013001-000007  
Tank Status: A  
Capacity: 2000  
Active Date: 02-13-91  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 13001  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 03-16-93  
Action Date: 03-16-93  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 40-000-013001-000008  
Tank Status: A  
Capacity: 1000

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Active Date: 08-30-93  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

**HIST UST:**

File Number: 0002B78B  
URL: <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002B78B.pdf>  
Region: STATE  
Facility ID: 00000023045  
Facility Type: Other  
Other Type: COMM. COLLEGE  
Contact Name: DEAN CHOATE  
Telephone: 8055442943  
Owner Name: CUESTA COLLEGE  
Owner Address: HIGHWAY #1  
Owner City,St,Zip: SAN LUIS OBISPO, CA 93401  
Total Tanks: 0006

Tank Num: 001  
Container Num: NO. 9100-1  
Year Installed: 1977  
Tank Capacity: 00001500  
Tank Used for: PRODUCT  
Type of Fuel: UNLEADED  
Container Construction Thickness: 3/16"  
Leak Detection: Visual, Stock Inventor

Tank Num: 002  
Container Num: 9100-2  
Year Installed: 1977  
Tank Capacity: 00001500  
Tank Used for: PRODUCT  
Type of Fuel: REGULAR  
Container Construction Thickness: 3/16"  
Leak Detection: Visual, Stock Inventor

Tank Num: 003  
Container Num: 9100-3  
Year Installed: Not reported  
Tank Capacity: 00001000  
Tank Used for: PRODUCT  
Type of Fuel: DIESEL  
Container Construction Thickness: Not reported  
Leak Detection: Visual, Stock Inventor

Tank Num: 004  
Container Num: 9100-4  
Year Installed: Not reported  
Tank Capacity: 00000500  
Tank Used for: WASTE  
Type of Fuel: WASTE OIL  
Container Construction Thickness: Not reported  
Leak Detection: Visual

Tank Num: 005

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Container Num: 4200-1  
Year Installed: 1975  
Tank Capacity: 00000550  
Tank Used for: WASTE  
Type of Fuel: WASTE OIL  
Container Construction Thickness: 12  
Leak Detection: Visual

Tank Num: 006  
Container Num: 1504-1  
Year Installed: Not reported  
Tank Capacity: 00000500  
Tank Used for: PRODUCT  
Type of Fuel: Not reported  
Container Construction Thickness: Not reported  
Leak Detection: None

[Click here for Geo Tracker PDF:](#)

**CUPA SAN LUIS OBISPO:**

Facility Id: FA0004661  
Program Element Code: 0301  
Program Element: UST FACILITY ANNUAL PERMIT  
Record Id: PR0002668  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.32419  
Longitude: -120.73798

Facility Id: FA0004661  
Program Element Code: 0705  
Program Element: STATE SITE SURCHARGE  
Record Id: PR0007138  
Cross Street: Not reported  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.32419  
Longitude: -120.73798

Facility Id: FA0004661  
Program Element Code: 0728  
Program Element: HAZMAT DISCLOSURE - 11+ HAZARDOUS MATERIALS  
Record Id: PR0001966  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.32419  
Longitude: -120.73798

Facility Id: FA0004661  
Program Element Code: 1126  
Program Element: HAZWASTE GEN (1-5 WASTE STREAMS)  
Record Id: PR0002497  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Latitude: 35.32419  
Longitude: -120.73798

**CERS TANKS:**

Site ID: 222777  
CERS ID: T0607900113  
CERS Description: Leaking Underground Storage Tank Cleanup Site

**Affiliation:**

Affiliation Type Desc: Local Agency Caseworker  
Entity Name: UST CASE WORKER - SAN LUIS OBISPO, CITY OF  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: 8057817560

Site ID: 109118  
CERS ID: 10436605  
CERS Description: Chemical Storage Facilities

**Violations:**

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.11 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.11

Violation Description: Failure to determine if wastes generated are hazardous waste by using generator knowledge or applying testing method.  
Violation Notes: Returned to compliance on 10/04/2017. DETERMINE THE CONTENTS OF THE 55-GAL DRUM STORED NEAR THE FUEL PUMPS. DRUM WAS FULL, HAD AN OILY LAYER AND SOLVENT-ODOR. NOTIFY YOUR CUPA INSPECTOR OF THE RESULTS OF THE DETERMINATION.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-23-2013  
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665

Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.  
Violation Notes: Returned to compliance on 08/23/2013. DRAIN FOR TANK 1 87 OVERSPILL BUCKET BLOCKED DUE TO PLASTIC BEADS FROM MATS. DRAIN REPLACED AND RETESTED. NOT A VIOLATION. CORRECTED ON SITE. FACILITY TO REPLACE MATS.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 02/22/2015. PLACE HAZARDOUS WASTE LABELS WITH ACCUMULATION START DATES ON ALL WASTE CONTAINERS IN CHEMISTRY STORAGE ROOM.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)  
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.  
Violation Notes: Returned to compliance on 10/04/2017. PROPERLY LABEL ALL HAZARDOUS WASTE CONTAINERS AS STATED IN THE VIOLATION TEXT, INCLUDING 5-GALLON CONTAINERS (CONTAINERS NEXT TO FUEL PUMPS, CONTAINERS AT ENG/TECH.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)  
Violation Description: Failure to keep a copy of each properly signed manifest for at least three years from the date the waste was accepted by the initial transporter. The manifest signed at the time the waste was accepted for transport shall be kept until receiving a signed copy from the designated facility which received the waste.  
Violation Notes: Returned to compliance on 10/04/2017. PROVIDE HAZARDOUS WASTE DISPOSAL RECORDS FOR MAINTENANCE SHOP: USED OIL, USED OIL FILTERS, WASTE ANTIFREEZE, WASTE ABSORBANT ENGINEERING AND TECHNOLOGY: USED OIL FILTERS, WASTE ANTIFREEZE  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)  
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.  
Violation Notes: Returned to compliance on 10/04/2017. UPDATE CHEMICAL INVENTORY AND SUBMIT ELECTRONICALLY.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 25189.5(a) - California Health and Safety Code, Chapter 6.5, Section(s) 25189.5(a)

Violation Description: Failure to properly dispose of hazardous waste at an authorized location.

Violation Notes: Returned to compliance on 02/22/2015. PROVIDE COPY OF WASTE MANIFESTS FROM 3/2014 THAT INCLUDE SIGNATURE FROM TDSF STATION. VIEWED MANIFESTS THAT WERE MISSING FINAL SIGNATURE FROM TSDf, PROVING TSDf ACCEPTED THE WASTE. COPY OF MANIFEST WITH FINAL SIGNATURE ARE REQUIRED TO BE SENT TO GENERATOR WITHIN 30 DAYS. RETAIN ALL MANIFESTS FOR 3 YEARS.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.95 Multiple Sections - California Health and Safety Code, Chapter 6.95, Section(s) Multiple Sections

Violation Description: Business Plan Program - Operations/Maintenance - General

Violation Notes: Returned to compliance on 03/06/2015. 1. PLACE WASTE OIL DRUM, IN MECHANIC SHOP, IN SECONDARY CONTAINMENT. OBSERVED WASTE OIL STAINING ON GROUND IN SHOP WHERE WASTE OIL DRUM IS STORED. 2. IMMEDIATELY REMOVE CONTAINER OF WASTE BRAKE FLUID FROM TOP OF FLAMMABLE MATERIAL STORAGE CABINET IN AUTOMOTIVE SHOP AND PLACE IN HAZARDOUS WASTE STORAGE AREA FOR SHOP. 3. PLACE WASTE AUTOMOTIVE BATTERIES IN MECHANICS SHOP ON PALLET, SHELF, OR SECONDARY CONTAINMENT. OBSERVED 5-6 AUTOMOTIVE BATTERIES ON FLOOR OF MECHANIC SHOP.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-03-2015  
Citation: HSC 6.95 Multiple Sections - California Health and Safety Code, Chapter 6.95, Section(s) Multiple Sections

Violation Description: Business Plan Program - Operations/Maintenance - General

Violation Notes: Returned to compliance on 01/01/2016. IMMEDIATELY PLACE ON SHELF THE 5 GALLON GLASS CONTAINER OF 10% FORMALIN ON THE GROUND IN SHED BY BIOLOGY DEPARTMENT.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-25-2017  
Citation: 23 CCR 16 2715(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)

Violation Description: Failure to comply with one or more of the following designated

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

operator (DO) monthly inspection requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been properly trained.

Violation Notes: Returned to compliance on 09/08/2017. SITE EMPLOYEE TRAINING BY THE DESIGNATED OPERATOR (DO) IS OVERDUE. WITHIN THE NEXT 7 DAYS, THE DO MUST TRAIN SITE EMPLOYEES. SUBMIT TRAINING DOCUMENTATION TO YOUR CUPA INSPECTOR LINNEA FAULKNER PREFERABLY VIA EMAIL AT LFAULKNER@CO.SLO.CA.US. ALARM IN DIESEL ATG SUMP WAS NOTED BY THE DO IN FEBRUARY 2017, BUT SERVICE WORK ORDER NOT ATTACHED TO MONTHLY DO REPORT OR FOUND IN BINDER. ENSURE DO PROPERLY DOCUMENTS ACTIONS TAKEN. SUBMIT AN UPDATED STATEMENT OF DESIGNATED OPERATOR TO YOUR CUPA INSPECTOR LINNEA FAULKNER PREFERABLY VIA EMAIL AT LFAULKNER@CO.SLO.CA.US.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: HSC 6.7 25292(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25292(e)

Violation Description: Failure to maintain secondary containment, as evidenced by failure of secondary containment testing.

Violation Notes: Returned to compliance on 10/07/2015. TANK 87-1 ANNULAR FAILED TESTING 3X. CHANGED TEST SET-UP AND STILL FAILED. TECHNICIAN SUSPECTED NEW BRASS COLLAR AT TOP OF ANNULAR MAY CAUSE FAILURE. IMMEDIATELY CONFIRM IF BRASS COLLAR IS CAUSE OF FAILURE, AND NOTIFY YOUR INSPECTOR.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections

Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General

Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-11-2014  
Citation: Un-Specified

Violation Description: UST Program - Administration/Documentation - For use of Local Ordinance only

Violation Notes: Returned to compliance on 10/20/2014.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)  
Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violation Notes: Returned to compliance on 02/22/2015. IMMEDIATELY LABEL ALL HAZARDOUS WASTE CONTAINERS IN CHEMISTRY STORAGE AREA WITH APPROPRIATE HAZARDOUS WASTE LABEL, COMPLETELY FILLED OUT, WITH START ACCUMULATION DATE. OBSERVED SOME CONTAINERS WITH HOME MADE LABELS AND SOME WITH NO LABEL. 3 CONTAINERS LABELED AS "USED PINK GOOP"?

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: HSC 6.7 25290.1(d) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(d)

Violation Description: Failure of a UST system installed on or after July 1, 2004 to be designed and constructed so as to detect the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment.

Violation Notes: Returned to compliance on 10/07/2015. DISCUSS WITH INSPECTOR SYSTEM TO KEEP SUMP LIDS RUST FREE AND MOISTURE FROM ACCUMULATING UNDER THE LIDS. MANWAY LIDS FOR TURBINE SUMPS AND FILL SUMPS VERY RUSTED, AND NO GASKETS. MATS KEPT ON LIDS 24/7, 365 DAYS/YR DUE TO WATER INTRUSION FROM RAIN AND VEHICLE WASH STATION. MATS MAY BE KEEPING MOISTURE UNDER LIDS AND CAUSING RUST.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22

Violation Description: Failure to properly manage used oil and/or fuel filters in accordance with the requirements.

Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)

Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Notes: Returned to compliance on 03/06/2015. 1.UPDATE CHEMICAL INVENTORY TO INCLUDE WASTE BRAKE FLUID. 2. INCLUDE IN CHEMICAL INVENTORY WASTE FROM CHEMISTRY LABS. THE INVENTORY CAN BE LISTED AS FLAMMABLE, CORROSIVE, REACTIVE, OR TOXIC WASTE, DEPENDING ON HAZARD CATAGORY.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: 40 CFR 1 265.171 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.171

Violation Description: Failure to accumulate hazardous waste in a container that is in good condition.

Violation Notes: Returned to compliance on 02/22/2015. IMMEDIATELY PLACE LID ON 5 GALLON BUCKET CONTAINING WASTE OIL FROM CRUSHED OIL FILTERS, IN AUTOMOTIVE HAZARDOUS WASTE STORAGE SHED. OBSERVED 5 GALLON BUCKET OF WASTE OIL WITH NO LID.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections

Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General

Violation Notes: Returned to compliance on 10/04/2017. DISCONTINUE STORING HAZARDOUS WASTE BEYOND PERMITTED ACCUMULATION TIME. USED OIL DRUM IN MAINTENANCE SHOP INDICATES AN ACCUMULATION TIME OF TWO YEARS, FULL 55-GALLON DRUM NEXT TO FUEL PUMPS.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: 23 CCR 16 2636(f)(5) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(5)

Violation Description: Failure to maintain all product piping outside the dispenser to be fail-safe and shut down the pump when a leak is detected and the monitoring system shuts down the pump or flow restriction occurs when a leak is detected in the under dispenser containment.

Violation Notes: Returned to compliance on 10/07/2015. 87-2 ANNULAR SENSOR FAILED, REPLACED, RETESTED AND PASSED.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 02/22/2015. SUBMIT COPIES OF SILVER WASTE DISPOSAL RECORDS FOR 2014 TO YOUR INSPECTOR BY 1/21/2015  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)  
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.  
Violation Notes: Returned to compliance on 03/06/2015. 1. SUBMIT COPIES OF EMPLOYEE (LAB TECHNICIANS, MECHANICS, AND POOL OPERATOR) TO YOUR INSPECTOR BY 1/21/2015 2. SET UP MEETING BETWEEN INSPECTOR AND CHEMISTRY LAB TECHNICIAN BY 1ST WEEK IN FEBRUARY 2015 TO DISCUSS TRAINING AND HAZARDOUS WASTE IN CHEMISTRY LABS 3. PROVIDE COPY OF POLICY FOR SAFE DELIVERY OF POOL CHEMICALS. POLICY SHOULD INCLUDE PROPER PPE, PROCEDURE FOR SAFE HOOK UP AND REMOVAL OF DELIVERY HOSE TO CHEMICAL TANKS, TRAINING REQUIREMENTS OF DRIVER AND CUESTA EMPLOYEES, STANDBY PERSONNEL IN CASE OF EMERGENCY, EMERGENCY CONTACT NUMBERS  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 25250.7 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.7  
Violation Description: Failure to prevent intentional contamination of used oil with other hazardous waste other than minimal amounts of vehicle fuel.  
Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-25-2017  
Citation: 23 CCR 16 2715(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(f)  
Violation Description: Failure to have at least one employee present during operating hours that has been trained in the proper operation and maintenance of the UST system by a designated operator (DO).  
Violation Notes: Returned to compliance on 08/30/2017. ANNUAL UST TRAINING IS OVERDUE. WITHIN THE NEXT 7 DAYS, HAVE APPLICABLE EMPLOYEES TRAINED. SUBMIT A COPY OF THE TRAINING DOCUMENTATION TO YOUR CUPA INSPECTOR LINNEA

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Division: FAULKNER PREFERABLY VIA EMAIL AT LFAULKNER@CO.SLO.CA.US.  
San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2016  
Citation: 23 CCR 16 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1)

Violation Description: Failure of the leak detection equipment to have an audible and visual alarm as required.

Violation Notes: Returned to compliance on 08/31/2016. THE AUDIBLE PORTION OF THE OVERFILL ALARM FAILED TO FUNCTION UPON INITIAL TESTING. IT WAS REPAIRED DURING THE INSPECTION AND TESTED AS FUNCTIONAL.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Evaluation:  
Eval General Type: Other/Unknown  
Eval Date: 03-06-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 03-06-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 06-02-2016  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 06-02-2016  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-11-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN VICTOR FROM B&T CONTRACTORS FOR ANNUAL MONITOR CERTIFICATION. RECOMMEND INVESTIGATE RUST/METAL IN DIESEL FUEL. FUEL MAY BE SITTING TOO LONG IN TANK BEFORE USE.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN MARCUS FOR ANNUAL MONITOR CERTIFICATION. LIGHT REPLACED FOR OVERFILL ALARM. DRAIN REPLACED IN TANK 1 87 PRODUCT OVERSPILL CONTAINER. PLASTIC BEADS FROM MATS. FACILITY TO REPLACE MATS. COPY OF ANNUAL MONITOR CERTIFICATION TEST REPORT TO BE SUBMITTED TO YOUR INSPECTOR WITHIN 30 DAYS, BY 9/22/13.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-25-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH MARCUS GARCIA OF B&T SERVICE STATION CONTRACTORS FOR ANNUAL UST LEAK MONITOR CERTIFICATION ONLY. ITEMS MARKED "N/A" WERE NOT PART OF THIS INSPECTION. TRIENNIAL SECONDARY CONTAINMENT TESTING IS DUE AUGUST 2018.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-31-2015  
Violations Found: Yes

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN JAMES WELSH FOR ANNUAL MONITOR CERTIFICATION AND SB989 TESTING. IMMEDIATELY DETERMINE CAUSE OF 87-1 TANK ANNULAR FAILURE. SUSPECT NEW BRASS COLLAR. TEST COLLAR AND ADVISE INSPECTOR. ALL SECONDARY LINES, 87-2 AND DIESEL ANNULARS, AND ALL HYDROSTATIC TESTING OF SUMPS PASSED. SUBMIT MONITOR CERTIFICATION REPORT AND SB989 REPORT TO YOUR INSPECTOR WITHIN 30 DAYS OF TESTING.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-31-2016  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH JAMES WELSCH OF OF B&T FOR ANNUAL UST LEAK MONITOR CERTIFICATION. SITE HAS STRAIGHT DROP TUBES; THEREFORE, AT THE NEXT ANNUAL INSPECTION BALL FLOATS MUST BE VERIFIED IN ACCORDANCE WITH FEDERAL REGULATIONS. DIESEL TURBINE NOT FUNCTIONING PROPERLY (INTERMITTENT FUNCTION). IT MAY BE REPLACED WITHOUT A PERMIT.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 09-08-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 09-18-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: ANNULAR TESTING ON 87-1 TANK PASSED 60 MINUTE VACUUM TESTING AFTER BRASS COLLAR REMOVED. MATS OVER MANWAYS TO BE PLACED ONLY DURING RAIN

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

EVENTS AND WHEN TRUCKS ARE IN WASH STATION. ALL VIOLATIONS CLEARED.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 10-04-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 10-04-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 10-07-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 10-20-2014  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: DOCUMENTATION PROVIDED BY UST TECHNICIAN CLEARING VIOLATION.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 11-17-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 12-03-2015  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: EXCELLENT LABELING IN CHEMISTRY HAZARDOUS CHEMICAL STORAGE AREA.  
OBSERVED NUMEROUS RUSTED AREAS ON METAL SUPPORTS IN POOL CHEMICAL STORAGE AREA.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 12-03-2015  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 12-22-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 12-22-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: RECOMMEND LABELING RED CONTAINERS IN ART DEPARTMENT "FLAMMABLE MATERIALS". RECOMMEND POOL CHEMICAL DELIVERY COMPANY PROVIDE TRAINING CERTIFICATIONS FOR DRIVERS.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Affiliation:  
Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Affiliation Type Desc: Document Preparer  
Entity Name: Kathy Casey / Stan Stubbs - Keenan  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact  
Entity Name: Terry Reece  
Entity Title: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93403  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93401  
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer  
Entity Name: Terry Reece  
Entity Title: Director of Facilities Services  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: San Luis Obispo County Community College District  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 93403  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: Operator  
Entity Name: CUESTA COLLEGE  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 546-3100

Affiliation Type Desc: Parent Corporation  
Entity Name: CUESTA COLLEGE  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Affiliation Type Desc: Primary Emergency Contact  
Entity Name: Terry Reece  
Entity Title: Director Facilities Services  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 235-6576

Affiliation Type Desc: Secondary Emergency Contact  
Entity Name: Bryan Millard  
Entity Title: CHIEF OF POLICE  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 336-9540

Affiliation Type Desc: UST Permit Applicant  
Entity Name: TERRY REECE  
Entity Title: DIRECTOR - MAINTENANCE, OPERATIONS & GROUNDS  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Property Owner Name  
Entity Name: SAN LUIS OBISPO CCD  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 93403-  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Tank Operator  
Entity Name: Terry Reece  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: San Luis Obispo  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 93403-  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Tank Owner  
Entity Name: SAN LUIS OBISPO CCD  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: United States

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Affiliation Zip: 934038106  
Affiliation Phone: (805) 546-3283

CERS HAZ WASTE:  
Site ID: 109118  
CERS ID: 10436605  
CERS Description: Hazardous Waste Generator

Violations:  
Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.11 - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.11  
Violation Description: Failure to determine if wastes generated are hazardous waste by using generator knowledge or applying testing method.  
Violation Notes: Returned to compliance on 10/04/2017. DETERMINE THE CONTENTS OF THE 55-GAL DRUM STORED NEAR THE FUEL PUMPS. DRUM WAS FULL, HAD AN OILY LAYER AND SOLVENT-ODOR. NOTIFY YOUR CUPA INSPECTOR OF THE RESULTS OF THE DETERMINATION.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-23-2013  
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665  
Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.  
Violation Notes: Returned to compliance on 08/23/2013. DRAIN FOR TANK 1 87 OVERSPILL BUCKET BLOCKED DUE TO PLASTIC BEADS FROM MATS. DRAIN REPLACED AND RETESTED. NOT A VIOLATION. CORRECTED ON SITE. FACILITY TO REPLACE MATS.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 02/22/2015. PLACE HAZARDOUS WASTE LABELS WITH ACCUMULATION START DATES ON ALL WASTE CONTAINERS IN CHEMISTRY STORAGE ROOM.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)  
Violation Description: Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.  
Violation Notes: Returned to compliance on 10/04/2017. PROPERLY LABEL ALL HAZARDOUS WASTE CONTAINERS AS STATED IN THE VIOLATION TEXT, INCLUDING 5-GALLON CONTAINERS (CONTAINERS NEXT TO FUEL PUMPS, CONTAINERS AT ENG/TECH.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: 22 CCR 12 66262.40(a) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.40(a)  
Violation Description: Failure to keep a copy of each properly signed manifest for at least three years from the date the waste was accepted by the initial transporter. The manifest signed at the time the waste was accepted for transport shall be kept until receiving a signed copy from the designated facility which received the waste.  
Violation Notes: Returned to compliance on 10/04/2017. PROVIDE HAZARDOUS WASTE DISPOSAL RECORDS FOR MAINTENANCE SHOP: USED OIL, USED OIL FILTERS, WASTE ANTIFREEZE, WASTE ABSORBANT ENGINEERING AND TECHNOLOGY: USED OIL FILTERS, WASTE ANTIFREEZE  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)  
Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.  
Violation Notes: Returned to compliance on 10/04/2017. UPDATE CHEMICAL INVENTORY AND SUBMIT ELECTRONICALLY.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 25189.5(a) - California Health and Safety Code, Chapter 6.5, Section(s) 25189.5(a)  
Violation Description: Failure to properly dispose of hazardous waste at an authorized location.  
Violation Notes: Returned to compliance on 02/22/2015. PROVIDE COPY OF WASTE MANIFESTS FROM 3/2014 THAT INCLUDE SIGNATURE FROM TDSF STATION. VIEWED MANIFESTS THAT WERE MISSING FINAL SIGNATURE FROM TSDf, PROVING TSDf ACCEPTED THE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Division: WASTE. COPY OF MANIFEST WITH FINAL SIGNATURE ARE REQUIRED TO BE SENT TO GENERATOR WITHIN 30 DAYS. RETAIN ALL MANIFESTS FOR 3 YEARS.  
Violation Program: San Luis Obispo County Environmental Health  
Violation Source: HW  
CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.95 Multiple Sections - California Health and Safety Code, Chapter 6.95, Section(s) Multiple Sections  
Violation Description: Business Plan Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 03/06/2015. 1. PLACE WASTE OIL DRUM, IN MECHANIC SHOP, IN SECONDARY CONTAINMENT. OBSERVED WASTE OIL STAINING ON GROUND IN SHOP WHERE WASTE OIL DRUM IS STORED. 2. IMMEDIATELY REMOVE CONTAINER OF WASTE BRAKE FLUID FROM TOP OF FLAMMABLE MATERIAL STORAGE CABINET IN AUTOMOTIVE SHOP AND PLACE IN HAZARDOUS WASTE STORAGE AREA FOR SHOP. 3. PLACE WASTE AUTOMOTIVE BATTERIES IN MECHANICS SHOP ON PALLET, SHELF, OR SECONDARY CONTAINMENT. OBSERVED 5-6 AUTOMOTIVE BATTERIES ON FLOOR OF MECHANIC SHOP.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-03-2015  
Citation: HSC 6.95 Multiple Sections - California Health and Safety Code, Chapter 6.95, Section(s) Multiple Sections  
Violation Description: Business Plan Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 01/01/2016. IMMEDIATELY PLACE ON SHELF THE 5 GALLON GLASS CONTAINER OF 10% FORMALIN ON THE GROUND IN SHED BY BIOLOGY DEPARTMENT.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-25-2017  
Citation: 23 CCR 16 2715(c) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(c)  
Violation Description: Failure to comply with one or more of the following designated operator (DO) monthly inspection requirements: Be performed by an ICC certified DO. Inspect monthly alarm history report, check that alarms are documented and responded to appropriately, and attach a copy. Inspect for the presence of liquid/debris in spill containers. Inspect for the presence of liquid/debris in under dispenser containment (UDC) and ensure that the monitoring equipment is positioned correctly. Inspect for liquid or debris in containment sumps where an alarm occurred with no service visit. Check that all testing and maintenance has been completed and documented. Verify that all facility employees have been properly trained.

Violation Notes: Returned to compliance on 09/08/2017. SITE EMPLOYEE TRAINING BY THE DESIGNATED OPERATOR (DO) IS OVERDUE. WITHIN THE NEXT 7 DAYS, THE DO MUST TRAIN SITE EMPLOYEES. SUBMIT TRAINING DOCUMENTATION TO YOUR CUPA INSPECTOR LINNEA FAULKNER PREFERABLY VIA EMAIL AT

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

LFAULKNER@CO.SLO.CA.US. ALARM IN DIESEL ATG SUMP WAS NOTED BY THE DO IN FEBRUARY 2017, BUT SERVICE WORK ORDER NOT ATTACHED TO MONTHLY DO REPORT OR FOUND IN BINDER. ENSURE DO PROPERLY DOCUMENTS ACTIONS TAKEN. SUBMIT AN UPDATED STATEMENT OF DESIGNATED OPERATOR TO YOUR CUPA INSPECTOR LINNEA FAULKNER PREFERABLY VIA EMAIL AT LFAULKNER@CO.SLO.CA.US.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: HSC 6.7 25292(e) - California Health and Safety Code, Chapter 6.7, Section(s) 25292(e)

Violation Description: Failure to maintain secondary containment, as evidenced by failure of secondary containment testing.

Violation Notes: Returned to compliance on 10/07/2015. TANK 87-1 ANNULAR FAILED TESTING 3X. CHANGED TEST SET-UP AND STILL FAILED. TECHNICIAN SUSPECTED NEW BRASS COLLAR AT TOP OF ANNULAR MAY CAUSE FAILURE. IMMEDIATELY CONFIRM IF BRASS COLLAR IS CAUSE OF FAILURE, AND NOTIFY YOUR INSPECTOR.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections

Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General

Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-11-2014  
Citation: Un-Specified  
Violation Description: UST Program - Administration/Documentation - For use of Local Ordinance only

Violation Notes: Returned to compliance on 10/20/2014.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: 22 CCR 12 66262.34(f) - California Code of Regulations, Title 22, Chapter 12, Section(s) 66262.34(f)

Violation Description: Failure to properly label hazardous waste accumulation containers with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date.

Violation Notes: Returned to compliance on 02/22/2015. IMMEDIATELY LABEL ALL HAZARDOUS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

WASTE CONTAINERS IN CHEMISTRY STORAGE AREA WITH APPROPRIATE HAZARDOUS WASTE LABEL, COMPLETELY FILLED OUT, WITH START ACCUMULATION DATE. OBSERVED SOME CONTAINERS WITH HOME MADE LABELS AND SOME WITH NO LABEL. 3 CONTAINERS LABELED AS "USED PINK GOOP"?

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: HSC 6.7 25290.1(d) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(d)

Violation Description: Failure of a UST system installed on or after July 1, 2004 to be designed and constructed so as to detect the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment.

Violation Notes: Returned to compliance on 10/07/2015. DISCUSS WITH INSPECTOR SYSTEM TO KEEP SUMP LIDS RUST FREE AND MOISTURE FROM ACCUMULATING UNDER THE LIDS. MANWAY LIDS FOR TURBINE SUMPS AND FILL SUMPS VERY RUSTED, AND NO GASKETS. MATS KEPT ON LIDS 24/7, 365 DAYS/YR DUE TO WATER INTRUSION FROM RAIN AND VEHICLE WASH STATION. MATS MAY BE KEEPING MOISTURE UNDER LIDS AND CAUSING RUST.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 25250.22 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.22

Violation Description: Failure to properly manage used oil and/or fuel filters in accordance with the requirements.

Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)

Violation Description: Failure to complete and electronically submit hazardous material inventory information for all reportable hazardous materials on site at or above reportable quantities.

Violation Notes: Returned to compliance on 03/06/2015. 1.UPDATE CHEMICAL INVENTORY TO INCLUDE WASTE BRAKE FLUID. 2. INCLUDE IN CHEMICAL INVENTORY WASTE FROM CHEMISTRY LABS. THE INVENTORY CAN BE LISTED AS FLAMMABLE, CORROSIVE, REACTIVE, OR TOXIC WASTE, DEPENDING ON HAZARD CATAGORY.

Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: 40 CFR 1 265.171 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.171  
Violation Description: Failure to accumulate hazardous waste in a container that is in good condition.  
Violation Notes: Returned to compliance on 02/22/2015. IMMEDIATELY PLACE LID ON 5 GALLON BUCKET CONTAINING WASTE OIL FROM CRUSHED OIL FILTERS, IN AUTOMOTIVE HAZARDOUS WASTE STORAGE SHED. OBSERVED 5 GALLON BUCKET OF WASTE OIL WITH NO LID.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Hazardous Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 10/04/2017. DISCONTINUE STORING HAZARDOUS WASTE BEYOND PERMITTED ACCUMULATION TIME. USED OIL DRUM IN MAINTENANCE SHOP INDICATES AN ACCUMULATION TIME OF TWO YEARS, FULL 55-GALLON DRUM NEXT TO FUEL PUMPS.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2015  
Citation: 23 CCR 16 2636(f)(5) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(5)  
Violation Description: Failure to maintain all product piping outside the dispenser to be fail-safe and shut down the pump when a leak is detected and the monitoring system shuts down the pump or flow restriction occurs when a leak is detected in the under dispenser containment.  
Violation Notes: Returned to compliance on 10/07/2015. 87-2 ANNULAR SENSOR FAILED, REPLACED, RETESTED AND PASSED.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 12-22-2014  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General  
Violation Notes: Returned to compliance on 02/22/2015. SUBMIT COPIES OF SILVER WASTE DISPOSAL RECORDS FOR 2014 TO YOUR INSPECTOR BY 1/21/2015  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Date: 12-22-2014  
Citation: HSC 6.95 25505(a)(4) - California Health and Safety Code, Chapter 6.95, Section(s) 25505(a)(4)  
Violation Description: Failure to provide initial and annual training to all employees in safety procedures in the event of a release or threatened release of a hazardous material or failure to document and maintain training records for a minimum of three years.  
Violation Notes: Returned to compliance on 03/06/2015. 1. SUBMIT COPIES OF EMPLOYEE (LAB TECHNICIANS, MECHANICS, AND POOL OPERATOR) TO YOUR INSPECTOR BY 1/21/2015 2. SET UP MEETING BETWEEN INSPECTOR AND CHEMISTRY LAB TECHNICIAN BY 1ST WEEK IN FEBRUARY 2015 TO DISCUSS TRAINING AND HAZARDOUS WASTE IN CHEMISTRY LABS 3. PROVIDE COPY OF POLICY FOR SAFE DELIVERY OF POOL CHEMICALS. POLICY SHOULD INCLUDE PROPER PPE, PROCEDURE FOR SAFE HOOK UP AND REMOVAL OF DELIVERY HOSE TO CHEMICAL TANKS, TRAINING REQUIREMENTS OF DRIVER AND CUESTA EMPLOYEES, STANDBY PERSONNEL IN CASE OF EMERGENCY, EMERGENCY CONTACT NUMBERS  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HMRRP  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 09-08-2017  
Citation: HSC 6.5 25250.7 - California Health and Safety Code, Chapter 6.5, Section(s) 25250.7  
Violation Description: Failure to prevent intentional contamination of used oil with other hazardous waste other than minimal amounts of vehicle fuel.  
Violation Notes: Returned to compliance on 10/04/2017. SEE VIOLATION GT07, GT08  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: HW  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-25-2017  
Citation: 23 CCR 16 2715(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2715(f)  
Violation Description: Failure to have at least one employee present during operating hours that has been trained in the proper operation and maintenance of the UST system by a designated operator (DO).  
Violation Notes: Returned to compliance on 08/30/2017. ANNUAL UST TRAINING IS OVERDUE. WITHIN THE NEXT 7 DAYS, HAVE APPLICABLE EMPLOYEES TRAINED. SUBMIT A COPY OF THE TRAINING DOCUMENTATION TO YOUR CUPA INSPECTOR LINNEA FAULKNER PREFERABLY VIA EMAIL AT LFAULKNER@CO.SLO.CA.US.  
Violation Division: San Luis Obispo County Environmental Health  
Violation Program: UST  
Violation Source: CERS

Site ID: 109118  
Site Name: CUESTA COLLEGE  
Violation Date: 08-31-2016  
Citation: 23 CCR 16 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2632(c)(2)(B), 2634(d)(1)(a), 2636(f)(1)  
Violation Description: Failure of the leak detection equipment to have an audible and visual alarm as required.  
Violation Notes: Returned to compliance on 08/31/2016. THE AUDIBLE PORTION OF THE

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Violation Division: OVERFILL ALARM FAILED TO FUNCTION UPON INITIAL TESTING. IT WAS REPAIRED DURING THE INSPECTION AND TESTED AS FUNCTIONAL.  
Violation Program: San Luis Obispo County Environmental Health  
Violation Source: UST  
CERS

Evaluation:  
Eval General Type: Other/Unknown  
Eval Date: 03-06-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 03-06-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 06-02-2016  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 06-02-2016  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-11-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN VICTOR FROM B&T CONTRACTORS FOR ANNUAL MONITOR CERTIFICATION. RECOMMEND INVESTIGATE RUST/METAL IN DIESEL FUEL. FUEL MAY BE SITTING TOO LONG IN TANK BEFORE USE.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: No

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-23-2013  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN MARCUS FOR ANNUAL MONITOR CERTIFICATION. LIGHT REPLACED FOR OVERFILL ALARM. DRAIN REPLACED IN TANK 1 87 PRODUCT OVERSPILL CONTAINER. PLASTIC BEADS FROM MATS. FACILITY TO REPLACE MATS. COPY OF ANNUAL MONITOR CERTIFICATION TEST REPORT TO BE SUBMITTED TO YOUR INSPECTOR WITHIN 30 DAYS, BY 9/22/13.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-25-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH MARCUS GARCIA OF B&T SERVICE STATION CONTRACTORS FOR ANNUAL UST LEAK MONITOR CERTIFICATION ONLY. ITEMS MARKED "N/A" WERE NOT PART OF THIS INSPECTION. TRIENNIAL SECONDARY CONTAINMENT TESTING IS DUE AUGUST 2018.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-31-2015  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH ICC TECHNICIAN JAMES WELSH FOR ANNUAL MONITOR CERTIFICATION AND SB989 TESTING. IMMEDIATELY DETERMINE CAUSE OF 87-1 TANK ANNULAR FAILURE. SUSPECT NEW BRASS COLLAR. TEST COLLAR AND ADVISE INSPECTOR. ALL SECONDARY LINES, 87-2 AND DIESEL ANNULARS, AND ALL HYDROSTATIC TESTING OF SUMPS PASSED. SUBMIT MONITOR CERTIFICATION REPORT AND SB989 REPORT TO YOUR INSPECTOR WITHIN 30 DAYS OF TESTING.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 08-31-2016  
Violations Found: Yes

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval Type: Routine done by local agency  
Eval Notes: ON SITE WITH JAMES WELSCH OF OF B&T FOR ANNUAL UST LEAK MONITOR CERTIFICATION. SITE HAS STRAIGHT DROP TUBES; THEREFORE, AT THE NEXT ANNUAL INSPECTION BALL FLOATS MUST BE VERIFIED IN ACCORDANCE WITH FEDERAL REGULATIONS. DIESEL TURBINE NOT FUNCTIONING PROPERLY (INTERMITTENT FUNCTION). IT MAY BE REPLACED WITHOUT A PERMIT.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 09-08-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-08-2017  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 09-18-2015  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: ANNULAR TESTING ON 87-1 TANK PASSED 60 MINUTE VACUUM TESTING AFTER BRASS COLLAR REMOVED. MATS OVER MANWAYS TO BE PLACED ONLY DURING RAIN EVENTS AND WHEN TRUCKS ARE IN WASH STATION. ALL VIOLATIONS CLEARED.

Eval Division: San Luis Obispo County Environmental Health  
Eval Program: UST  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 10-04-2017  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval General Type:	Other/Unknown
Eval Date:	10-04-2017
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	10-07-2015
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	10-20-2014
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	DOCUMENTATION PROVIDED BY UST TECHNICIAN CLEARING VIOLATION.
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	11-17-2017
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	Not reported
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	12-03-2015
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	EXCELLENT LABELING IN CHEMISTRY HAZARDOUS CHEMICAL STORAGE AREA. OBSERVED NUMEROUS RUSTED AREAS ON METAL SUPPORTS IN POOL CHEMICAL STORAGE AREA.
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	12-03-2015
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Not reported
Eval Division:	San Luis Obispo County Environmental Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Eval Date: 12-22-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 12-22-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: RECOMMEND LABELING RED CONTAINERS IN ART DEPARTMENT "FLAMMABLE MATERIALS". RECOMMEND POOL CHEMICAL DELIVERY COMPANY PROVIDE TRAINING CERTIFICATIONS FOR DRIVERS.  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Affiliation:  
Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Affiliation Type Desc: Document Preparer  
Entity Name: Kathy Casey / Stan Stubbs - Keenan  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact  
Entity Name: Terry Reece  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93403  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Affiliation Zip: 93401  
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer  
Entity Name: Terry Reece  
Entity Title: Director of Facilities Services  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: San Luis Obispo County Community College District  
Entity Title: Not reported  
Affiliation Address: PO BOX 8106  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 93403  
Affiliation Phone: (805) 546-3283

Affiliation Type Desc: Operator  
Entity Name: CUESTA COLLEGE  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 546-3100

Affiliation Type Desc: Parent Corporation  
Entity Name: CUESTA COLLEGE  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Primary Emergency Contact  
Entity Name: Terry Reece  
Entity Title: Director Facilities Services  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 235-6576

Affiliation Type Desc: Secondary Emergency Contact  
Entity Name: Bryan Millard  
Entity Title: CHIEF OF POLICE  
Affiliation Address: Not reported

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**CUESTA COLLEGE (Continued)**

**U001584977**

Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: (805) 336-9540

Affiliation Type Desc: UST Permit Applicant  
 Entity Name: TERRY REECE  
 Entity Title: DIRECTOR - MAINTENANCE, OPERATIONS & GROUNDS  
 Affiliation Address: Not reported  
 Affiliation City: Not reported  
 Affiliation State: Not reported  
 Affiliation Country: Not reported  
 Affiliation Zip: Not reported  
 Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Property Owner Name  
 Entity Name: SAN LUIS OBISPO CCD  
 Entity Title: Not reported  
 Affiliation Address: PO BOX 8106  
 Affiliation City: SAN LUIS OBISPO  
 Affiliation State: CA  
 Affiliation Country: United States  
 Affiliation Zip: 93403-  
 Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Tank Operator  
 Entity Name: Terry Reece  
 Entity Title: Not reported  
 Affiliation Address: PO BOX 8106  
 Affiliation City: San Luis Obispo  
 Affiliation State: CA  
 Affiliation Country: United States  
 Affiliation Zip: 93403-  
 Affiliation Phone: (805) 546-3283

Affiliation Type Desc: UST Tank Owner  
 Entity Name: SAN LUIS OBISPO CCD  
 Entity Title: Not reported  
 Affiliation Address: PO BOX 8106  
 Affiliation City: SAN LUIS OBISPO  
 Affiliation State: CA  
 Affiliation Country: United States  
 Affiliation Zip: 934038106  
 Affiliation Phone: (805) 546-3283

6

**CAMP SAN LUIS OBISPO BRIDGE PAINT REHAB  
 HIGHWAY 1  
 SAN LUIS OBISPO, CA 93405**

**CPS-SLIC S110326774  
 CERS N/A**

< 1/8  
 1 ft.

**Relative:  
 Higher  
 Actual:  
 266 ft.**

CPS-SLIC:  
 Region: STATE  
**Facility Status: Completed - Case Closed**  
 Status Date: 06/03/2010  
 Global Id: T10000002060  
 Lead Agency: CENTRAL COAST RWQCB (REGION 3)

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CAMP SAN LUIS OBISPO BRIDGE PAINT REHAB (Continued)**

**S110326774**

Lead Agency Case Number: Not reported  
Latitude: 35.3278358263547  
Longitude: -120.732042789459  
Case Type: Cleanup Program Site  
Case Worker: DS  
Local Agency: Not reported  
RB Case Number: Not reported  
File Location: Not reported  
Potential Media Affected: Not reported  
Potential Contaminants of Concern: Not reported  
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

**CERS TANKS:**

Site ID: 226637  
CERS ID: T10000002060  
CERS Description: Cleanup Program Site

**Affiliation:**

Affiliation Type Desc: Regional Board Caseworker  
Entity Name: DAVID SCHWARTZBART - CENTRAL COAST RWQCB (REGION 3)  
Entity Title: Not reported  
Affiliation Address: 895 AEROVISTA PLACE, SUITE 101  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

7

**CAL FIRE CUESTA CAMP SLO  
BLDG 962, HWY 1, CAMP SLO  
SAN LUIS OBISPO, CA 93401**

**CUPA Listings S112263477  
N/A**

< 1/8  
1 ft.

**Relative:  
Higher**

**Actual:  
275 ft.**

**CUPA SAN LUIS OBISPO:**

Facility Id: FA0002379  
Program Element Code: 0726  
Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id: PR0001916  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.32969  
Longitude: 120.73295

Facility Id: FA0002379  
Program Element Code: 1126  
Program Element: HAZWASTE GEN (1-5 WASTE STREAMS)  
Record Id: PR0002379  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.32969  
Longitude: 120.73295

Facility Id: FA0002379

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CAL FIRE CUESTA CAMP SLO (Continued)**

**S112263477**

Program Element Code: 1201  
Program Element: AGT ANNUAL TANK PERMIT  
Record Id: PR0008467  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.32969  
Longitude: 120.73295

**8**  
**NNW**  
**< 1/8**  
**0.035 mi.**  
**183 ft.**

**DAIRY CREEK GOLF COURSE**  
**2950 DAIRY CREEK RD**  
**SAN LUIS OBISPO, CA 93405**

**CUPA Listings S110374878**  
**CERS HAZ WASTE N/A**

**Relative:**  
**Higher**  
**Actual:**  
**281 ft.**

CUPA SAN LUIS OBISPO:

Facility Id: FA0002359  
Program Element Code: 0705  
Program Element: STATE SITE SURCHARGE  
Record Id: PR0006898  
Cross Street: Not reported  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.33311  
Longitude: -120.73407

Facility Id: FA0002359  
Program Element Code: 0726  
Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id: PR0001882  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.33311  
Longitude: -120.73407

Facility Id: FA0002359  
Program Element Code: 1126  
Program Element: HAZWASTE GEN (1-5 WASTE STREAMS)  
Record Id: PR0002359  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.33311  
Longitude: -120.73407

CERS HAZ WASTE:

Site ID: 23734  
CERS ID: 10438030  
CERS Description: Hazardous Waste Generator

Violations:

Site ID: 23734  
Site Name: DAIRY CREEK GOLF COURSE  
Violation Date: 11-25-2014  
Citation: HSC 6.5 Multiple Sections - California Health and Safety Code, Chapter 6.5, Section(s) Multiple Sections  
Violation Description: Haz Waste Generator Program - Operations/Maintenance - General

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**DAIRY CREEK GOLF COURSE (Continued)**

**S110374878**

Violation Notes: Returned to compliance on 12/01/2014. SUBMIT COPY OF HAZARDOUS WASTE MANIFEST TO YOUR INSPECTOR BY 12/25/2104

Violation Division: San Luis Obispo County Environmental Health

Violation Program: HW

Violation Source: CERS

Site ID: 23734

Site Name: DAIRY CREEK GOLF COURSE

Violation Date: 11-25-2014

Citation: HSC 6.95 25508(d) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(d)

Violation Description: Failure to complete and/or electronically submit a business plan when storing/handling a hazardous material at or above reportable quantities.

Violation Notes: Returned to compliance on 12/01/2014. UPDATE/CERTIFY HAZARDOUS MATERIAL BUSINESS PLAN, THROUGH PUBLIC PORTAL, BY 12/25/2014.

Violation Division: San Luis Obispo County Environmental Health

Violation Program: HMRRP

Violation Source: CERS

Evaluation:

Eval General Type: Compliance Evaluation Inspection

Eval Date: 10-22-2015

Violations Found: No

Eval Type: Routine done by local agency

Eval Notes: Not reported

Eval Division: San Luis Obispo County Environmental Health

Eval Program: HMRRP

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

Eval Date: 10-22-2015

Violations Found: No

Eval Type: Routine done by local agency

Eval Notes: Not reported

Eval Division: San Luis Obispo County Environmental Health

Eval Program: HW

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

Eval Date: 11-18-2016

Violations Found: No

Eval Type: Routine done by local agency

Eval Notes: Not reported

Eval Division: San Luis Obispo County Environmental Health

Eval Program: HMRRP

Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

Eval Date: 11-18-2016

Violations Found: No

Eval Type: Routine done by local agency

Eval Notes: Not reported

Eval Division: San Luis Obispo County Environmental Health

Eval Program: HW

Eval Source: CERS

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**DAIRY CREEK GOLF COURSE (Continued)**

**S110374878**

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 11-25-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 11-25-2014  
Violations Found: Yes  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 12-31-2014  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Other/Unknown  
Eval Date: 12-31-2014  
Violations Found: No  
Eval Type: Other, not routine, done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HW  
Eval Source: CERS

Coordinates:  
Site ID: 23734  
Facility Name: DAIRY CREEK GOLF COURSE  
Env Int Type Code: HWG  
Program ID: 10438030  
Coord Name: Not reported  
Ref Point Type Desc: Center of a facility or station.  
Latitude: 35.333240  
Longitude: -120.733390

Affiliation:  
Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**DAIRY CREEK GOLF COURSE (Continued)**

**S110374878**

Affiliation Type Desc: Environmental Contact  
Entity Name: Albert Nunes  
Entity Title: Not reported  
Affiliation Address: 2950 Dairy Creek Rd  
Affiliation City: San Luis Obispo  
Affiliation State: Ca  
Affiliation Country: Not reported  
Affiliation Zip: 93405  
Affiliation Phone: (805) 540-9418

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: 1087 SANTA ROSA ST  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93405  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: COUNTY OF SAN LUIS OBISPO  
Entity Title: Not reported  
Affiliation Address: 1087 SANTA ROSA ST  
Affiliation City: SAN LUIS OBISPO  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 93408  
Affiliation Phone: (805) 781-5121

Affiliation Type Desc: Operator  
Entity Name: COUNTY OF SAN LUIS OBISPO  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 781-1325

Affiliation Type Desc: Parent Corporation  
Entity Name: DAIRY CREEK GOLF COURSE  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Primary Emergency Contact  
Entity Name: NUNES, ALBERT  
Entity Title: GOLF COURSE SUPERVISOR  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**DAIRY CREEK GOLF COURSE (Continued)**

**S110374878**

Affiliation Zip: Not reported  
Affiliation Phone: (805) 781-5200  
  
Affiliation Type Desc: Secondary Emergency Contact  
Entity Name: HEPTIG, JOSH  
Entity Title: GOLF COURSE SUPERINTENDENT  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (805) 781-5200

**9**  
**NW**  
**< 1/8**  
**0.043 mi.**  
**227 ft.**

**SLO CO SUPER. OF SCHOOLS**  
**3420 WATSON DR**  
**SAN LUIS OBISPO, CA 93405**

**CUPA Listings S106102291**  
**HAZNET N/A**  
**NPDES**  
**WDS**  
**CIWQS**

**Relative:**  
**Higher**  
**Actual:**  
**285 ft.**

CUPA SAN LUIS OBISPO:  
Facility Id: FA0001861  
Program Element Code: 0726  
Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id: PR0001861  
Cross Street: Not reported  
Status Code: 01  
Status: Active, billable  
Latitude: 35.33500  
Longitude: -120.74448  
  
Facility Id: FA0001861  
Program Element Code: 1201  
Program Element: AGT ANNUAL TANK PERMIT  
Record Id: PR0006625  
Cross Street: Not reported  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.33500  
Longitude: -120.74448

HAZNET:  
envid: S106102291  
Year: 2015  
GEPAID: CAC002840030  
Contact: BILL BARNHILL  
Telephone: 8057827250  
Mailing Name: Not reported  
Mailing Address: 3420 WATSON DR  
Mailing City,St,Zip: SAN LUIS OBISPO, CA 934057828  
Gen County: San Luis Obispo  
TSD EPA ID: CAD009007626  
TSD County: Los Angeles  
Waste Category: Asbestos containing waste  
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill( To Include On-Site Treatment And/Or Stabilization)  
Tons: 0.23

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SLO CO SUPER. OF SCHOOLS (Continued)**

**S106102291**

Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: San Luis Obispo  
  
envid: S106102291  
Year: 2015  
GEPAID: CAC002827239  
Contact: BILL BARNHILL  
Telephone: 8054419412  
Mailing Name: Not reported  
Mailing Address: 3420 WATSON DR  
Mailing City, St, Zip: SAN LUIS OBISPO, CA 934057828  
Gen County: San Luis Obispo  
TSD EPA ID: CAT080013352  
TSD County: Los Angeles  
Waste Category: Tank bottom waste  
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration,  
Organics Recovery Ect  
  
Tons: 0.834  
Cat Decode: Not reported  
Method Decode: Not reported  
Facility County: San Luis Obispo

**NPDES:**

Npdes Number: Not reported  
Facility Status: Not reported  
Agency Id: Not reported  
Region: 3  
Regulatory Measure Id: 185774  
Order No: Not reported  
Regulatory Measure Type: Industrial  
Place Id: Not reported  
WDID: 3 401018176  
Program Type: Not reported  
Adoption Date Of Regulatory Measure: Not reported  
Effective Date Of Regulatory Measure: Not reported  
Expiration Date Of Regulatory Measure: Not reported  
Termination Date Of Regulatory Measure: 09/11/2015  
Discharge Name: Not reported  
Discharge Address: Not reported  
Discharge City: Not reported  
Discharge State: Not reported  
Discharge Zip: Not reported  
RECEIVED DATE: 05/09/2008  
PROCESSED DATE: 06/11/2003  
STATUS CODE NAME: Terminated  
STATUS DATE: 12/01/2015  
PLACE SIZE: 1  
PLACE SIZE UNIT: Acres  
FACILITY CONTACT NAME: Ashley Lightfoot  
FACILITY CONTACT TITLE: Director  
FACILITY CONTACT PHONE: 805-782-7257  
FACILITY CONTACT PHONE EXT: Not reported  
FACILITY CONTACT EMAIL: alightfoot@slococoe.org  
OPERATOR NAME: San Luis Obispo Cnty Office  
OPERATOR ADDRESS: 3420 Watson Dr  
OPERATOR CITY: San Luis Obispo

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SLO CO SUPER. OF SCHOOLS (Continued)**

**S106102291**

OPERATOR STATE: California  
OPERATOR ZIP: 93405  
OPERATOR CONTACT NAME: Ashley Lightfoot  
OPERATOR CONTACT TITLE: Director  
OPERATOR CONTACT PHONE: 805-782-7257  
OPERATOR CONTACT PHONE EXT: Not reported  
OPERATOR CONTACT EMAIL: alightfoot@slocoe.org  
OPERATOR TYPE: Other  
DEVELOPER NAME: Not reported  
DEVELOPER ADDRESS: Not reported  
DEVELOPER CITY: Not reported  
DEVELOPER STATE: California  
DEVELOPER ZIP: Not reported  
DEVELOPER CONTACT NAME: Not reported  
DEVELOPER CONTACT TITLE: Not reported  
CONSTYPE LINEAR UTILITY IND: Not reported  
EMERGENCY PHONE NO: 805-782-7257  
EMERGENCY PHONE EXT: Not reported  
CONSTYPE ABOVE GROUND IND: Not reported  
CONSTYPE BELOW GROUND IND: Not reported  
CONSTYPE CABLE LINE IND: Not reported  
CONSTYPE COMM LINE IND: Not reported  
CONSTYPE COMMERTIAL IND: Not reported  
CONSTYPE ELECTRICAL LINE IND: Not reported  
CONSTYPE GAS LINE IND: Not reported  
CONSTYPE INDUSTRIAL IND: Not reported  
CONSTYPE OTHER DESRIPTION: Not reported  
CONSTYPE OTHER IND: Not reported  
CONSTYPE RECONS IND: Not reported  
CONSTYPE RESIDENTIAL IND: Not reported  
CONSTYPE TRANSPORT IND: Not reported  
CONSTYPE UTILITY DESCRIPTION: Not reported  
CONSTYPE UTILITY IND: Not reported  
CONSTYPE WATER SEWER IND: Not reported  
DIR DISCHARGE USWATER IND: N  
RECEIVING WATER NAME: Chumashi Creek  
CERTIFIER NAME: David Keil  
CERTIFIER TITLE: Director of Operations  
CERTIFICATION DATE: 16-JUN-15  
PRIMARY SIC: 4151-School Buses  
SECONDARY SIC: Not reported  
TERTIARY SIC: Not reported  
  
Npdes Number: CAS000001  
Facility Status: Terminated  
Agency Id: 0  
Region: 3  
Regulatory Measure Id: 185774  
Order No: 97-03-DWQ  
Regulatory Measure Type: Enrollee  
Place Id: Not reported  
WDID: 3 40I018176  
Program Type: Industrial  
Adoption Date Of Regulatory Measure: Not reported  
Effective Date Of Regulatory Measure: 06/11/2003  
Expiration Date Of Regulatory Measure: Not reported  
Termination Date Of Regulatory Measure: 09/11/2015

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

SLO CO SUPER. OF SCHOOLS (Continued)

S106102291

Discharge Name:	San Luis Obispo Cnty Office
Discharge Address:	3420 Watson Dr
Discharge City:	San Luis Obispo
Discharge State:	California
Discharge Zip:	93405
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SLO CO SUPER. OF SCHOOLS (Continued)**

**S106102291**

CERTIFICATION DATE: Not reported  
PRIMARY SIC: Not reported  
SECONDARY SIC: Not reported  
TERTIARY SIC: Not reported

**WDS:**

Facility ID: Central Coastal 40I018176  
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.  
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.  
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board  
Subregion: 3  
Facility Telephone: 8057827257  
Facility Contact: David Keil  
Agency Name: SAN LUIS OBISPO CO OFFICE ED  
Agency Address: 3420 Watson Dr  
Agency City,St,Zip: San Luis Obispo 93405  
Agency Contact: David Keil  
Agency Telephone: 8057827257  
Agency Type: ?  
SIC Code: 0  
SIC Code 2: Not reported  
Primary Waste Type: Not reported  
Primary Waste: Not reported  
Waste Type2: Not reported  
Waste2: Not reported  
Primary Waste Type: Not reported  
Secondary Waste: Not reported  
Secondary Waste Type: Not reported  
Design Flow: 0  
Baseline Flow: 0  
Reclamation: Not reported  
POTW: Not reported  
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.  
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or those who must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

**CIWQS:**

Agency: San Luis Obispo Cnty Office  
Agency Address: 3420 Watson Dr, San Luis Obispo, CA 93405  
Place/Project Type: Industrial - School Buses

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**SLO CO SUPER. OF SCHOOLS (Continued)**

**S106102291**

SIC/NAICS: 4151  
Region: 3  
Program: INDSTW  
Regulatory Measure Status: Terminated  
Regulatory Measure Type: Storm water industrial  
Order Number: 2014-0057-DWQ  
WDID: 3 40I018176  
NPDES Number: CAS000001  
Adoption Date: Not reported  
Effective Date: 06/11/2003  
Termination Date: 09/11/2015  
Expiration/Review Date: Not reported  
Design Flow: Not reported  
Major/Minor: Not reported  
Complexity: Not reported  
TTWQ: Not reported  
Enforcement Actions within 5 years: 0  
Violations within 5 years: 0  
Latitude: 35.334551  
Longitude: -120.744937

**A10  
NW  
< 1/8  
0.058 mi.  
308 ft.**

**GRENADE COURTS 17 AND 27**

**UXO 1023964214  
N/A**

**SAN LUIS OBISPO, CA**

**Site 1 of 4 in cluster A**

**Relative:  
Lower  
Actual:  
245 ft.**

UXO:  
DoD Component: FUDS  
Installation Name: CAMP SAN LUIS OBISPO  
Facility Address 2: Not reported  
Site ID: 08OEW  
Site Type: Multi Use Range  
Latitude: 35.331111  
Longitude: -120.740278

**A11  
NW  
< 1/8  
0.058 mi.  
308 ft.**

**GRENADE COURTS 25 AND 26**

**UXO 1018151387  
N/A**

**SAN LUIS OBISPO, CA**

**Site 2 of 4 in cluster A**

**Relative:  
Lower  
Actual:  
245 ft.**

UXO:  
DoD Component: FUDS  
Installation Name: CAMP SAN LUIS OBISPO  
Facility Address 2: Not reported  
Site ID: 07OEW  
Site Type: Grenade Range  
Latitude: 35.331111  
Longitude: -120.740278

MAP FINDINGS

Map ID			EDR ID Number
Direction			EPA ID Number
Distance			
Elevation	Site	Database(s)	

---

<b>A12</b> <b>NW</b> < 1/8 0.058 mi. 308 ft.	<b>MULTI-USE RANGE COMPLEX</b>  <b>SAN LUIS OBISPO, CA</b>  <b>Site 3 of 4 in cluster A</b>	<b>UXO</b>	<b>1018151274</b> <b>N/A</b>
<b>Relative:</b> <b>Lower</b>	UXO: DoD Component: FUDS Installation Name: CAMP SAN LUIS OBISPO Facility Address 2: Not reported Site ID: 05OEW Site Type: Multi Use Range Latitude: 35.331111 Longitude: -120.740278		
<b>Actual:</b> <b>245 ft.</b>			

---

<b>A13</b> <b>NW</b> < 1/8 0.058 mi. 308 ft.	<b>RIFLE GRENADE RANGE (1952)</b>  <b>SAN LUIS OBISPO, CA</b>  <b>Site 4 of 4 in cluster A</b>	<b>UXO</b>	<b>1018151465</b> <b>N/A</b>
<b>Relative:</b> <b>Lower</b>	UXO: DoD Component: FUDS Installation Name: CAMP SAN LUIS OBISPO Facility Address 2: Not reported Site ID: 09OEW Site Type: Firing Range Latitude: 35.331111 Longitude: -120.740278		
<b>Actual:</b> <b>245 ft.</b>			

---

<b>B14</b> <b>NW</b> < 1/8 0.084 mi. 444 ft.	<b>VERIZON WIRELESS CUESTA COLLEGE</b> <b>3535 EDUCATION DR</b> <b>SAN LUIS OBISPO, CA 93405</b>  <b>Site 1 of 2 in cluster B</b>	<b>CUPA Listings</b> <b>CERS</b>	<b>S111220156</b> <b>N/A</b>
<b>Relative:</b> <b>Higher</b>	CUPA SAN LUIS OBISPO: Facility Id: FA0008606 Program Element Code: 0726 Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS Record Id: PR0014477 Cross Street: Not reported Status Code: 01 Status: Active, billable Latitude: 0.00000 Longitude: 0.00000		
<b>Actual:</b> <b>278 ft.</b>			
<b>Relative:</b> <b>Higher</b>	Facility Id: FA0008700 Program Element Code: 0726 Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS Record Id: PR0014624 Cross Street: Not reported Status Code: 02 Status: Inactive, non-billable Latitude: Not reported Longitude: Not reported		
<b>Actual:</b> <b>278 ft.</b>			
<b>Relative:</b> <b>Higher</b>	Facility Id: FA0008711		
<b>Actual:</b> <b>278 ft.</b>			

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VERIZON WIRELESS CUESTA COLLEGE (Continued)**

**S111220156**

Program Element Code: 0726  
Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id: PR0014646  
Cross Street: Not reported  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.14287  
Longitude: -120.63821

**CERS TANKS:**

Site ID: 81148  
CERS ID: 10142065  
CERS Description: Chemical Storage Facilities

**Evaluation:**

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 01-13-2015  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 01-22-2014  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 02-01-2016  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection  
Eval Date: 09-14-2017  
Violations Found: No  
Eval Type: Routine done by local agency  
Eval Notes: Not reported  
Eval Division: San Luis Obispo County Environmental Health  
Eval Program: HMRRP  
Eval Source: CERS

**Coordinates:**

Site ID: 81148  
Facility Name: Verizon Wireless Cuesta College  
Env Int Type Code: HMBP  
Program ID: 10142065  
Coord Name: Not reported

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VERIZON WIRELESS CUESTA COLLEGE (Continued)**

**S111220156**

Ref Point Type Desc: Center of a facility or station.  
Latitude: 35.336440  
Longitude: -120.747950

Affiliation:

Affiliation Type Desc: CUPA District  
Entity Name: SLO County Env Health  
Entity Title: Not reported  
Affiliation Address: 2156 Sierra Way  
Affiliation City: San Luis Obispo  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 93406  
Affiliation Phone: (805) 781-5544

Affiliation Type Desc: Document Preparer  
Entity Name: debra voth  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact  
Entity Name: Environmental Compliance  
Entity Title: Not reported  
Affiliation Address: 295 Parkshore Drive  
Affiliation City: Folsom  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 95630  
Affiliation Phone: (866) 694-2415

Affiliation Type Desc: Facility Mailing Address  
Entity Name: Mailing Address  
Entity Title: Not reported  
Affiliation Address: 295 Parkshore Drive  
Affiliation City: Folsom  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: 95630  
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer  
Entity Name: armand delgado  
Entity Title: environmental compliance mgr  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner  
Entity Name: Verizon Wireless

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**VERIZON WIRELESS CUESTA COLLEGE (Continued)**

**S111220156**

Entity Title: Not reported  
Affiliation Address: 295 Parkshore Drive  
Affiliation City: Folsom  
Affiliation State: CA  
Affiliation Country: United States  
Affiliation Zip: 95630  
Affiliation Phone: (866) 694-2415

Affiliation Type Desc: Operator  
Entity Name: Verizon Wireless  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (866) 694-2415

Affiliation Type Desc: Parent Corporation  
Entity Name: Verizon Wireless [Northern California]  
Entity Title: Not reported  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Primary Emergency Contact  
Entity Name: Network Operations Control Center  
Entity Title: NOCC  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (800) 264-6620

Affiliation Type Desc: Secondary Emergency Contact  
Entity Name: NOCC  
Entity Title: Network Operations Control Center  
Affiliation Address: Not reported  
Affiliation City: Not reported  
Affiliation State: Not reported  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: (800) 264-6620

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**B15**  
**NW**  
 < 1/8  
 0.084 mi.  
 444 ft.

**AT&T MOBILITY-SLG28-COLLEGE HILL(114205)**  
**3535 EDUCATION DR**  
**SAN LUIS OBISPO, CA 93405**

**CUPA Listings**    **S120703341**  
 N/A

**Site 2 of 2 in cluster B**

**Relative:**  
**Higher**

CUPA SAN LUIS OBISPO:

Facility Id: FA0008334  
 Program Element Code: 0726  
 Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
 Record Id: PR0014089  
 Cross Street: Not reported  
 Status Code: 02  
 Status: Inactive, non-billable  
 Latitude: 35.33543  
 Longitude: -120.74732

**Actual:**  
**278 ft.**

**C16**  
**South**  
 < 1/8  
 0.110 mi.  
 583 ft.

**CA ARMY NAT. GRD., CAMP SLO, SHOP 19, BLDNG. 1328**  
**HIGHWAY 1**  
**SAN LUIS OBISPO, CA**

**CPS-SLIC**    **S116381367**  
**DEED**    **N/A**  
**CERS**

**Site 1 of 2 in cluster C**

**Relative:**  
**Higher**

CPS-SLIC:

Region: STATE  
**Facility Status: Completed - Case Closed**  
 Status Date: 09/06/2013  
 Global Id: T0607949899  
 Lead Agency: CENTRAL COAST RWQCB (REGION 3)  
 Lead Agency Case Number: Not reported  
 Latitude: 35.3204477935833  
 Longitude: -120.734596252441  
 Case Type: Cleanup Program Site  
 Case Worker: TT  
 Local Agency: SAN LUIS OBISPO COUNTY  
 RB Case Number: Not reported  
 File Location: Regional Board  
 Potential Media Affected: Other Groundwater (uses other than drinking water)  
 Potential Contaminants of Concern: Diesel

**Actual:**  
**268 ft.**

Site History: In 1994, Camp San Luis Obispo began conducting soil and groundwater investigations in the vicinity of a former UST which was abandoned in place. Enhanced bioremediation was initiated in 1997 followed by monitored natural attenuation. Remaining petroleum hydrocarbons in groundwater are expected to continue to decrease over time. Camp San Luis Obispo executed a Land Use Control document which has been uploaded to Geotracker and added to the Camp San Luis Obispo Master Plan. Controls include maintenance of the asphalt covering the site and notification of the Central Coast Water Board and the County of San Luis Obispo prior to any land disturbance or groundwater extraction. The LUC was signed on September 3, 2013.

Click here to access the California GeoTracker records for this facility:

DEED:

Envirostor ID: T0607949899  
 Area: Not reported  
 Sub Area: Not reported  
 Site Type: SLIC  
 Status: COMPLETED - CASE CLOSED

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CA ARMY NAT. GRD., CAMP SLO, SHOP 19, BLDNG. 1328 (Continued)**

**S116381367**

Agency: SWRCB  
Covenant Uploaded: Y  
Deed Date(s): 09/06/2013  
File Name: Geotracker Land Use/Deed Restrictions

**CERS TANKS:**

Site ID: 231449  
CERS ID: T0607949899  
CERS Description: Cleanup Program Site

**Affiliation:**

Affiliation Type Desc: Local Agency Caseworker  
Entity Name: GENERIC - SAN LUIS OBISPO COUNTY  
Entity Title: Not reported  
Affiliation Address: UNDEFINED  
Affiliation City: UNDEFINED  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

Affiliation Type Desc: Regional Board Caseworker  
Entity Name: THEA TRYON - CENTRAL COAST RWQCB (REGION 3)  
Entity Title: Not reported  
Affiliation Address: 805 AEROVISTA PLACE, SUITE 101  
Affiliation City: SAN LUIS OBSIPO  
Affiliation State: CA  
Affiliation Country: Not reported  
Affiliation Zip: Not reported  
Affiliation Phone: Not reported

**C17**  
**South**  
**< 1/8**  
**0.124 mi.**  
**657 ft.**

**CAMP SAN LUIS OBISPO - OMS #19**  
**HWY 1 BLDG 1328**  
**SAN LUIS OBISPO, CA 93403**

**CUPA Listings S117845075**  
**N/A**

**Site 2 of 2 in cluster C**

**Relative:**  
**Higher**  
**Actual:**  
**270 ft.**

CUPA SAN LUIS OBISPO:  
Facility Id: FA0002380  
Program Element Code: 0726  
Program Element: HAZMAT DISCLOSURE - 1-4 HAZARDOUS MATERIALS  
Record Id: PR0001917  
Cross Street: SUTTER AVE  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.32023  
Longitude: -120.73455

Facility Id: FA0002380  
Program Element Code: 1126  
Program Element: HAZWASTE GEN (1-5 WASTE STREAMS)  
Record Id: PR0002380  
Cross Street: SUTTER AVE  
Status Code: 02  
Status: Inactive, non-billable  
Latitude: 35.32023  
Longitude: -120.73455

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**D18**  
**NW**  
**1/8-1/4**  
**0.125 mi.**  
**662 ft.**

**2100 HWY 1**  
**SAN LUIS OBISPO, CA**  
**Site 1 of 2 in cluster D**

**AST**    **A100344729**  
**N/A**

**Relative:**  
**Higher**

AST:

**Actual:**  
**273 ft.**

Certified Unified Program Agencies: San Luis Obispo  
 Owner: CALIFORNIA MENS COLONY  
 Total Gallons: 40000  
 CERSID: Not reported  
 Facility ID: Not reported  
 Business Name: Not reported  
 Phone: Not reported  
 Fax: Not reported  
 Mailing Address: Not reported  
 Mailing Address City: Not reported  
 Mailing Address State: Not reported  
 Mailing Address Zip Code: Not reported  
 Operator Name: Not reported  
 Operator Phone: Not reported  
 Owner Phone: Not reported  
 Owner Mail Address: Not reported  
 Owner State: Not reported  
 Owner Zip Code: Not reported  
 Owner Country: Not reported  
 Property Owner Name: Not reported  
 Property Owner Phone: Not reported  
 Property Owner Mailing Address: Not reported  
 Property Owner City: Not reported  
 Property Owner Stat : Not reported  
 Property Owner Zip Code: Not reported  
 Property Owner Country: Not reported  
 EPAID: Not reported

**D19**  
**NW**  
**1/8-1/4**  
**0.125 mi.**  
**662 ft.**

**CALIFORNIA MENS COLONY**  
**2100 HWY 1**  
**SAN LUIS OBISPO, CA 93401**  
**Site 2 of 2 in cluster D**

**SWEEPS UST**    **S106923862**  
**N/A**

**Relative:**  
**Higher**

SWEEPS UST:

**Actual:**  
**273 ft.**

Status: Active  
 Comp Number: 11301  
 Number: 6  
 Board Of Equalization: Not reported  
 Referral Date: 08-26-93  
 Action Date: 03-01-94  
 Created Date: 02-29-88  
 Owner Tank Id: 2E  
 SWRCB Tank Id: 40-000-011301-000002  
 Tank Status: A  
 Capacity: 16700  
 Active Date: 12-10-91  
 Tank Use: M.V. FUEL  
 STG: P  
 Content: DIESEL  
 Number Of Tanks: 5  
  
 Status: Active

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**CALIFORNIA MENS COLONY (Continued)**

**S106923862**

Comp Number: 11301  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 08-26-93  
Action Date: 03-01-94  
Created Date: 02-29-88  
Owner Tank Id: 1E  
SWRCB Tank Id: 40-000-011301-000003  
Tank Status: A  
Capacity: 16700  
Active Date: 02-13-91  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 11301  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 08-26-93  
Action Date: 03-01-94  
Created Date: 02-29-88  
Owner Tank Id: #1  
SWRCB Tank Id: 40-000-011301-000007  
Tank Status: A  
Capacity: 6000  
Active Date: 02-13-91  
Tank Use: M.V. FUEL  
STG: P  
Content: REG UNLEADED  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 11301  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 08-26-93  
Action Date: 03-01-94  
Created Date: 02-29-88  
Owner Tank Id: Not reported  
SWRCB Tank Id: 40-000-011301-000008  
Tank Status: A  
Capacity: 1500  
Active Date: 04-19-91  
Tank Use: M.V. FUEL  
STG: P  
Content: DIESEL  
Number Of Tanks: Not reported

Status: Active  
Comp Number: 11301  
Number: 6  
Board Of Equalization: Not reported  
Referral Date: 08-26-93  
Action Date: 03-01-94  
Created Date: 02-29-88

Map ID  
 Direction  
 Distance  
 Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
 EPA ID Number

**CALIFORNIA MENS COLONY (Continued)**

**S106923862**

Owner Tank Id: #2  
 SWRCB Tank Id: 40-000-011301-000009  
 Tank Status: A  
 Capacity: 6000  
 Active Date: 02-13-91  
 Tank Use: M.V. FUEL  
 STG: P  
 Content: LEADED  
 Number Of Tanks: Not reported

**20**  
**SE**  
**1/8-1/4**  
**0.178 mi.**  
**938 ft.**

**CAMP SAN LUIS OBISPO**  
**HWY 1**  
**SAN LUIS OBISPO, CA 93403**

**UST U004263058**  
**N/A**

**Relative:**  
**Higher**  
**Actual:**  
**261 ft.**

UST:  
 Facility ID: Not reported  
 Permitting Agency: San Luis Obispo County Environmental Health  
 Latitude: 35.32348  
 Longitude: -120.72958

**21**  
**ESE**  
**1/8-1/4**  
**0.186 mi.**  
**980 ft.**

**CAMP SAN LUIS OBISPO - SITEWIDE USTS**  
**SAN JOAQUIN AVENUE**  
**SAN LUIS OBISPO, CA 93401**

**CPS-SLIC S118154640**  
**N/A**

**Relative:**  
**Higher**  
**Actual:**  
**294 ft.**

CPS-SLIC:  
 Region: STATE  
**Facility Status: Completed - Case Closed**  
 Status Date: 12/16/2016  
 Global Id: T10000006258  
 Lead Agency: CENTRAL COAST RWQCB (REGION 3)  
 Lead Agency Case Number: Not reported  
 Latitude: 35.3251715555556  
 Longitude: -120.727450831738  
 Case Type: Cleanup Program Site  
 Case Worker: SMS  
 Local Agency: Not reported  
 RB Case Number: Not reported  
 File Location: Regional Board  
 Potential Media Affected: Other Groundwater (uses other than drinking water), Soil  
 Potential Contaminants of Concern: Total Petroleum Hydrocarbons (TPH)  
 Site History: Monitoring wells and piezometers from several USTs were found across Camp SLO during closure of the Camp San Luis Obispo Hutment case. While monitoring wells were being properly destroyed for the Camp San Luis Obispo Hutment "site", field personnel located piezometers still in place which were associated with non-Hutment USTs. Original site investigations were primarily conducted in the 1990's. Former USTs have been investigated to verify that USTs are removed, groundwater (when present) was sampled in 2016, and any remaining wells have been properly destroyed. The public was provided with a 60-day public notice of planned site closure. No comments were received regarding closure, so the sites have been closed by Water Board staff.

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

CAMP SAN LUIS OBISPO - SITEWIDE USTS (Continued)

S118154640

[Click here to access the California GeoTracker records for this facility:](#)

22  
NNW  
1/2-1  
0.559 mi.  
2953 ft.

LOMA VISTA COMMUNITY SCHOOL  
PENNINGTON CREEK ROAD/EDUCATION DRIVE/HWY 1  
SAN LUIS OBISPO, CA 93402

ENVIROSTOR S118756923  
SCH N/A

Relative:  
Higher  
Actual:  
323 ft.

ENVIROSTOR:  
Facility ID: 40020002  
Status: No Action Required  
Status Date: 06/30/2003  
Site Code: 104263  
Site Type: School Investigation  
Site Type Detailed: School  
Acres: 3  
NPL: NO  
Regulatory Agencies: DTSC  
Lead Agency: DTSC  
Program Manager: Not reported  
Supervisor: Javier Hinojosa  
Division Branch: Northern California Schools & Santa Susana  
Assembly: 35  
Senate: 17  
Special Program: Not reported  
Restricted Use: NO  
Site Mgmt Req: NONE SPECIFIED  
Funding: School District  
Latitude: 35.33943  
Longitude: -120.7377  
APN: NONE SPECIFIED  
Past Use: AGRICULTURAL - LIVESTOCK  
Potential COC: NONE SPECIFIED No Contaminants found  
Confirmed COC: NONE SPECIFIED  
Potential Description: NMA  
Alias Name: LOMA VISTA COMMUNITY SCHOOL  
Alias Type: Alternate Name  
Alias Name: SAN LUIS OBISPO COE  
Alias Type: Alternate Name  
Alias Name: SAN LUIS OBISPO COE-LOMA VISTA COMM SCL  
Alias Type: Alternate Name  
Alias Name: 104263  
Alias Type: Project Code (Site Code)  
Alias Name: 40020002  
Alias Type: Envirostor ID Number

Completed Info:  
Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 07/09/2003  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 01/31/2003

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOMA VISTA COMMUNITY SCHOOL (Continued)**

**S118756923**

Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1  
Completed Date: 04/03/2002  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 03/17/2003  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1  
Completed Date: 06/30/2003  
Comments: Not reported

Future Area Name: Not reported  
Future Sub Area Name: Not reported  
Future Document Type: Not reported  
Future Due Date: Not reported  
Schedule Area Name: Not reported  
Schedule Sub Area Name: Not reported  
Schedule Document Type: Not reported  
Schedule Due Date: Not reported  
Schedule Revised Date: Not reported

**SCH:**

Facility ID: 40020002  
Site Type: School Investigation  
Site Type Detail: School  
Site Mgmt. Req.: NONE SPECIFIED  
Acres: 3  
National Priorities List: NO  
Cleanup Oversight Agencies: DTSC  
Lead Agency: DTSC  
Lead Agency Description: \* DTSC  
Project Manager: Not reported  
Supervisor: Javier Hinojosa  
Division Branch: Northern California Schools & Santa Susana  
Site Code: 104263  
Assembly: 35  
Senate: 17  
Special Program Status: Not reported  
Status: No Action Required  
Status Date: 06/30/2003  
Restricted Use: NO  
Funding: School District  
Latitude: 35.33943  
Longitude: -120.7377  
APN: NONE SPECIFIED  
Past Use: AGRICULTURAL - LIVESTOCK  
Potential COC: NONE SPECIFIED, No Contaminants found

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

**LOMA VISTA COMMUNITY SCHOOL (Continued)**

**S118756923**

Confirmed COC: NONE SPECIFIED  
Potential Description: NMA  
Alias Name: LOMA VISTA COMMUNITY SCHOOL  
Alias Type: Alternate Name  
Alias Name: SAN LUIS OBISPO COE  
Alias Type: Alternate Name  
Alias Name: SAN LUIS OBISPO COE-LOMA VISTA COMM SCL  
Alias Type: Alternate Name  
Alias Name: 104263  
Alias Type: Project Code (Site Code)  
Alias Name: 40020002  
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Cost Recovery Closeout Memo  
Completed Date: 07/09/2003  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Environmental Oversight Agreement  
Completed Date: 01/31/2003  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1  
Completed Date: 04/03/2002  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Preliminary Endangerment Assessment Report  
Completed Date: 03/17/2003  
Comments: Not reported

Completed Area Name: PROJECT WIDE  
Completed Sub Area Name: Not reported  
Completed Document Type: Phase 1  
Completed Date: 06/30/2003  
Comments: Not reported

Future Area Name: Not reported  
Future Sub Area Name: Not reported  
Future Document Type: Not reported  
Future Due Date: Not reported  
Schedule Area Name: Not reported  
Schedule Sub Area Name: Not reported  
Schedule Document Type: Not reported  
Schedule Due Date: Not reported  
Schedule Revised Date: Not reported

Count: 4 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SAN LUIS OBISPO	S114591966	CAMP SAN LUIS OBISPO	CAMP SAN LUIS OBISPO		RGA LUST
SAN LUIS OBISPO	S112978179	SAN LUIS OBISPO COUNTY COMMUNITY C	1504 COLUSA RD	93405	HAZNET
SAN LUIS OBISPO	S121753007	CAMP SAN LUIS SUTTER AVENUE LANDFI	500 FT. WEST OF O'CONNOR WAY E	93405	CERS
SAN LUIS OBISPO	1023275056	CAMP SAN LUIS SUTTER AVENUE LANDFI	500 FT. WEST OF O'CONNOR WAY E	93405	FINDS

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### ***Federal NPL site list***

#### **NPL: National Priority List**

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: N/A
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Quarterly

#### **NPL Site Boundaries**

##### **Sources:**

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### **Proposed NPL: Proposed National Priority List Sites**

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: N/A
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Quarterly

#### **NPL LIENS: Federal Superfund Liens**

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/22/2017	Telephone: N/A
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 04/06/2018
Number of Days to Update: 92	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/09/2018	Source: EPA
Date Data Arrived at EDR: 02/06/2018	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 66	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Quarterly

## ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/09/2018	Source: EPA
Date Data Arrived at EDR: 02/06/2018	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 66	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Quarterly

## ***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2017	Source: EPA
Date Data Arrived at EDR: 12/26/2017	Telephone: 800-424-9346
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/28/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2017	Telephone: (415) 495-8895
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/28/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## ***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2017	Telephone: (415) 495-8895
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/28/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2017	Telephone: (415) 495-8895
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/28/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2017	Telephone: (415) 495-8895
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/28/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## ***Federal institutional controls / engineering controls registries***

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/16/2018	Source: Department of the Navy
Date Data Arrived at EDR: 02/22/2018	Telephone: 843-820-7326
Date Made Active in Reports: 05/11/2018	Last EDR Contact: 05/09/2018
Number of Days to Update: 78	Next Scheduled EDR Contact: 08/27/2018
	Data Release Frequency: Varies

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/27/2018	Telephone: 703-603-0695
Date Made Active in Reports: 05/11/2018	Last EDR Contact: 05/29/2018
Number of Days to Update: 73	Next Scheduled EDR Contact: 09/10/2018
	Data Release Frequency: Varies

### US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/27/2018	Telephone: 703-603-0695
Date Made Active in Reports: 05/11/2018	Last EDR Contact: 05/29/2018
Number of Days to Update: 73	Next Scheduled EDR Contact: 09/10/2018
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 01/16/2018  
Date Data Arrived at EDR: 01/19/2018  
Date Made Active in Reports: 03/23/2018  
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard  
Telephone: 202-267-2180  
Last EDR Contact: 03/27/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

## ***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 01/30/2018  
Date Data Arrived at EDR: 01/31/2018  
Date Made Active in Reports: 03/19/2018  
Number of Days to Update: 47

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Quarterly

## ***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 01/30/2018  
Date Data Arrived at EDR: 01/31/2018  
Date Made Active in Reports: 03/19/2018  
Number of Days to Update: 47

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Quarterly

## ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/12/2018  
Date Data Arrived at EDR: 02/14/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 48

Source: Department of Resources Recycling and Recovery  
Telephone: 916-341-6320  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/27/2018  
Data Release Frequency: Quarterly

## ***State and tribal leaking storage tank lists***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004	Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Date Data Arrived at EDR: 02/26/2004	Telephone: 760-776-8943
Date Made Active in Reports: 03/24/2004	Last EDR Contact: 08/01/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 11/14/2011
	Data Release Frequency: No Update Planned

## LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/14/2018	Telephone: see region list
Date Made Active in Reports: 03/21/2018	Last EDR Contact: 03/14/2018
Number of Days to Update: 7	Next Scheduled EDR Contact: 06/25/2018
	Data Release Frequency: Quarterly

## LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001	Source: California Regional Water Quality Control Board San Diego Region (9)
Date Data Arrived at EDR: 04/23/2001	Telephone: 858-637-5595
Date Made Active in Reports: 05/21/2001	Last EDR Contact: 09/26/2011
Number of Days to Update: 28	Next Scheduled EDR Contact: 01/09/2012
	Data Release Frequency: No Update Planned

## LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005	Source: California Regional Water Quality Control Board Santa Ana Region (8)
Date Data Arrived at EDR: 02/15/2005	Telephone: 909-782-4496
Date Made Active in Reports: 03/28/2005	Last EDR Contact: 08/15/2011
Number of Days to Update: 41	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: Varies

## LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005	Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Date Data Arrived at EDR: 06/07/2005	Telephone: 760-241-7365
Date Made Active in Reports: 06/29/2005	Last EDR Contact: 09/12/2011
Number of Days to Update: 22	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

## LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003	Source: California Regional Water Quality Control Board Lahontan Region (6)
Date Data Arrived at EDR: 09/10/2003	Telephone: 530-542-5572
Date Made Active in Reports: 10/07/2003	Last EDR Contact: 09/12/2011
Number of Days to Update: 27	Next Scheduled EDR Contact: 12/26/2011
	Data Release Frequency: No Update Planned

## LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2008  
Date Data Arrived at EDR: 07/22/2008  
Date Made Active in Reports: 07/31/2008  
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-4834  
Last EDR Contact: 07/01/2011  
Next Scheduled EDR Contact: 10/17/2011  
Data Release Frequency: No Update Planned

## LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004  
Date Data Arrived at EDR: 09/07/2004  
Date Made Active in Reports: 10/12/2004  
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6710  
Last EDR Contact: 09/06/2011  
Next Scheduled EDR Contact: 12/19/2011  
Data Release Frequency: No Update Planned

## LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003  
Date Data Arrived at EDR: 05/19/2003  
Date Made Active in Reports: 06/02/2003  
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-542-4786  
Last EDR Contact: 07/18/2011  
Next Scheduled EDR Contact: 10/31/2011  
Data Release Frequency: No Update Planned

## LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004  
Date Data Arrived at EDR: 10/20/2004  
Date Made Active in Reports: 11/19/2004  
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-622-2433  
Last EDR Contact: 09/19/2011  
Next Scheduled EDR Contact: 01/02/2012  
Data Release Frequency: Quarterly

## LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001  
Date Data Arrived at EDR: 02/28/2001  
Date Made Active in Reports: 03/29/2001  
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)  
Telephone: 707-570-3769  
Last EDR Contact: 08/01/2011  
Next Scheduled EDR Contact: 11/14/2011  
Data Release Frequency: No Update Planned

## INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80

Source: EPA Region 8  
Telephone: 303-312-6271  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/30/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80

Source: Environmental Protection Agency  
Telephone: 415-972-3372  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/24/2017	Source: EPA Region 10
Date Data Arrived at EDR: 01/23/2018	Telephone: 206-553-2857
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land  
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/14/2017	Source: EPA Region 1
Date Data Arrived at EDR: 01/23/2018	Telephone: 617-918-1313
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2017	Source: EPA Region 4
Date Data Arrived at EDR: 01/23/2018	Telephone: 404-562-8677
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/16/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/06/2018	Source: EPA Region 6
Date Data Arrived at EDR: 01/23/2018	Telephone: 214-665-6597
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land  
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/16/2017	Source: EPA, Region 5
Date Data Arrived at EDR: 01/23/2018	Telephone: 312-886-7439
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land  
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2017	Source: EPA Region 7
Date Data Arrived at EDR: 01/23/2018	Telephone: 913-551-7003
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/14/2018	Telephone: 866-480-1028
Date Made Active in Reports: 03/21/2018	Last EDR Contact: 12/12/2018
Number of Days to Update: 7	Next Scheduled EDR Contact: 06/25/2018
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003  
Date Data Arrived at EDR: 04/07/2003  
Date Made Active in Reports: 04/25/2003  
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)  
Telephone: 707-576-2220  
Last EDR Contact: 08/01/2011  
Next Scheduled EDR Contact: 11/14/2011  
Data Release Frequency: No Update Planned

## SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004  
Date Data Arrived at EDR: 10/20/2004  
Date Made Active in Reports: 11/19/2004  
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)  
Telephone: 510-286-0457  
Last EDR Contact: 09/19/2011  
Next Scheduled EDR Contact: 01/02/2012  
Data Release Frequency: Quarterly

## SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006  
Date Data Arrived at EDR: 05/18/2006  
Date Made Active in Reports: 06/15/2006  
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)  
Telephone: 805-549-3147  
Last EDR Contact: 07/18/2011  
Next Scheduled EDR Contact: 10/31/2011  
Data Release Frequency: Semi-Annually

## SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004  
Date Data Arrived at EDR: 11/18/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)  
Telephone: 213-576-6600  
Last EDR Contact: 07/01/2011  
Next Scheduled EDR Contact: 10/17/2011  
Data Release Frequency: Varies

## SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005  
Date Data Arrived at EDR: 04/05/2005  
Date Made Active in Reports: 04/21/2005  
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)  
Telephone: 916-464-3291  
Last EDR Contact: 09/12/2011  
Next Scheduled EDR Contact: 12/26/2011  
Data Release Frequency: Semi-Annually

## SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005  
Date Data Arrived at EDR: 05/25/2005  
Date Made Active in Reports: 06/16/2005  
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch  
Telephone: 619-241-6583  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004  
Date Data Arrived at EDR: 09/07/2004  
Date Made Active in Reports: 10/12/2004  
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region  
Telephone: 530-542-5574  
Last EDR Contact: 08/15/2011  
Next Scheduled EDR Contact: 11/28/2011  
Data Release Frequency: No Update Planned

## SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004  
Date Data Arrived at EDR: 11/29/2004  
Date Made Active in Reports: 01/04/2005  
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region  
Telephone: 760-346-7491  
Last EDR Contact: 08/01/2011  
Next Scheduled EDR Contact: 11/14/2011  
Data Release Frequency: No Update Planned

## SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008  
Date Data Arrived at EDR: 04/03/2008  
Date Made Active in Reports: 04/14/2008  
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)  
Telephone: 951-782-3298  
Last EDR Contact: 09/12/2011  
Next Scheduled EDR Contact: 12/26/2011  
Data Release Frequency: Semi-Annually

## SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007  
Date Data Arrived at EDR: 09/11/2007  
Date Made Active in Reports: 09/28/2007  
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)  
Telephone: 858-467-2980  
Last EDR Contact: 08/08/2011  
Next Scheduled EDR Contact: 11/21/2011  
Data Release Frequency: Annually

## **State and tribal registered storage tank lists**

### FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017  
Date Data Arrived at EDR: 05/30/2017  
Date Made Active in Reports: 10/13/2017  
Number of Days to Update: 136

Source: FEMA  
Telephone: 202-646-5797  
Last EDR Contact: 04/13/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Varies

### UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/08/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 916-327-7844  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 03/29/2018  
Number of Days to Update: 15

Source: SWRCB  
Telephone: 916-341-5851  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Semi-Annually

## AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016  
Date Data Arrived at EDR: 07/12/2016  
Date Made Active in Reports: 09/19/2016  
Number of Days to Update: 69

Source: California Environmental Protection Agency  
Telephone: 916-327-5092  
Last EDR Contact: 03/21/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/14/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80

Source: EPA, Region 1  
Telephone: 617-918-1313  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2017  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80

Source: EPA Region 8  
Telephone: 303-312-6137  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 01/13/2018  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 80

Source: EPA Region 7  
Telephone: 913-551-7003  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017	Source: EPA Region 6
Date Data Arrived at EDR: 07/27/2017	Telephone: 214-665-7591
Date Made Active in Reports: 12/08/2017	Last EDR Contact: 05/18/2018
Number of Days to Update: 134	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

### INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/30/2017	Source: EPA Region 9
Date Data Arrived at EDR: 01/23/2018	Telephone: 415-972-3368
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

### INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/24/2017	Source: EPA Region 10
Date Data Arrived at EDR: 01/23/2018	Telephone: 206-553-2857
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

### INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2017	Source: EPA Region 4
Date Data Arrived at EDR: 01/23/2018	Telephone: 404-562-9424
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/16/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

### INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/16/2017	Source: EPA Region 5
Date Data Arrived at EDR: 01/23/2018	Telephone: 312-886-6136
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 05/18/2018
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

### **State and tribal voluntary cleanup sites**

#### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 03/21/2018
Number of Days to Update: 142	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Varies

## VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 01/30/2018	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/31/2018	Telephone: 916-323-3400
Date Made Active in Reports: 03/19/2018	Last EDR Contact: 05/02/2018
Number of Days to Update: 47	Next Scheduled EDR Contact: 08/13/2018
	Data Release Frequency: Quarterly

## **State and tribal Brownfields sites**

### BROWNFIELDS: Considered Brownfields Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/26/2018	Source: State Water Resources Control Board
Date Data Arrived at EDR: 03/27/2018	Telephone: 916-323-7905
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 03/27/2018
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## **ADDITIONAL ENVIRONMENTAL RECORDS**

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 01/19/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2018	Telephone: 202-566-2777
Date Made Active in Reports: 02/09/2018	Last EDR Contact: 03/21/2018
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/02/2018
	Data Release Frequency: Semi-Annually

### **Local Lists of Landfill / Solid Waste Disposal Sites**

#### WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2000  
Date Data Arrived at EDR: 04/10/2000  
Date Made Active in Reports: 05/10/2000  
Number of Days to Update: 30

Source: State Water Resources Control Board  
Telephone: 916-227-4448  
Last EDR Contact: 05/03/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: No Update Planned

## SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Quarterly

## HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 02/08/2018  
Date Data Arrived at EDR: 02/09/2018  
Date Made Active in Reports: 03/20/2018  
Number of Days to Update: 39

Source: Integrated Waste Management Board  
Telephone: 916-341-6422  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 08/27/2018  
Data Release Frequency: Varies

## INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998  
Date Data Arrived at EDR: 12/03/2007  
Date Made Active in Reports: 01/24/2008  
Number of Days to Update: 52

Source: Environmental Protection Agency  
Telephone: 703-308-8245  
Last EDR Contact: 01/30/2018  
Next Scheduled EDR Contact: 05/14/2018  
Data Release Frequency: Varies

## ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985  
Date Data Arrived at EDR: 08/09/2004  
Date Made Active in Reports: 09/17/2004  
Number of Days to Update: 39

Source: Environmental Protection Agency  
Telephone: 800-424-9346  
Last EDR Contact: 06/09/2004  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009  
Date Data Arrived at EDR: 05/07/2009  
Date Made Active in Reports: 09/21/2009  
Number of Days to Update: 137

Source: EPA, Region 9  
Telephone: 415-947-4219  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: No Update Planned

## IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014  
Date Data Arrived at EDR: 08/06/2014  
Date Made Active in Reports: 01/29/2015  
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service  
Telephone: 301-443-1452  
Last EDR Contact: 05/04/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **Local Lists of Hazardous waste / Contaminated Sites**

### **US HIST CDL: National Clandestine Laboratory Register**

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/01/2018	Telephone: 202-307-1000
Date Made Active in Reports: 05/11/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 71	Next Scheduled EDR Contact: 09/10/2018
	Data Release Frequency: No Update Planned

### **HIST CAL-SITES: Calsites Database**

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 08/03/2006	Telephone: 916-323-3400
Date Made Active in Reports: 08/24/2006	Last EDR Contact: 02/23/2009
Number of Days to Update: 21	Next Scheduled EDR Contact: 05/25/2009
	Data Release Frequency: No Update Planned

### **SCH: School Property Evaluation Program**

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 01/30/2018	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/31/2018	Telephone: 916-323-3400
Date Made Active in Reports: 03/19/2018	Last EDR Contact: 05/02/2018
Number of Days to Update: 47	Next Scheduled EDR Contact: 08/13/2018
	Data Release Frequency: Quarterly

### **CDL: Clandestine Drug Labs**

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 08/18/2017	Telephone: 916-255-6504
Date Made Active in Reports: 09/21/2017	Last EDR Contact: 05/30/2018
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Varies

### **TOXIC PITS: Toxic Pits Cleanup Act Sites**

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995	Source: State Water Resources Control Board
Date Data Arrived at EDR: 08/30/1995	Telephone: 916-227-4364
Date Made Active in Reports: 09/26/1995	Last EDR Contact: 01/26/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 04/27/2009
	Data Release Frequency: No Update Planned

### **US CDL: Clandestine Drug Labs**

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/22/2018  
Date Data Arrived at EDR: 03/01/2018  
Date Made Active in Reports: 05/11/2018  
Number of Days to Update: 71

Source: Drug Enforcement Administration  
Telephone: 202-307-1000  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Quarterly

## CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/23/2018  
Date Data Arrived at EDR: 04/24/2018  
Date Made Active in Reports: 06/07/2018  
Number of Days to Update: 44

Source: CalEPA  
Telephone: 916-323-2514  
Last EDR Contact: 04/24/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Quarterly

## Local Lists of Registered Storage Tanks

### SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994  
Date Data Arrived at EDR: 07/07/2005  
Date Made Active in Reports: 08/11/2005  
Number of Days to Update: 35

Source: State Water Resources Control Board  
Telephone: N/A  
Last EDR Contact: 06/03/2005  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 02/28/2018  
Date Data Arrived at EDR: 03/01/2018  
Date Made Active in Reports: 03/28/2018  
Number of Days to Update: 27

Source: Department of Public Health  
Telephone: 707-463-4466  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Annually

### HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990  
Date Data Arrived at EDR: 01/25/1991  
Date Made Active in Reports: 02/12/1991  
Number of Days to Update: 18

Source: State Water Resources Control Board  
Telephone: 916-341-5851  
Last EDR Contact: 07/26/2001  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

### SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 04/19/2018  
Date Data Arrived at EDR: 04/24/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 10

Source: San Francisco County Department of Public Health  
Telephone: 415-252-3896  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Varies

### CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/31/1994  
Date Data Arrived at EDR: 09/05/1995  
Date Made Active in Reports: 09/29/1995  
Number of Days to Update: 24

Source: California Environmental Protection Agency  
Telephone: 916-341-5851  
Last EDR Contact: 12/28/1998  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## **Local Land Records**

### **LIENS: Environmental Liens Listing**

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 01/28/2018  
Date Data Arrived at EDR: 03/01/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 46

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Varies

### **LIENS 2: CERCLA Lien Information**

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 01/09/2018  
Date Data Arrived at EDR: 02/06/2018  
Date Made Active in Reports: 05/11/2018  
Number of Days to Update: 94

Source: Environmental Protection Agency  
Telephone: 202-564-6023  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Semi-Annually

### **DEED: Deed Restriction Listing**

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018  
Date Data Arrived at EDR: 02/08/2018  
Date Made Active in Reports: 02/08/2018  
Number of Days to Update: 0

Source: DTSC and SWRCB  
Telephone: 916-323-3400  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Semi-Annually

## **Records of Emergency Release Reports**

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 01/19/2018  
Date Data Arrived at EDR: 01/19/2018  
Date Made Active in Reports: 03/23/2018  
Number of Days to Update: 63

Source: U.S. Department of Transportation  
Telephone: 202-366-4555  
Last EDR Contact: 03/27/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

### **CHMIRS: California Hazardous Material Incident Report System**

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/15/2018  
Date Data Arrived at EDR: 02/20/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 42

Source: Office of Emergency Services  
Telephone: 916-845-8400  
Last EDR Contact: 04/24/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Semi-Annually

## LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Quality Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Quarterly

## MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 03/21/2018  
Number of Days to Update: 7

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Quarterly

## SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012  
Date Data Arrived at EDR: 01/03/2013  
Date Made Active in Reports: 02/22/2013  
Number of Days to Update: 50

Source: FirstSearch  
Telephone: N/A  
Last EDR Contact: 01/03/2013  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## **Other Ascertainable Records**

### RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2017  
Date Data Arrived at EDR: 12/26/2017  
Date Made Active in Reports: 02/09/2018  
Number of Days to Update: 45

Source: Environmental Protection Agency  
Telephone: (415) 495-8895  
Last EDR Contact: 03/28/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

### FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015  
Date Data Arrived at EDR: 07/08/2015  
Date Made Active in Reports: 10/13/2015  
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285  
Last EDR Contact: 05/25/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 11/10/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/13/2018
Number of Days to Update: 62	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Semi-Annually

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005	Source: U.S. Geological Survey
Date Data Arrived at EDR: 02/06/2006	Telephone: 888-275-8747
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/11/2018
Number of Days to Update: 339	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: N/A

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 05/15/2018
Number of Days to Update: 63	Next Scheduled EDR Contact: 08/27/2018
	Data Release Frequency: Varies

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 01/11/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2018	Telephone: 202-566-1917
Date Made Active in Reports: 03/02/2018	Last EDR Contact: 03/27/2018
Number of Days to Update: 42	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 05/07/2018
Number of Days to Update: 88	Next Scheduled EDR Contact: 08/20/2018
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/03/2015	Telephone: 703-308-4044
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 05/08/2018
Number of Days to Update: 6	Next Scheduled EDR Contact: 08/20/2018
	Data Release Frequency: Varies

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016	Source: EPA
Date Data Arrived at EDR: 06/21/2017	Telephone: 202-260-5521
Date Made Active in Reports: 01/05/2018	Last EDR Contact: 03/23/2018
Number of Days to Update: 198	Next Scheduled EDR Contact: 07/02/2018
	Data Release Frequency: Every 4 Years

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016	Source: EPA
Date Data Arrived at EDR: 01/10/2018	Telephone: 202-566-0250
Date Made Active in Reports: 01/12/2018	Last EDR Contact: 05/25/2018
Number of Days to Update: 2	Next Scheduled EDR Contact: 09/03/2018
	Data Release Frequency: Annually

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 12/10/2010	Telephone: 202-564-4203
Date Made Active in Reports: 02/25/2011	Last EDR Contact: 04/09/2018
Number of Days to Update: 77	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Annually

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/09/2018	Source: EPA
Date Data Arrived at EDR: 02/06/2018	Telephone: 703-416-0223
Date Made Active in Reports: 05/11/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 94	Next Scheduled EDR Contact: 09/17/2018
	Data Release Frequency: Annually

## RMP: Risk Management Plans

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/17/2017	Telephone: 202-564-8600
Date Made Active in Reports: 12/08/2017	Last EDR Contact: 04/20/2018
Number of Days to Update: 21	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Varies

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 05/30/2018
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/20/2018
	Data Release Frequency: Quarterly

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017	Source: EPA
Date Data Arrived at EDR: 06/09/2017	Telephone: 202-566-0500
Date Made Active in Reports: 10/13/2017	Last EDR Contact: 04/13/2018
Number of Days to Update: 126	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Annually

## ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 04/09/2018
Number of Days to Update: 79	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Quarterly

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

### FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

### FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009  
Date Data Arrived at EDR: 04/16/2009  
Date Made Active in Reports: 05/11/2009  
Number of Days to Update: 25

Source: EPA  
Telephone: 202-566-1667  
Last EDR Contact: 08/18/2017  
Next Scheduled EDR Contact: 12/04/2017  
Data Release Frequency: Quarterly

### MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016  
Date Data Arrived at EDR: 09/08/2016  
Date Made Active in Reports: 10/21/2016  
Number of Days to Update: 43

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169  
Last EDR Contact: 05/03/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

### COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005  
Date Data Arrived at EDR: 08/07/2009  
Date Made Active in Reports: 10/22/2009  
Number of Days to Update: 76

Source: Department of Energy  
Telephone: 202-586-8719  
Last EDR Contact: 03/09/2018  
Next Scheduled EDR Contact: 06/18/2018  
Data Release Frequency: Varies

### COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014  
Date Data Arrived at EDR: 09/10/2014  
Date Made Active in Reports: 10/20/2014  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: N/A  
Last EDR Contact: 06/04/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Varies

### PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017  
Date Data Arrived at EDR: 11/30/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 15

Source: Environmental Protection Agency  
Telephone: 202-566-0517  
Last EDR Contact: 04/27/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

### RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/03/2018  
Date Data Arrived at EDR: 01/04/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 99

Source: Environmental Protection Agency  
Telephone: 202-343-9775  
Last EDR Contact: 04/05/2018  
Next Scheduled EDR Contact: 07/16/2018  
Data Release Frequency: Quarterly

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2007  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
Date Data Arrived at EDR: 03/01/2007  
Date Made Active in Reports: 04/10/2007  
Number of Days to Update: 40

Source: Environmental Protection Agency  
Telephone: 202-564-2501  
Last EDR Contact: 12/17/2008  
Next Scheduled EDR Contact: 03/17/2008  
Data Release Frequency: No Update Planned

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012  
Date Data Arrived at EDR: 08/07/2012  
Date Made Active in Reports: 09/18/2012  
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety  
Telephone: 202-366-4595  
Last EDR Contact: 05/03/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 04/13/2018  
Number of Days to Update: 79

Source: Department of Justice, Consent Decree Library  
Telephone: Varies  
Last EDR Contact: 04/06/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 02/22/2017  
Date Made Active in Reports: 09/28/2017  
Number of Days to Update: 218

Source: EPA/NTIS  
Telephone: 800-424-9346  
Last EDR Contact: 05/25/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Biennially

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 04/11/2018
Number of Days to Update: 546	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Semi-Annually

## FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016	Source: Department of Energy
Date Data Arrived at EDR: 12/27/2016	Telephone: 202-586-3559
Date Made Active in Reports: 02/17/2017	Last EDR Contact: 05/07/2018
Number of Days to Update: 52	Next Scheduled EDR Contact: 08/20/2018
	Data Release Frequency: Varies

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017	Source: Department of Energy
Date Data Arrived at EDR: 10/11/2017	Telephone: 505-845-0011
Date Made Active in Reports: 11/03/2017	Last EDR Contact: 05/18/2018
Number of Days to Update: 23	Next Scheduled EDR Contact: 09/03/2018
	Data Release Frequency: Varies

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/06/2018	Telephone: 703-603-8787
Date Made Active in Reports: 03/02/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 24	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Varies

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

## US AIRS MINOR: Air Facility System Data A listing of minor source facilities.

Date of Government Version: 10/12/2016  
Date Data Arrived at EDR: 10/26/2016  
Date Made Active in Reports: 02/03/2017  
Number of Days to Update: 100

Source: EPA  
Telephone: 202-564-2496  
Last EDR Contact: 09/26/2017  
Next Scheduled EDR Contact: 01/08/2018  
Data Release Frequency: Annually

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 01/25/2018  
Date Data Arrived at EDR: 02/28/2018  
Date Made Active in Reports: 05/11/2018  
Number of Days to Update: 72

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Semi-Annually

## US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005  
Date Data Arrived at EDR: 02/29/2008  
Date Made Active in Reports: 04/18/2008  
Number of Days to Update: 49

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Varies

## US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
Date Data Arrived at EDR: 06/08/2011  
Date Made Active in Reports: 09/13/2011  
Number of Days to Update: 97

Source: USGS  
Telephone: 703-648-7709  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Varies

## ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/20/2017  
Date Data Arrived at EDR: 12/21/2017  
Date Made Active in Reports: 03/23/2018  
Number of Days to Update: 92

Source: Department of Interior  
Telephone: 202-208-2609  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/24/2018  
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/21/2018	Source: EPA
Date Data Arrived at EDR: 02/23/2018	Telephone: (415) 947-8000
Date Made Active in Reports: 03/23/2018	Last EDR Contact: 06/06/2018
Number of Days to Update: 28	Next Scheduled EDR Contact: 09/17/2018
	Data Release Frequency: Quarterly

## UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016	Source: Department of Defense
Date Data Arrived at EDR: 10/31/2017	Telephone: 703-704-1564
Date Made Active in Reports: 01/12/2018	Last EDR Contact: 04/13/2018
Number of Days to Update: 73	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Varies

## DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2018	Telephone: 202-564-0527
Date Made Active in Reports: 04/13/2018	Last EDR Contact: 06/01/2018
Number of Days to Update: 84	Next Scheduled EDR Contact: 09/10/2018
	Data Release Frequency: Varies

## ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/13/2018	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/19/2018	Telephone: 202-564-2280
Date Made Active in Reports: 03/02/2018	Last EDR Contact: 06/06/2018
Number of Days to Update: 42	Next Scheduled EDR Contact: 09/17/2018
	Data Release Frequency: Quarterly

## FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018	Source: EPA
Date Data Arrived at EDR: 02/21/2018	Telephone: 800-385-6164
Date Made Active in Reports: 03/23/2018	Last EDR Contact: 05/23/2018
Number of Days to Update: 30	Next Scheduled EDR Contact: 09/03/2018
	Data Release Frequency: Quarterly

## CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989	Source: Department of Health Services
Date Data Arrived at EDR: 07/27/1994	Telephone: 916-255-2118
Date Made Active in Reports: 08/02/1994	Last EDR Contact: 05/31/1994
Number of Days to Update: 6	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/26/2018	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 03/27/2018	Telephone: 916-323-3400
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 03/27/2018
Number of Days to Update: 38	Next Scheduled EDR Contact: 07/09/2018
	Data Release Frequency: Quarterly

## CUPA LIVERMORE-PLEASANTON: CUPA LIVERMORE-PLEASANTON

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 02/28/2018	Source: Livermore-Pleasanton Fire Department
Date Data Arrived at EDR: 03/01/2018	Telephone: 925-454-2361
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 05/07/2018
Number of Days to Update: 64	Next Scheduled EDR Contact: 08/27/2018
	Data Release Frequency: Varies

## CUPA SAN FRANCISCO CO: CUPA SAN FRANCISCO CO

Cupa facilities

Date of Government Version: 04/20/2018	Source: San Francisco County Department of Environmental Health
Date Data Arrived at EDR: 04/24/2018	Telephone: 415-252-3896
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 05/02/2018
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/20/2018
	Data Release Frequency: Varies

## DRYCLEAN SOUTH COAST: DRYCLEAN SOUTH COAST

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/16/2018	Source: South Coast Air Quality Management District
Date Data Arrived at EDR: 03/20/2018	Telephone: 909-396-3211
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 05/22/2018
Number of Days to Update: 45	Next Scheduled EDR Contact: 09/10/2018
	Data Release Frequency: Varies

## DRYCLEAN AVAQMD: DRYCLEAN AVAQMD

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 03/08/2018	Source: Antelope Valley Air Quality Management District
Date Data Arrived at EDR: 03/13/2018	Telephone: 661-723-8070
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 52	Next Scheduled EDR Contact: 09/17/2018
	Data Release Frequency: Varies

## DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/27/2018	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 03/29/2018	Telephone: 916-327-4498
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 36	Next Scheduled EDR Contact: 09/17/2018
	Data Release Frequency: Annually

## EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2015  
Date Data Arrived at EDR: 03/21/2017  
Date Made Active in Reports: 08/15/2017  
Number of Days to Update: 147

Source: California Air Resources Board  
Telephone: 916-322-2990  
Last EDR Contact: 03/23/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: Varies

## ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/19/2018  
Number of Days to Update: 54

Source: State Water Resources Control Board  
Telephone: 916-445-9379  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/20/2018  
Number of Days to Update: 55

Source: Department of Toxic Substances Control  
Telephone: 916-255-3628  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/14/2018  
Date Data Arrived at EDR: 02/16/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 46

Source: California Integrated Waste Management Board  
Telephone: 916-341-6066  
Last EDR Contact: 05/09/2018  
Next Scheduled EDR Contact: 08/27/2018  
Data Release Frequency: Varies

## HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 07/12/2017  
Date Made Active in Reports: 10/17/2017  
Number of Days to Update: 97

Source: California Environmental Protection Agency  
Telephone: 916-255-1136  
Last EDR Contact: 04/12/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Annually

## ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirositor.

Date of Government Version: 02/20/2018  
Date Data Arrived at EDR: 02/21/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 41

Source: Department of Toxic Substances Control  
Telephone: 877-786-9427  
Last EDR Contact: 05/23/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Quarterly

## HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSTITES]. This listing is no longer updated by the state agency.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2001  
Date Data Arrived at EDR: 01/22/2009  
Date Made Active in Reports: 04/08/2009  
Number of Days to Update: 76

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 01/22/2009  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

## HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/20/2018  
Date Data Arrived at EDR: 02/21/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 41

Source: Department of Toxic Substances Control  
Telephone: 916-323-3400  
Last EDR Contact: 05/23/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Quarterly

## HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/08/2018  
Date Data Arrived at EDR: 01/09/2018  
Date Made Active in Reports: 02/06/2018  
Number of Days to Update: 28

Source: Department of Toxic Substances Control  
Telephone: 916-440-7145  
Last EDR Contact: 04/11/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Quarterly

## MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: Department of Conservation  
Telephone: 916-322-1080  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Quarterly

## MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/27/2018  
Date Data Arrived at EDR: 03/05/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 42

Source: Department of Public Health  
Telephone: 916-558-1784  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Varies

## NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 03/14/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 916-445-9379  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/27/2018  
Data Release Frequency: Quarterly

## PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/05/2018  
Date Data Arrived at EDR: 03/05/2018  
Date Made Active in Reports: 04/19/2018  
Number of Days to Update: 45

Source: Department of Pesticide Regulation  
Telephone: 916-445-4038  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Quarterly

PROC: Certified Processors Database  
A listing of certified processors.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: Department of Conservation  
Telephone: 916-323-3836  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/23/2018  
Date Data Arrived at EDR: 03/27/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 38

Source: State Water Resources Control Board  
Telephone: 916-445-3846  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: Department of Conservation  
Telephone: 916-445-2408  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 04/15/2015  
Date Data Arrived at EDR: 04/17/2015  
Date Made Active in Reports: 06/23/2015  
Number of Days to Update: 67

Source: RWQCB, Central Valley Region  
Telephone: 559-445-5577  
Last EDR Contact: 04/13/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007  
Date Data Arrived at EDR: 06/20/2007  
Date Made Active in Reports: 06/29/2007  
Number of Days to Update: 9

Source: State Water Resources Control Board  
Telephone: 916-341-5227  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009  
Date Data Arrived at EDR: 07/21/2009  
Date Made Active in Reports: 08/03/2009  
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board  
Telephone: 213-576-6726  
Last EDR Contact: 03/21/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## PROJECT: PROJECT (GEOTRACKER)

Projects sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## PROD WATER PONDS: PROD WATER PONDS (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## NON-CASE INFO: NON-CASE INFO (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## SAMPLING POINT: SAMPLING POINT (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## WELL STIM PROJ: WELL SAMP PROJ (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## CIWQS: The California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/05/2018  
Date Data Arrived at EDR: 03/05/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 60

Source: State Water Resources Control Board  
Telephone: 866-794-4977  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Varies

UIC GEO: UIC GEO (GEOTRACKER)  
Underground control injection sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resource Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/23/2018  
Date Data Arrived at EDR: 04/24/2018  
Date Made Active in Reports: 06/07/2018  
Number of Days to Update: 44

Source: California Environmental Protection Agency  
Telephone: 916-323-2514  
Last EDR Contact: 04/24/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

OTHER OIL GAS: OTHER OIL & GAS (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 03/12/2018  
Date Data Arrived at EDR: 03/14/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 51

Source: State Water Resources Control Board  
Telephone: 866-480-1028  
Last EDR Contact: 12/12/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Varies

## **EDR HIGH RISK HISTORICAL RECORDS**

### ***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/13/2014  
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 12/30/2013  
Number of Days to Update: 182

Source: State Water Resources Control Board  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## COUNTY RECORDS

### ALAMEDA COUNTY:

#### Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2018  
Date Data Arrived at EDR: 01/11/2018  
Date Made Active in Reports: 02/22/2018  
Number of Days to Update: 42

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 04/05/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/05/2018  
Date Data Arrived at EDR: 04/10/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 24

Source: Alameda County Environmental Health Services  
Telephone: 510-567-6700  
Last EDR Contact: 04/05/2018  
Next Scheduled EDR Contact: 04/24/2047  
Data Release Frequency: Semi-Annually

## AMADOR COUNTY:

### CUPA Facility List

Cupa Facility List

Date of Government Version: 03/01/2018  
Date Data Arrived at EDR: 03/05/2018  
Date Made Active in Reports: 03/15/2018  
Number of Days to Update: 10

Source: Amador County Environmental Health  
Telephone: 209-223-6439  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Varies

## BUTTE COUNTY:

### CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017  
Date Data Arrived at EDR: 04/25/2017  
Date Made Active in Reports: 08/09/2017  
Number of Days to Update: 106

Source: Public Health Department  
Telephone: 530-538-7149  
Last EDR Contact: 04/05/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: No Update Planned

## CALVERAS COUNTY:

### CUPA Facility Listing

Cupa Facility Listing

Date of Government Version: 01/25/2018  
Date Data Arrived at EDR: 01/26/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 47

Source: Calveras County Environmental Health  
Telephone: 209-754-6399  
Last EDR Contact: 03/26/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

## COLUSA COUNTY:

### CUPA Facility List

Cupa facility list.

Date of Government Version: 02/26/2018  
Date Data Arrived at EDR: 03/01/2018  
Date Made Active in Reports: 03/15/2018  
Number of Days to Update: 14

Source: Health & Human Services  
Telephone: 530-458-0396  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Semi-Annually

## CONTRA COSTA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/22/2018  
Date Data Arrived at EDR: 02/27/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 48

Source: Contra Costa Health Services Department  
Telephone: 925-646-2286  
Last EDR Contact: 04/30/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Semi-Annually

## DEL NORTE COUNTY:

### CUPA Facility List

Cupa Facility list

Date of Government Version: 01/05/2018  
Date Data Arrived at EDR: 02/02/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 40

Source: Del Norte County Environmental Health Division  
Telephone: 707-465-0426  
Last EDR Contact: 04/25/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

## EL DORADO COUNTY:

### CUPA Facility List

CUPA facility list.

Date of Government Version: 03/05/2018  
Date Data Arrived at EDR: 03/08/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 39

Source: El Dorado County Environmental Management Department  
Telephone: 530-621-6623  
Last EDR Contact: 04/30/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

## FRESNO COUNTY:

### CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/01/2018  
Date Data Arrived at EDR: 03/05/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 9

Source: Dept. of Community Health  
Telephone: 559-445-3271  
Last EDR Contact: 03/06/2018  
Next Scheduled EDR Contact: 07/16/2018  
Data Release Frequency: Semi-Annually

## GLENN COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District  
Telephone: 830-934-6500  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## HUMBOLDT COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

CUPA facility list.

Date of Government Version: 03/05/2018  
Date Data Arrived at EDR: 03/08/2018  
Date Made Active in Reports: 04/30/2018  
Number of Days to Update: 53

Source: Humboldt County Environmental Health  
Telephone: N/A  
Last EDR Contact: 05/21/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Semi-Annually

## IMPERIAL COUNTY:

### CUPA Facility List

Cupa facility list.

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/26/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 47

Source: San Diego Border Field Office  
Telephone: 760-339-2777  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## INYO COUNTY:

### CUPA Facility List

Cupa facility list.

Date of Government Version: 06/08/2017  
Date Data Arrived at EDR: 06/09/2017  
Date Made Active in Reports: 08/04/2017  
Number of Days to Update: 56

Source: Inyo County Environmental Health Services  
Telephone: 760-878-0238  
Last EDR Contact: 05/30/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## KERN COUNTY:

### Underground Storage Tank Sites & Tank Listing Kern County Sites and Tanks Listing.

Date of Government Version: 02/02/2018  
Date Data Arrived at EDR: 02/02/2018  
Date Made Active in Reports: 03/28/2018  
Number of Days to Update: 54

Source: Kern County Environment Health Services Department  
Telephone: 661-862-8700  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

## KINGS COUNTY:

### CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017  
Date Data Arrived at EDR: 11/17/2017  
Date Made Active in Reports: 12/15/2017  
Number of Days to Update: 28

Source: Kings County Department of Public Health  
Telephone: 559-584-1411  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## LAKE COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

Cupa facility list

Date of Government Version: 02/06/2018  
Date Data Arrived at EDR: 02/09/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 33

Source: Lake County Environmental Health  
Telephone: 707-263-1164  
Last EDR Contact: 04/16/2018  
Next Scheduled EDR Contact: 07/30/2018  
Data Release Frequency: Varies

## LASSEN COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 49

Source: Lassen County Environmental Health  
Telephone: 530-251-8528  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## LOS ANGELES COUNTY:

### San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009  
Date Data Arrived at EDR: 03/31/2009  
Date Made Active in Reports: 10/23/2009  
Number of Days to Update: 206

Source: EPA Region 9  
Telephone: 415-972-3178  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: No Update Planned

### HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/16/2018  
Date Data Arrived at EDR: 01/23/2018  
Date Made Active in Reports: 03/20/2018  
Number of Days to Update: 56

Source: Department of Public Works  
Telephone: 626-458-3517  
Last EDR Contact: 04/05/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Semi-Annually

### List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018  
Date Data Arrived at EDR: 01/16/2018  
Date Made Active in Reports: 02/14/2018  
Number of Days to Update: 29

Source: La County Department of Public Works  
Telephone: 818-458-5185  
Last EDR Contact: 04/17/2018  
Next Scheduled EDR Contact: 07/30/2018  
Data Release Frequency: Varies

### City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018  
Date Data Arrived at EDR: 05/01/2018  
Date Made Active in Reports: 05/14/2018  
Number of Days to Update: 13

Source: Engineering & Construction Division  
Telephone: 213-473-7869  
Last EDR Contact: 04/11/2018  
Next Scheduled EDR Contact: 07/30/2018  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018	Source: Community Health Services
Date Data Arrived at EDR: 01/17/2018	Telephone: 323-890-7806
Date Made Active in Reports: 02/14/2018	Last EDR Contact: 04/17/2018
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Annually

## City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017	Source: City of El Segundo Fire Department
Date Data Arrived at EDR: 04/19/2017	Telephone: 310-524-2236
Date Made Active in Reports: 05/10/2017	Last EDR Contact: 04/11/2018
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Semi-Annually

## City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017	Source: City of Long Beach Fire Department
Date Data Arrived at EDR: 03/10/2017	Telephone: 562-570-2563
Date Made Active in Reports: 05/03/2017	Last EDR Contact: 04/18/2018
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Annually

## City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018	Source: City of Torrance Fire Department
Date Data Arrived at EDR: 01/05/2018	Telephone: 310-618-2973
Date Made Active in Reports: 01/18/2018	Last EDR Contact: 04/05/2018
Number of Days to Update: 13	Next Scheduled EDR Contact: 07/23/2018
	Data Release Frequency: Semi-Annually

## MADERA COUNTY:

### CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/21/2018	Source: Madera County Environmental Health
Date Data Arrived at EDR: 02/22/2018	Telephone: 559-675-7823
Date Made Active in Reports: 04/03/2018	Last EDR Contact: 05/16/2018
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/03/2018
	Data Release Frequency: Varies

## MARIN COUNTY:

### Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 03/30/2018	Source: Public Works Department Waste Management
Date Data Arrived at EDR: 04/06/2018	Telephone: 415-473-6647
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 03/29/2018
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Semi-Annually

## MERCED COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

CUPA facility list.

Date of Government Version: 01/11/2018  
Date Data Arrived at EDR: 01/12/2018  
Date Made Active in Reports: 02/08/2018  
Number of Days to Update: 27

Source: Merced County Environmental Health  
Telephone: 209-381-1094  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## MONO COUNTY:

### CUPA Facility List

CUPA Facility List

Date of Government Version: 02/22/2018  
Date Data Arrived at EDR: 02/27/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 15

Source: Mono County Health Department  
Telephone: 760-932-5580  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Varies

## MONTEREY COUNTY:

### CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/27/2018  
Date Data Arrived at EDR: 03/29/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 18

Source: Monterey County Health Department  
Telephone: 831-796-1297  
Last EDR Contact: 05/21/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## NAPA COUNTY:

### Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017  
Date Data Arrived at EDR: 01/11/2017  
Date Made Active in Reports: 03/02/2017  
Number of Days to Update: 50

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: No Update Planned

### Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 02/22/2018  
Date Data Arrived at EDR: 02/27/2018  
Date Made Active in Reports: 03/29/2018  
Number of Days to Update: 30

Source: Napa County Department of Environmental Management  
Telephone: 707-253-4269  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: No Update Planned

## NEVADA COUNTY:

### CUPA Facility List

CUPA facility list.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/31/2018  
Date Data Arrived at EDR: 02/01/2018  
Date Made Active in Reports: 03/14/2018  
Number of Days to Update: 41

Source: Community Development Agency  
Telephone: 530-265-1467  
Last EDR Contact: 04/25/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

## ORANGE COUNTY:

### List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 02/05/2018  
Date Data Arrived at EDR: 02/13/2018  
Date Made Active in Reports: 04/03/2018  
Number of Days to Update: 49

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 05/07/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Annually

### List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/05/2018  
Date Data Arrived at EDR: 02/13/2018  
Date Made Active in Reports: 03/20/2018  
Number of Days to Update: 35

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 05/07/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

### List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2018  
Date Data Arrived at EDR: 02/07/2018  
Date Made Active in Reports: 03/28/2018  
Number of Days to Update: 49

Source: Health Care Agency  
Telephone: 714-834-3446  
Last EDR Contact: 05/08/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

## PLACER COUNTY:

### Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/15/2018  
Date Data Arrived at EDR: 03/19/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 46

Source: Placer County Health and Human Services  
Telephone: 530-745-2363  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Semi-Annually

## PLUMAS COUNTY:

### CUPA Facility List

Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/24/2018  
Date Made Active in Reports: 03/15/2018  
Number of Days to Update: 50

Source: Plumas County Environmental Health  
Telephone: 530-283-6355  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## RIVERSIDE COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/05/2018  
Date Data Arrived at EDR: 04/10/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 24

Source: Department of Environmental Health  
Telephone: 951-358-5055  
Last EDR Contact: 03/19/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: Quarterly

## Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 04/05/2018  
Date Data Arrived at EDR: 04/10/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 24

Source: Department of Environmental Health  
Telephone: 951-358-5055  
Last EDR Contact: 03/19/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: Quarterly

## SACRAMENTO COUNTY:

### Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017  
Date Data Arrived at EDR: 01/03/2018  
Date Made Active in Reports: 02/05/2018  
Number of Days to Update: 33

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 04/04/2018  
Next Scheduled EDR Contact: 07/16/2018  
Data Release Frequency: Quarterly

### Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2017  
Date Data Arrived at EDR: 01/03/2018  
Date Made Active in Reports: 02/14/2018  
Number of Days to Update: 42

Source: Sacramento County Environmental Management  
Telephone: 916-875-8406  
Last EDR Contact: 04/04/2018  
Next Scheduled EDR Contact: 07/16/2018  
Data Release Frequency: Quarterly

## SAN BENITO COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017  
Date Data Arrived at EDR: 11/03/2017  
Date Made Active in Reports: 11/17/2017  
Number of Days to Update: 14

Source: San Benito County Environmental Health  
Telephone: N/A  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Varies

## SAN BERNARDINO COUNTY:

### Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/30/2017  
Date Data Arrived at EDR: 12/01/2017  
Date Made Active in Reports: 01/16/2018  
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division  
Telephone: 909-387-3041  
Last EDR Contact: 04/06/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

## SAN DIEGO COUNTY:

### Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/05/2018  
Date Data Arrived at EDR: 03/07/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 40

Source: Hazardous Materials Management Division  
Telephone: 619-338-2268  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Quarterly

### Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015  
Date Data Arrived at EDR: 11/07/2015  
Date Made Active in Reports: 01/04/2016  
Number of Days to Update: 58

Source: Department of Health Services  
Telephone: 619-338-2209  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

### Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 04/18/2018  
Date Data Arrived at EDR: 04/23/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 11

Source: Department of Environmental Health  
Telephone: 858-505-6874  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

### Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010  
Date Data Arrived at EDR: 06/15/2010  
Date Made Active in Reports: 07/09/2010  
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health  
Telephone: 619-338-2371  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: No Update Planned

## SAN FRANCISCO COUNTY:

### Local Oversight Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/19/2008  
Date Data Arrived at EDR: 09/19/2008  
Date Made Active in Reports: 09/29/2008  
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County  
Telephone: 415-252-3920  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

## Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017  
Date Data Arrived at EDR: 11/07/2017  
Date Made Active in Reports: 12/19/2017  
Number of Days to Update: 42

Source: Department of Public Health  
Telephone: 415-252-3920  
Last EDR Contact: 05/02/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Quarterly

## SAN JOAQUIN COUNTY:

### San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/20/2018  
Date Data Arrived at EDR: 03/22/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 43

Source: Environmental Health Department  
Telephone: N/A  
Last EDR Contact: 03/14/2018  
Next Scheduled EDR Contact: 07/02/2018  
Data Release Frequency: Semi-Annually

## SAN LUIS OBISPO COUNTY:

### CUPA Facility List

Cupa Facility List.

Date of Government Version: 11/16/2017  
Date Data Arrived at EDR: 11/17/2017  
Date Made Active in Reports: 12/18/2017  
Number of Days to Update: 31

Source: San Luis Obispo County Public Health Department  
Telephone: 805-781-5596  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## SAN MATEO COUNTY:

### Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 03/14/2018  
Date Data Arrived at EDR: 03/20/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 45

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/24/2018  
Data Release Frequency: Annually

### Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/15/2018  
Date Data Arrived at EDR: 03/20/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 45

Source: San Mateo County Environmental Health Services Division  
Telephone: 650-363-1921  
Last EDR Contact: 06/06/2018  
Next Scheduled EDR Contact: 09/24/2018  
Data Release Frequency: Semi-Annually

## SANTA BARBARA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011  
Date Data Arrived at EDR: 09/09/2011  
Date Made Active in Reports: 10/07/2011  
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department  
Telephone: 805-686-8167  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## SANTA CLARA COUNTY:

### Cupa Facility List

Cupa facility list

Date of Government Version: 02/20/2018  
Date Data Arrived at EDR: 02/20/2018  
Date Made Active in Reports: 03/19/2018  
Number of Days to Update: 27

Source: Department of Environmental Health  
Telephone: 408-918-1973  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

### HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005  
Date Data Arrived at EDR: 03/30/2005  
Date Made Active in Reports: 04/21/2005  
Number of Days to Update: 22

Source: Santa Clara Valley Water District  
Telephone: 408-265-2600  
Last EDR Contact: 03/23/2009  
Next Scheduled EDR Contact: 06/22/2009  
Data Release Frequency: No Update Planned

### LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014  
Date Data Arrived at EDR: 03/05/2014  
Date Made Active in Reports: 03/18/2014  
Number of Days to Update: 13

Source: Department of Environmental Health  
Telephone: 408-918-3417  
Last EDR Contact: 05/22/2018  
Next Scheduled EDR Contact: 09/10/2018  
Data Release Frequency: Annually

### Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/04/2018  
Date Data Arrived at EDR: 02/06/2018  
Date Made Active in Reports: 03/20/2018  
Number of Days to Update: 42

Source: City of San Jose Fire Department  
Telephone: 408-535-7694  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Annually

## SANTA CRUZ COUNTY:

### CUPA Facility List

CUPA facility listing.

Date of Government Version: 01/21/2017  
Date Data Arrived at EDR: 02/22/2017  
Date Made Active in Reports: 05/23/2017  
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health  
Telephone: 831-464-2761  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## SHASTA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

### Cupa Facility List.

Date of Government Version: 06/15/2017  
Date Data Arrived at EDR: 06/19/2017  
Date Made Active in Reports: 08/09/2017  
Number of Days to Update: 51

Source: Shasta County Department of Resource Management  
Telephone: 530-225-5789  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Varies

## SOLANO COUNTY:

### Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018  
Date Data Arrived at EDR: 03/13/2018  
Date Made Active in Reports: 05/04/2018  
Number of Days to Update: 52

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Quarterly

### Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018  
Date Data Arrived at EDR: 03/13/2018  
Date Made Active in Reports: 03/29/2018  
Number of Days to Update: 16

Source: Solano County Department of Environmental Management  
Telephone: 707-784-6770  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Quarterly

## SONOMA COUNTY:

### Cupa Facility List

#### Cupa Facility list

Date of Government Version: 03/01/2018  
Date Data Arrived at EDR: 03/27/2018  
Date Made Active in Reports: 04/16/2018  
Number of Days to Update: 20

Source: County of Sonoma Fire & Emergency Services Department  
Telephone: 707-565-1174  
Last EDR Contact: 03/22/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Varies

### Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/03/2018  
Date Data Arrived at EDR: 04/06/2018  
Date Made Active in Reports: 05/09/2018  
Number of Days to Update: 33

Source: Department of Health Services  
Telephone: 707-565-6565  
Last EDR Contact: 03/22/2018  
Next Scheduled EDR Contact: 07/09/2018  
Data Release Frequency: Quarterly

## STANISLAUS COUNTY:

### CUPA Facility List

#### Cupa facility list

Date of Government Version: 02/06/2018  
Date Data Arrived at EDR: 02/07/2018  
Date Made Active in Reports: 03/16/2018  
Number of Days to Update: 37

Source: Stanislaus County Department of Environmental Protection  
Telephone: 209-525-6751  
Last EDR Contact: 04/16/2018  
Next Scheduled EDR Contact: 07/30/2018  
Data Release Frequency: Varies

## SUTTER COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 01/08/2018  
Date Data Arrived at EDR: 03/01/2018  
Date Made Active in Reports: 03/30/2018  
Number of Days to Update: 29

Source: Sutter County Department of Agriculture  
Telephone: 530-822-7500  
Last EDR Contact: 05/31/2018  
Next Scheduled EDR Contact: 09/17/2018  
Data Release Frequency: Semi-Annually

## TEHAMA COUNTY:

### CUPA Facility List

Cupa facilities

Date of Government Version: 01/26/2018  
Date Data Arrived at EDR: 02/02/2018  
Date Made Active in Reports: 03/21/2018  
Number of Days to Update: 47

Source: Tehama County Department of Environmental Health  
Telephone: 530-527-8020  
Last EDR Contact: 05/03/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Varies

## TRINITY COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/25/2018  
Date Made Active in Reports: 03/19/2018  
Number of Days to Update: 53

Source: Department of Toxic Substances Control  
Telephone: 760-352-0381  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## TULARE COUNTY:

### CUPA Facility List

Cupa program facilities

Date of Government Version: 03/19/2018  
Date Data Arrived at EDR: 03/22/2018  
Date Made Active in Reports: 04/17/2018  
Number of Days to Update: 26

Source: Tulare County Environmental Health Services Division  
Telephone: 559-624-7400  
Last EDR Contact: 05/16/2018  
Next Scheduled EDR Contact: 08/20/2018  
Data Release Frequency: Varies

## TUOLUMNE COUNTY:

### CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018  
Date Data Arrived at EDR: 01/25/2018  
Date Made Active in Reports: 03/16/2018  
Number of Days to Update: 50

Source: Division of Environmental Health  
Telephone: 209-533-5633  
Last EDR Contact: 04/18/2018  
Next Scheduled EDR Contact: 08/06/2018  
Data Release Frequency: Varies

## VENTURA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/26/2017	Source: Ventura County Environmental Health Division
Date Data Arrived at EDR: 01/25/2018	Telephone: 805-654-2813
Date Made Active in Reports: 03/14/2018	Last EDR Contact: 04/23/2018
Number of Days to Update: 48	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Quarterly

## Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011	Source: Environmental Health Division
Date Data Arrived at EDR: 12/01/2011	Telephone: 805-654-2813
Date Made Active in Reports: 01/19/2012	Last EDR Contact: 03/29/2018
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Annually

## Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008	Source: Environmental Health Division
Date Data Arrived at EDR: 06/24/2008	Telephone: 805-654-2813
Date Made Active in Reports: 07/31/2008	Last EDR Contact: 05/09/2018
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/27/2018
	Data Release Frequency: Quarterly

## Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/26/2017	Source: Ventura County Resource Management Agency
Date Data Arrived at EDR: 01/25/2018	Telephone: 805-654-2813
Date Made Active in Reports: 03/20/2018	Last EDR Contact: 04/23/2018
Number of Days to Update: 54	Next Scheduled EDR Contact: 08/06/2018
	Data Release Frequency: Quarterly

## Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/28/2018	Source: Environmental Health Division
Date Data Arrived at EDR: 03/14/2018	Telephone: 805-654-2813
Date Made Active in Reports: 03/30/2018	Last EDR Contact: 03/14/2018
Number of Days to Update: 16	Next Scheduled EDR Contact: 06/25/2018
	Data Release Frequency: Quarterly

## YOLO COUNTY:

### Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/27/2018	Source: Yolo County Department of Health
Date Data Arrived at EDR: 04/03/2018	Telephone: 530-666-8646
Date Made Active in Reports: 05/04/2018	Last EDR Contact: 03/29/2018
Number of Days to Update: 31	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Annually

## YUBA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## CUPA Facility List

CUPA facility listing for Yuba County.

Date of Government Version: 02/01/2018  
Date Data Arrived at EDR: 02/02/2018  
Date Made Active in Reports: 03/21/2018  
Number of Days to Update: 47

Source: Yuba County Environmental Health Department  
Telephone: 530-749-7523  
Last EDR Contact: 04/25/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 01/03/2018  
Date Data Arrived at EDR: 02/14/2018  
Date Made Active in Reports: 03/22/2018  
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection  
Telephone: 860-424-3375  
Last EDR Contact: 05/18/2018  
Next Scheduled EDR Contact: 08/27/2018  
Data Release Frequency: No Update Planned

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 04/11/2017  
Date Made Active in Reports: 07/27/2017  
Number of Days to Update: 107

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 04/23/2018  
Next Scheduled EDR Contact: 07/23/2018  
Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 04/30/2018  
Date Data Arrived at EDR: 05/03/2018  
Date Made Active in Reports: 06/07/2018  
Number of Days to Update: 35

Source: Department of Environmental Conservation  
Telephone: 518-402-8651  
Last EDR Contact: 05/03/2018  
Next Scheduled EDR Contact: 08/13/2018  
Data Release Frequency: Quarterly

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 07/25/2017  
Date Made Active in Reports: 09/25/2017  
Number of Days to Update: 62

Source: Department of Environmental Protection  
Telephone: 717-783-8990  
Last EDR Contact: 04/12/2018  
Next Scheduled EDR Contact: 07/30/2018  
Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017  
Date Data Arrived at EDR: 02/23/2018  
Date Made Active in Reports: 04/09/2018  
Number of Days to Update: 45

Source: Department of Environmental Management  
Telephone: 401-222-2797  
Last EDR Contact: 05/21/2018  
Next Scheduled EDR Contact: 09/03/2018  
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016  
Date Data Arrived at EDR: 04/13/2017  
Date Made Active in Reports: 07/14/2017  
Number of Days to Update: 92

Source: Department of Natural Resources  
Telephone: N/A  
Last EDR Contact: 03/08/2018  
Next Scheduled EDR Contact: 06/25/2018  
Data Release Frequency: Annually

## Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

## Electric Power Transmission Line Data

Source: PennWell Corporation

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## AHA Hospitals:

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

## Nursing Homes

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

## Public Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

## Private Schools

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

## Daycare Centers: Licensed Facilities

Source: Department of Social Services  
Telephone: 916-657-4041

**Flood Zone Data:** This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory  
Source: Department of Fish & Game  
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map  
Source: U.S. Geological Survey

### **STREET AND ADDRESS INFORMATION**

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

CAMP LUIS OBISPO  
CAMP LUIS OBISPO  
SAN LUIS OBISPO, CA 93405

### TARGET PROPERTY COORDINATES

Latitude (North): 35.326979 - 35° 19' 37.12"  
Longitude (West): 120.733312 - 120° 43' 59.92"  
Universal Transverse Mercator: Zone 10  
UTM X (Meters): 706035.6  
UTM Y (Meters): 3911463.5  
Elevation: 248 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property Map: 5629228 SAN LUIS OBISPO, CA  
Version Date: 2012  
  
West Map: 5603506 MORRO BAY SOUTH, CA  
Version Date: 2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

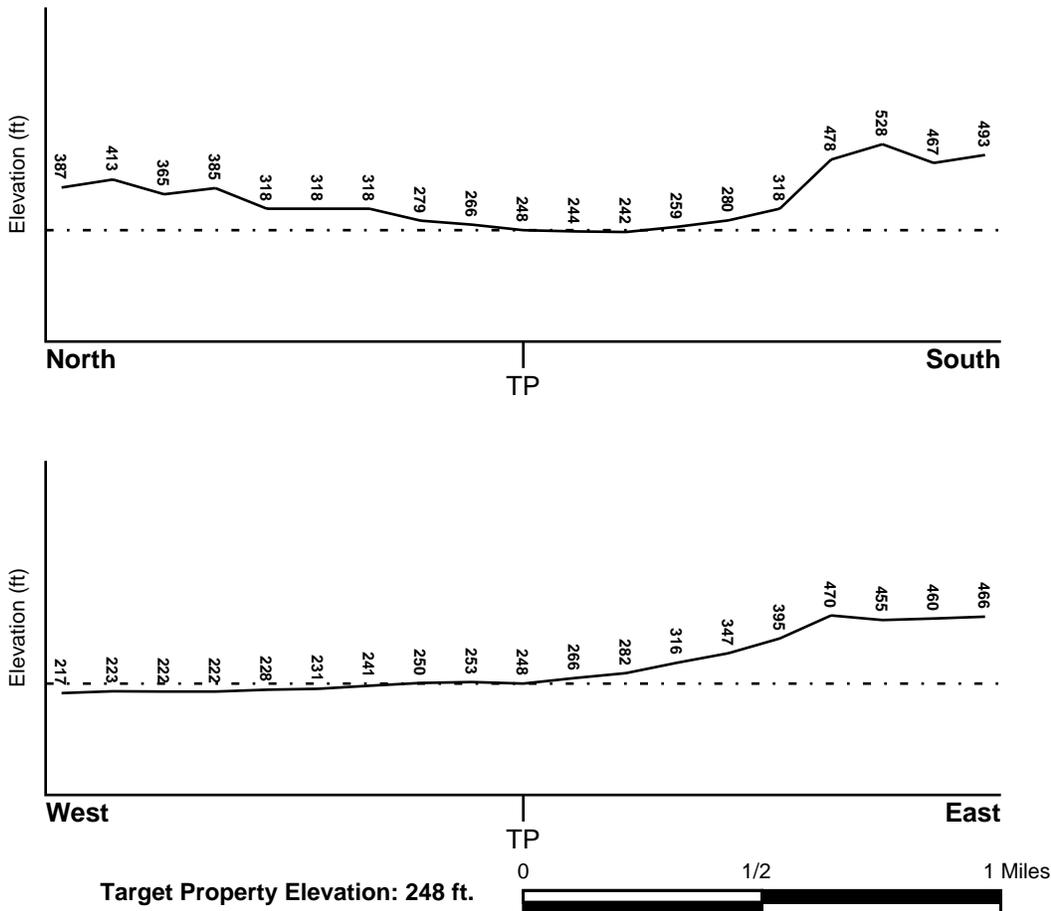
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## FEMA FLOOD ZONE

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
0603040475C	FEMA Q3 Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
06079C1034G	FEMA FIRM Flood data
06079C1065G	FEMA FIRM Flood data

## NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
SAN LUIS OBISPO	YES - refer to the Overview Map and Detail Map

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### *Site-Specific Hydrogeological Data\*:*

Search Radius:	1.25 miles
Status:	Not found

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
3	1/2 - 1 Mile ESE	NW
1G	1/2 - 1 Mile ESE	NW

For additional site information, refer to Physical Setting Source Map Findings.

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

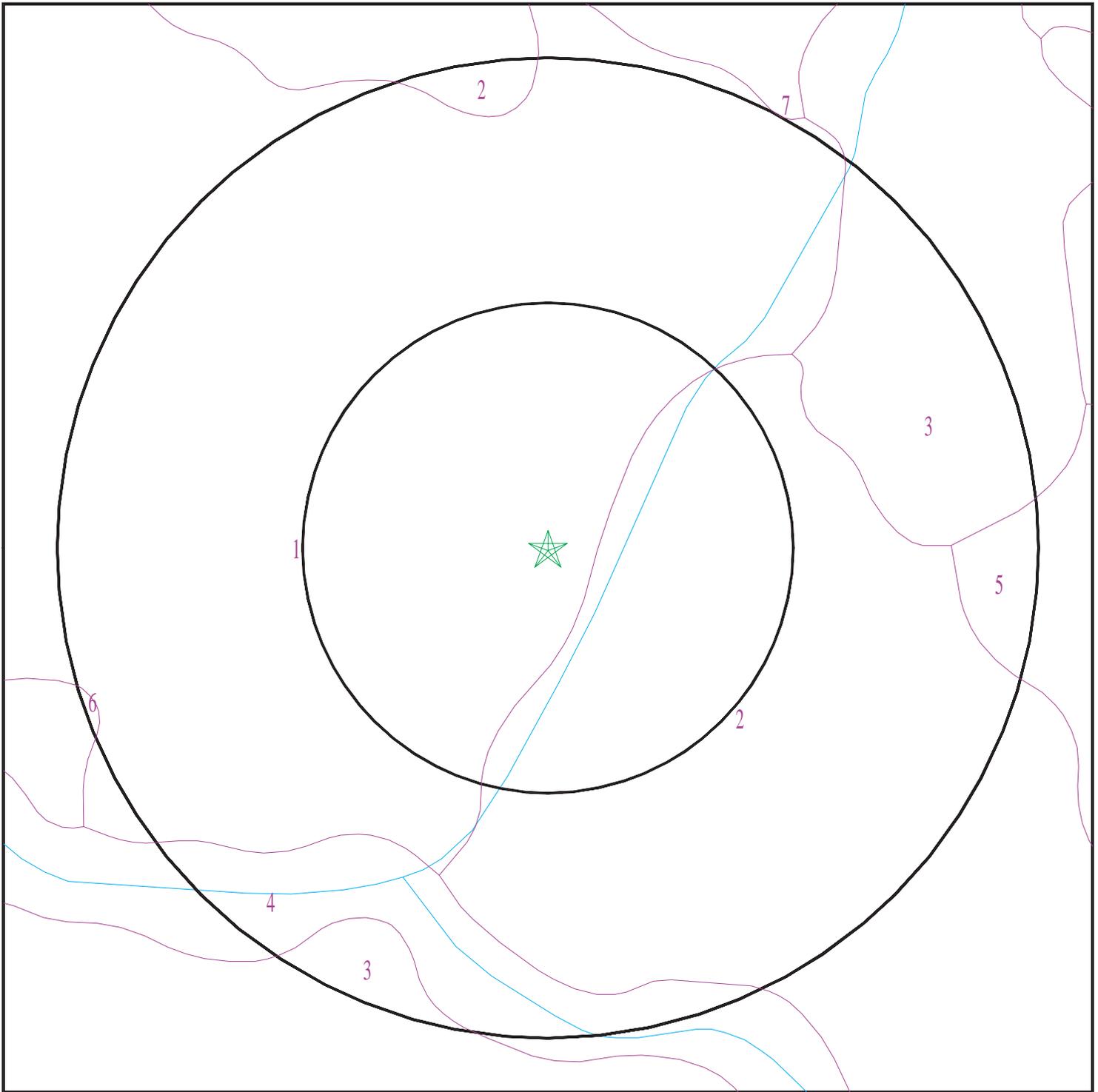
Era: Mesozoic  
System: Cretaceous  
Series: Upper Mesozoic  
Code: uMze(*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Eugeosynclinal Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 5326782.2s



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: Camp Luis Obispo  
ADDRESS: Camp Luis Obispo  
San Luis Obispo CA 93405  
LAT/LONG: 35.326979 / 120.733312

CLIENT: AECOM  
CONTACT: Jacquelyn Harrington  
INQUIRY #: 5326782.2s  
DATE: June 08, 2018 6:04 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

#### Soil Map ID: 1

Soil Component Name: Salinas

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	29 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
2	29 inches	72 inches	stratified loam to silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

#### Soil Map ID: 2

Soil Component Name: Cropley

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	35 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
2	35 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6

### Soil Map ID: 3

Soil Component Name: Cropley

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	35 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6
2	35 inches	59 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6

### Soil Map ID: 4

Soil Component Name: Riverwash

Soil Surface Texture: sand

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Excessively drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 31 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 141 Min: 42	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	5 inches	59 inches	stratified coarse sand to sandy loam	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:

### Soil Map ID: 5

Soil Component Name: Lodo

Soil Surface Texture: clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 30 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 14 Min: 4	Max: 7.3 Min: 6.1
2	11 inches	16 inches	unweathered bedrock	Not reported	Not reported	Max: 0 Min: 0	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 6**

Soil Component Name: Salinas

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	29 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 6.6
2	29 inches	72 inches	stratified loam to silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

**Soil Map ID: 7**

Soil Component Name: Los Osos

Soil Surface Texture: loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	14 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 7.3 Min: 5.6
2	14 inches	31 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 6.5 Min: 5.6
3	31 inches	38 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 7.8 Min: 6.6
4	38 inches	42 inches	weathered bedrock	Not reported	Not reported	Max: 0 Min: 0	Max: Min:

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

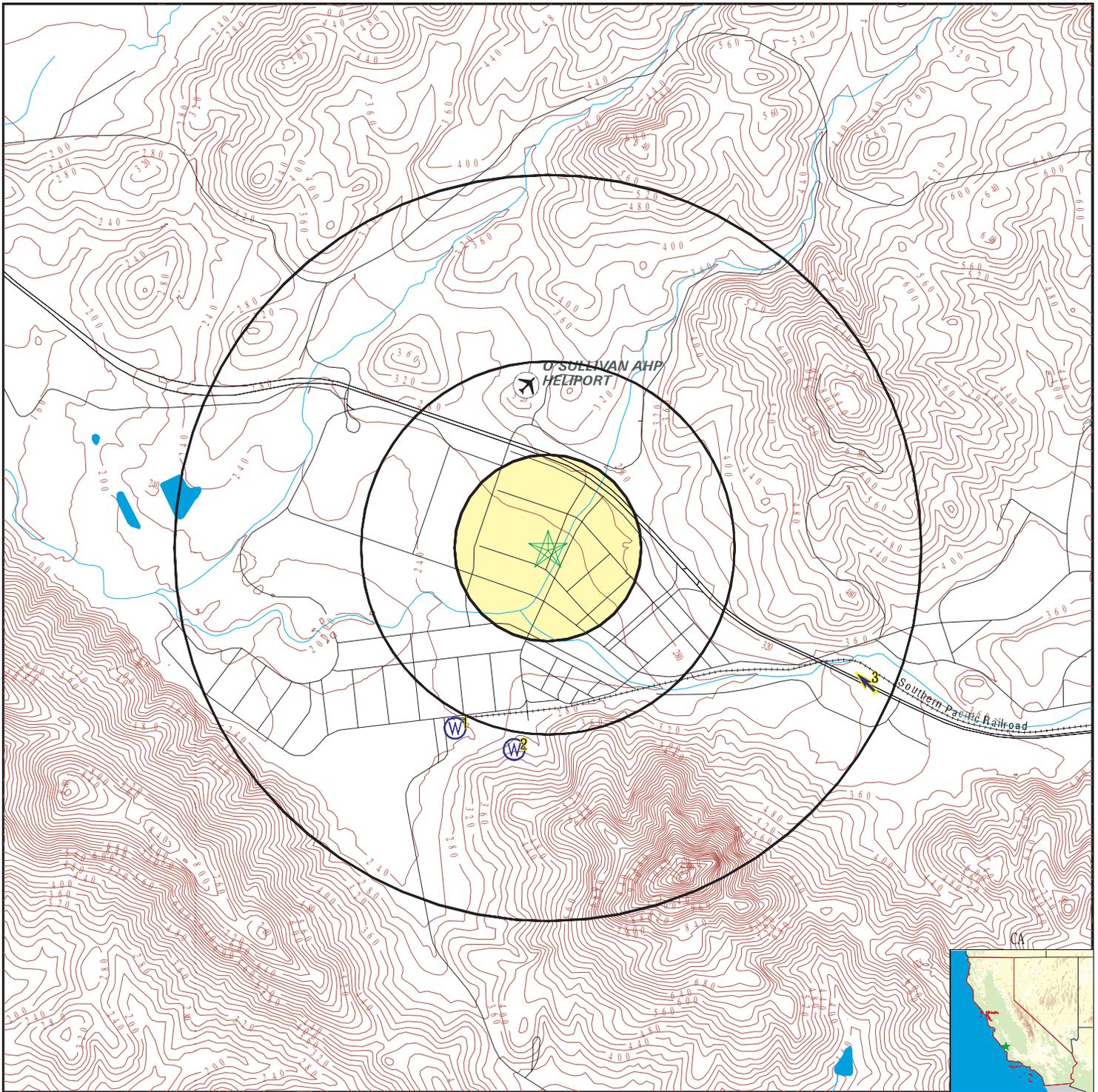
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	17472	1/2 - 1 Mile SSW
2	17485	1/2 - 1 Mile South

# PHYSICAL SETTING SOURCE MAP - 5326782.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Camp Luis Obispo  
 ADDRESS: Camp Luis Obispo  
 San Luis Obispo CA 93405  
 LAT/LONG: 35.326979 / 120.733312

CLIENT: AECOM  
 CONTACT: Jacquelyn Harrington  
 INQUIRY #: 5326782.2s  
 DATE: June 08, 2018 6:04 pm

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

<b>1</b> <b>SSW</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	<b>CA WELLS</b>	<b>17472</b>
---	-----------------	--------------

**Water System Information:**

Prime Station Code: 30S/11E-13A01 M	User ID: TAP	
FRDS Number: 4010830006	County: San Luis Obispo	
District Number: 06	Station Type: WELL/AMBNT/MUN/INTAKE	
Water Type: Well/Groundwater	Well Status: Active Raw	
Source Lat/Long: 351912.8 1204412.4	Precision: 1,000 Feet (10 Seconds)	
Source Name: WELL 03		
System Number: 4010830		
System Name: CALIFORNIA MENS COLONY		
Organization That Operates System:		
P.O. BOX 8101		
SAN LUIS OBISPO, CA 93409		
Pop Served: 15000	Connections: 5357	
Area Served: Not Reported		

<b>2</b> <b>South</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	<b>CA WELLS</b>	<b>17485</b>
--	-----------------	--------------

**Water System Information:**

Prime Station Code: 30S/12E-18D01 M	User ID: TAP	
FRDS Number: 4010830005	County: San Luis Obispo	
District Number: 06	Station Type: WELL/AMBNT/MUN/INTAKE	
Water Type: Well/Groundwater	Well Status: Active Raw	
Source Lat/Long: 351909.7 1204402.6	Precision: 1,000 Feet (10 Seconds)	
Source Name: WELL 02		
System Number: 4010830		
System Name: CALIFORNIA MENS COLONY		
Organization That Operates System:		
P.O. BOX 8101		
SAN LUIS OBISPO, CA 93409		
Pop Served: 15000	Connections: 5357	
Area Served: Not Reported		

<b>3</b> <b>ESE</b> <b>1/2 - 1 Mile</b> <b>Higher</b>	<b>AQUIFLOW</b>	<b>5513</b>
--	-----------------	-------------

Site ID: 107		
Groundwater Flow: NW		
Shallow Water Depth: Not Reported		
Deep Water Depth: Not Reported		
Average Water Depth: 72		
Date: DECEMBER 2		

<b>1G</b> <b>ESE</b> <b>1/2 - 1 Mile</b> <b>Lower</b>	<b>AQUIFLOW</b>	<b>5513</b>
--	-----------------	-------------

Site ID: 107		
Groundwater Flow: NW		
Shallow Water Depth: Not Reported		
Deep Water Depth: Not Reported		
Average Water Depth: 72		
Date: DECEMBER 2		

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

## AREA RADON INFORMATION

State Database: CA Radon

### Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93405	103	3

Federal EPA Radon Zone for SAN LUIS OBISPO County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.
- : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
- : Zone 3 indoor average level < 2 pCi/L.

---

### Federal Area Radon Information for SAN LUIS OBISPO COUNTY, CA

Number of sites tested: 15

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.673 pCi/L	87%	7%	7%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetland Inventory

Source: Department of Fish & Game

Telephone: 916-445-0411

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Water Well Database

Source: Department of Water Resources

Telephone: 916-651-9648

#### California Drinking Water Quality Database

Source: Department of Public Health

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## OTHER STATE DATABASE INFORMATION

#### California Oil and Gas Well Locations

Source: Department of Conservation

Telephone: 916-323-1779

Oil and Gas well locations in the state.

### RADON

#### State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

## PHYSICAL SETTING SOURCE RECORDS SEARCHED

### OTHER

Airport Landing Facilities: Private and public use landing facilities  
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater  
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

### STREET AND ADDRESS INFORMATION

© 2015 TomTom North America, Inc. All rights reserved. This material is proprietary and the subject of copyright protection and other intellectual property rights owned by or licensed to Tele Atlas North America, Inc. The use of this material is subject to the terms of a license agreement. You will be held liable for any unauthorized copying or disclosure of this material.

Camp Luis Obispo  
Camp Luis Obispo  
San Luis Obispo, CA 93405

Inquiry Number: 5326782.3

June 08, 2018

## Certified Sanborn® Map Report



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

# Certified Sanborn® Map Report

06/08/18

**Site Name:**

Camp Luis Obispo  
Camp Luis Obispo  
San Luis Obispo, CA 93405  
EDR Inquiry # 5326782.3

**Client Name:**

AECOM  
12120 Shamrock Plaza  
Omaha, NE 68154  
Contact: Jacquelyn Harrington



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AECOM were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## Certified Sanborn Results:

**Certification #** A0D0-4F71-994B  
**PO #** NA  
**Project** Camp San Luis Obispo

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.



Sanborn® Library search results

Certification #: A0D0-4F71-994B

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

### Limited Permission To Make Copies

AECOM (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

### Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice. Copyright 2018 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

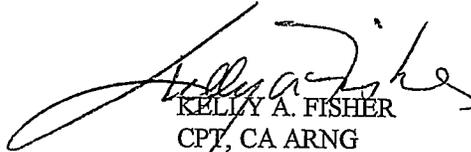
WMTC-SLO

28 May 1997

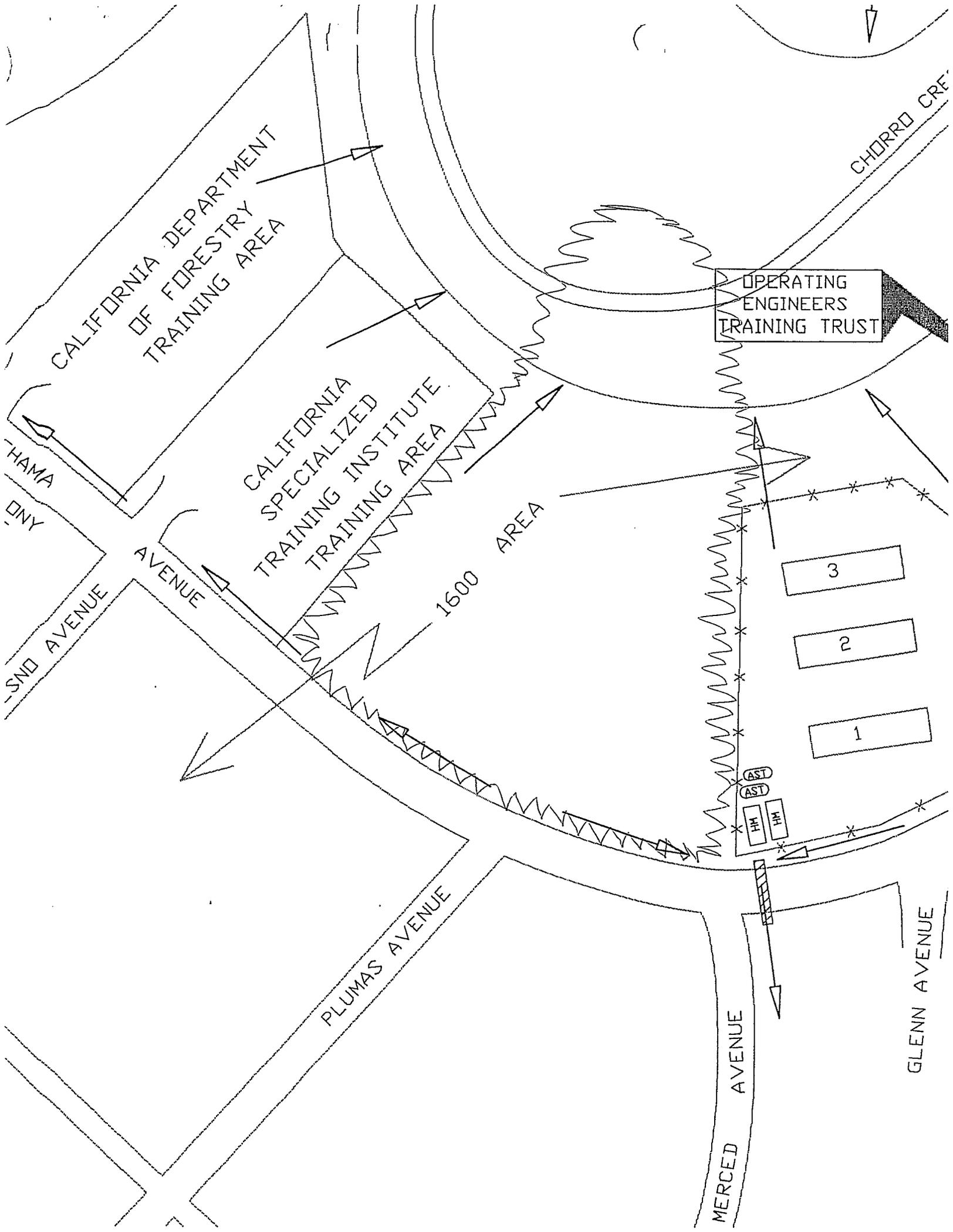
MEMORANDUM FOR See Distribution

SUBJECT: Request for annexation of property by California Specialized Training Institute (CSTI)

1. CSTI has requested the annexation of the area adjacent to the pre-existing haz mat training site for their exclusive use. This area is located next to their existing site and the California Conservation Corp facility. (See map attached). This training area is approximately three acres and is proposed by CSTI to be a "specialty" haz mat training area.
2. Enclosed you will find a copy of the CSTI proposal for the use of this area.
3. Request your review of the enclosed with comments in writing not later than 25 June to CPT Mavroleon. A response will be required due to an extensive transformation of the area .

  
KELLY A. FISHER  
CPT, CA ARNG  
Facility Manager

CF:  
COL Hageman  
LTC Parsonage  
MAJ Brun  
MAJ Roberts  
CPT Iljana  
CPT Mavroleon  
MSG Kessler  
SSG Peralta  
Chris Wilde  
Brian Duke  
CDF Training  
California Conservation Corp



CALIFORNIA DEPARTMENT  
OF FORESTRY  
TRAINING AREA

CALIFORNIA  
SPECIALIZED  
TRAINING INSTITUTE  
TRAINING AREA

1600 AREA

OPERATING  
ENGINEERS  
TRAINING TRUST

3

2

1

AST  
AST

HM  
HM

THAMA  
AVE

SNO AVE

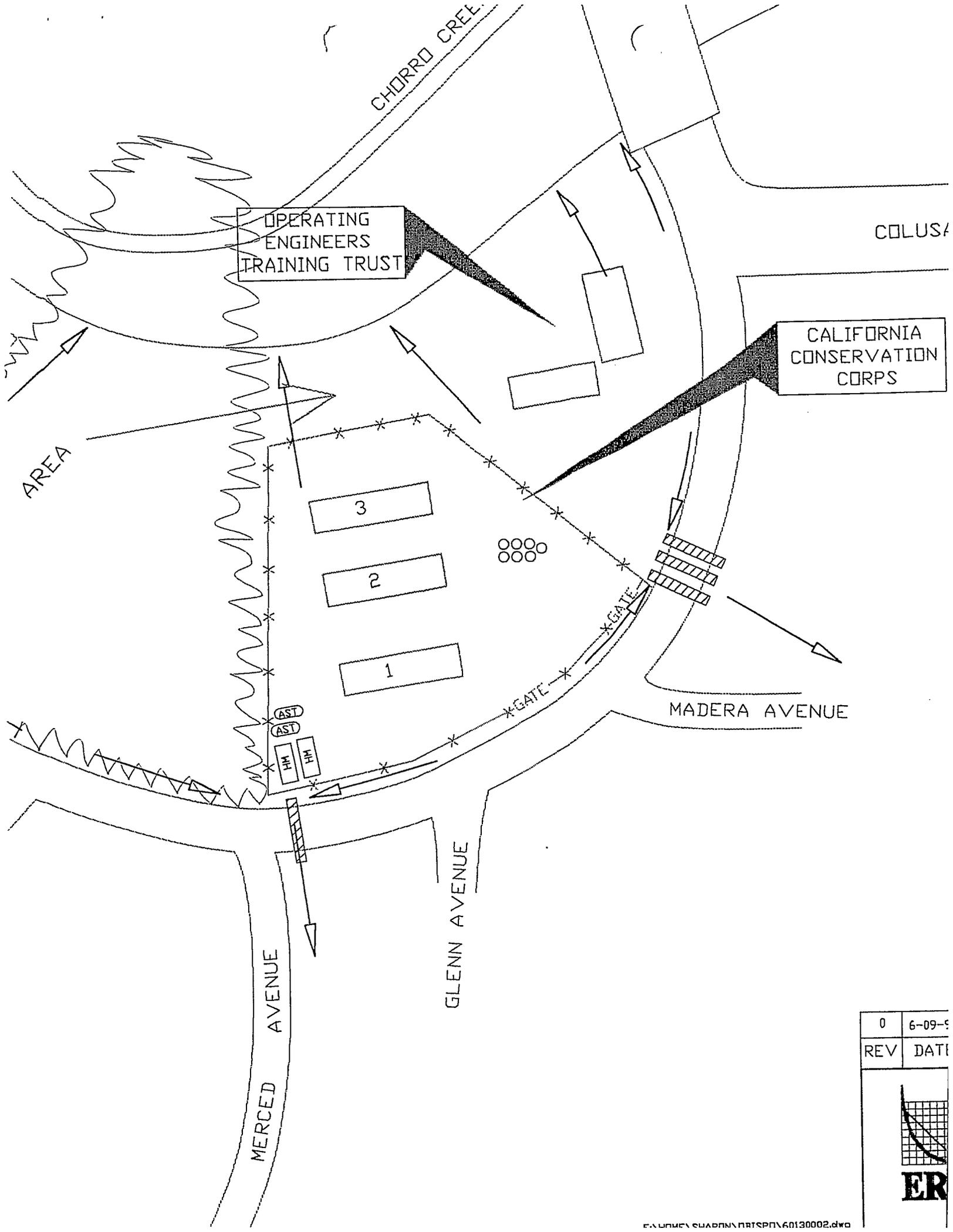
AVENUE

PLUMAS AVENUE

MERCED AVENUE

GLENN AVENUE

CHORRO CREEK



0	6-09-9
REV	DATE



## HAZARDOUS MATERIALS EMERGENCY RESPONSE TRAINING FACILITY PHASE II PROJECT

### Scope of Work:

CSTI has developed 2.5 acres of Camp San Luis Obispo to be used for specialized hazardous materials training per the submitted 1990 concept paper (see attached document). As we move into phase two, we are requesting the additional three acres, identified in the original concept paper, which is adjacent to the pre-existing haz mat training site and the California Conservation Corp facility. With the three acres we plan on the following improvements:

- Grading of the site and road base
- Adding a stream bed and pond
- Railcar pile-up
- Gases platform
- Above ground tank
- Tank truck loader & off-loader
- Plate shop
- Earthquake confined space
- Chlorine room
- Surface pipeline
- Drug lab building
- Terrorism response building
- Classroom

These upgrades will allow us to add seven "specialty" haz mat training programs. All of these training "props" will be built as temporary structures. Additionally, we will seek approval from the base prior to any construction.

### Benefit to the State:

The enhancement of the haz mat site will allow the State to expand into training that is not being currently addressed. The subject matter includes:

- Confined space entry
- Oil spill clean-up
- Drug lab clean-up and disposal
- Railcar derailment and assessment
- Post earthquake assessment
- Pipeline loading and off-loading
- Haz Mat Terrorism Response

This training will help responders to competently mitigate potentially lethal situations. The results will be lesser adverse impact to human life, environment, and property.

The three acres remains unused, hence by developing the land for this level of health and safety training would be a good use of State resources.

### Request for Approval:

We would like to request the following four actions from your Department:

1. Approval for the concept of developing the five acres for haz mat emergency response training.
2. Receive a waiver for an Environmental Impact Report (EIR), since this was accomplished near the site by OES Law Branch Urban Search and Rescue (The EIR was completed for the 22 acres across the road from the proposed haz mat site). No hazardous materials will be used at the site.
3. Begin grading the site per the attached work order.
4. Allow the placement of a chain linked fence around the property.

**Questions or Comments:**

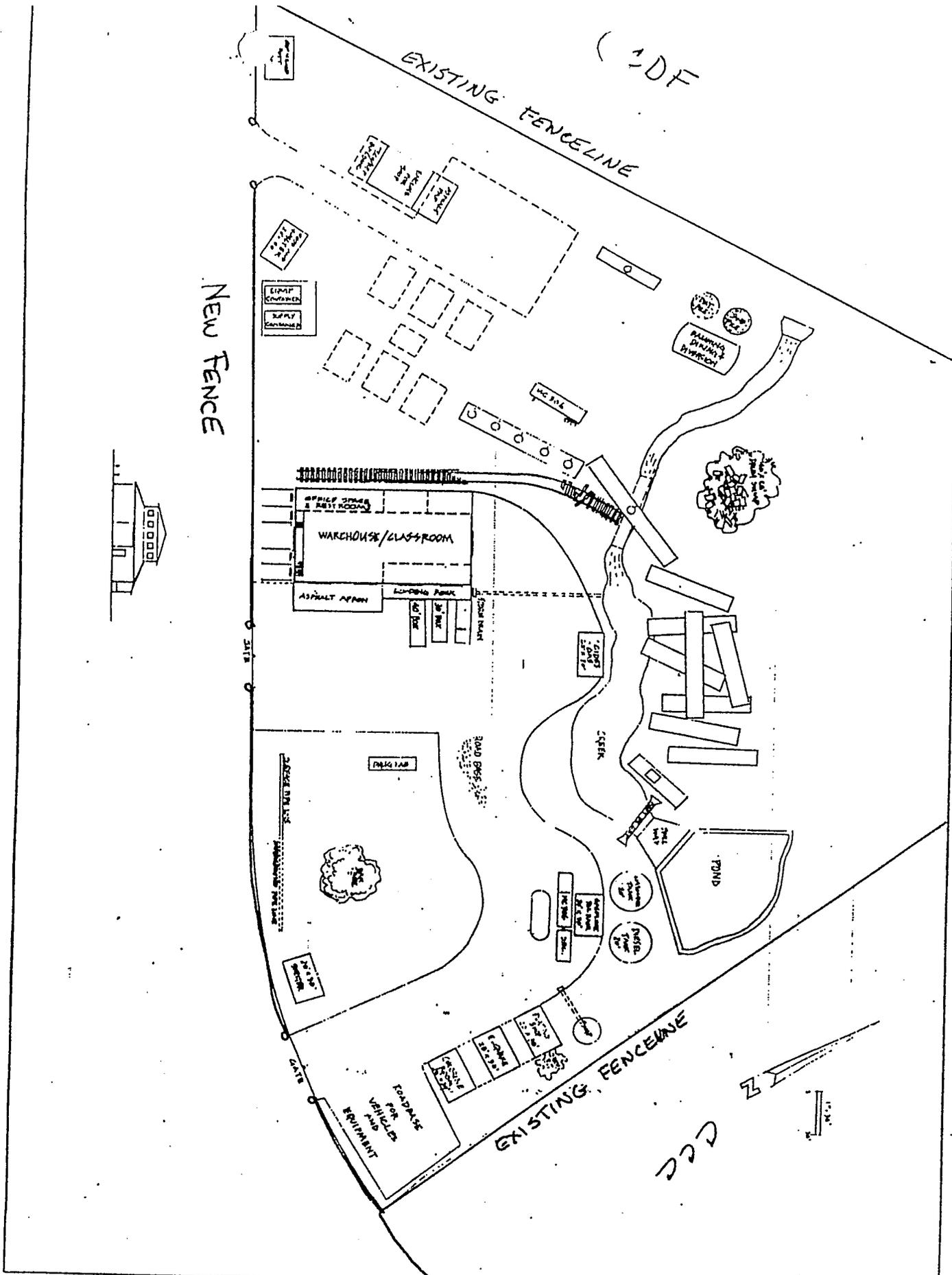
Questions or comments concerning this proposal can be sent to Michael Brady, Chief of Haz Mat Section at the California Specialized Training Institute (805) 549-3549.

California Specialized  
Training Institute

Office of Emergency Services

**Hazardous Materials  
Field Training Facility  
Proposal**

1990



9	SCALE	MAJOR MATERIALS FACILITY SITE CAMP SAN LUIS OBISPO	CALIFORNIA SPECIALIZED TRAINING INSTITUTE CALIF OFFICE OF EMERGENCY SERVICES	REVISIONS	DATE	DESIGNED 4.10.17
						DRAWN
						CHECKED



California Specialized Training Institute  
Office of Emergency Services

**Hazardous Materials  
Field Training Facility  
Proposal**

**Purpose:**

Currently, there are no formal hazardous materials training grounds in the State of California that serve public response agencies. There do exist some private or specialized sites ( Shell Oil, AeroJet, Del Valle) that address a portion of the hazardous materials response training, but these facilities are extremely limited and difficult to access for a majority of agencies.

Recent legislation has mandated the Office of Emergency Services (Government Code Section 8574.13) at CSTI to coordinate and provide training to these public agencies at the first responder through specialist level in conformance with CFR 1910 and, at the specialist level, NFPA Standard 472.

Starting the 1990/91 academic year, Hazardous Material Specialist will be taught at CSTI in conjunction with the State Fire Marshall. The course will consist of 5 week long lecture blocks and 2 week long manipulative blocks. In addition, the SFM will be presenting the lecture blocks on an outreach program that will require the last two weeks be taught at the CSTI field training facility. We are currently estimating 16 weeks of instruction (plus any specialized courses) per year on the training site. To meet this need we are proposing to develop a hazardous material training site that will accomodate the curriculum from these courses and expand as future programs will.

**Scope:**

This proposal lays out the basic description of the site, a development plan, and preliminary budget estimates. An expanded program description is under development that details scope of work, curriculum standards, and training site planning, construction, and operation elements.

## Description:

The drill site will be located at Camp San Luis Obispo approximately one mile from the campus. It is adjacent to an existing training facility operated by California Department of Forestry/San Luis Obispo County Fire. The land to be utilized by CSTI belongs to the state military system but has been given to CDF for training purposes. Therefore, authorization for use comes from both California National Guard and CDF. Both agencies have already given approval for site utilization.

Approximately 5 acres are available for use, although we anticipate developing only 60,000 square feet at this time (1 1/2 acres). Envisioned is a fenced area surrounding a site with a based access road and several concrete pads for scenario and training props. Compressed air, water, and electricity will be plumbed in to power the props as necessary. Most of the props will be mounted on small trailers to maximize space, while the larger props will be fixed. We are attempting to locate a railroad tank car to place at the site also. Storage for the props and air compressor/generator will be supplied using rented/purchased containerized storage units placed on a concrete pad.

Props/scenarios will include:

Basic Skills(SCBA's,Ladders)	Suit Familiarity
Cylinders	Drum Handling
Chlorine (150#/1 Ton)	Decon
Sampling Techniques	Donning/Doffing
Piping Assembly	Confined Space
Overhead Tank Leaks	Tanker Leaks
Pressure Cylinders	Dome Rail Cars
Pipeline Simulation	Storm Drain
Fuel Shell	Box Trailer
Bulk Fixed Tanks	Valving Structures
Patching/Plugging	Monitoring Equipment
Liquid/Gas Transfers	Surface Containment
Specific Products Drills	Drug Labs

All props will be operated off a combination of water and/or compressed air mixed with vegetable dye. No actual contaminants will be used and run-off is expected to be minimal.

## Funding:

OES/CSTI is requesting DHS funding to assist in the construction and equipment purchasing costs. CSTI is planning to incorporate expendable equipment costs (equipment maintenance, disposables, course production costs, etc.) into its annual budget.

## Development:

The current plan specifies that the site will be constructed using day labor from other state agencies and inmates. This eliminates a number of procedural and cost restrictions. Meetings with CDF have indicated they would be willing to perform a majority of the necessary construction work and equipment to complete the site. Project management will be provided from OES and CSTI. The only labor issues outstanding at this time are the Engineering and Design Services (estimated \$ 3000) and the electrical work (estimated \$1000).

### Material Cost Estimates: (by Commodity class)

Concrete/Surface Materials(Road Base.etc)	\$12,000
Lumber/Wood Products	\$ 4,000
Fencing/Metal Materials	\$10,000
Electrical	\$ 1,500
Plumbing	\$ 1,000
	<hr/>
	\$ 28,500

### Timelines: Completion Date April 1, 1991

- 1990 July 1- Complete Proposal Package  
Phase I and II Design finished  
1990/91 DHS Funding Contract written and signed  
Submit To OES for approval
- Oct 1- Approval to proceed with construction  
Construction work schedule with CDF finalized
- 15- Site grading begins
- Nov 1- Grading and Site prep completed  
Trenching begins  
Access road and preliminary base installation begins
- 1991 Jan 1- Access road completed  
Utility lines in place  
Begin forming concrete pads  
Begin perimeter fencing
- Mar 1- Concrete work complete  
Electrical work complete  
Final base compaction and grading complete  
Fencing completed
- Apr 1- Props positioned  
Storage Buildings Installed  
Air compressor/generator installed  
Site completed





LICENSE TO USE STATE MILITARY FACILITY

THIS AGREEMENT, made and entered into ~~the~~ as of 11 day of October, 2012, by and between the armory board of the State Military Facility located at

Campy San Luis Obispo, Bldg 738, 10 Sonoma Ave., San Luis Obispo, CA 93405, California (Armory Address) (City)

acting on behalf of the Adjutant General pursuant to Sections 431 and 432 Military and Veterans Code, State of California, hereinafter called the BOARD, and

Phillips 66 Co., Attn: Bill A. Hallett, 1232 Park St., Ste 300, Paso Robles, CA 93446 (Name and Address of Licensee)

hereinafter called the LICENSEE.

WITNESSETH

That the BOARD in consideration of the payment in advance by the Licensee of the TOTAL LICENSE FEE shown below, hereby authorizes and permits the LICENSEE to use the hereinafter described area of said facility during the times and for the purposes specified.

A. Dates and times of use: 1 December 2012 - 30 November 2013 Any 30 day use of facilities as determined by Phillips 66 Co. and coordinated through Operations, CSL0 (805) 594-6510.

B. Purposes (In detail): Fire Training

C. Facility area to be used: Zulu Cantonment Area

D. Basic rental rate: \$3,500.00 BHM x annually \$7,000.00 (Rate) (Number) (Hours, Days, Etc.)

E. Additional space charge: (Sq. Ft.) X (Hours) X \$005 per Hour \$

F. Personnel charges: (Days) X \$ (Daily Rate) \$

G. Fee per use: \$

H. TOTAL LICENSE FEE: \$3,500.00 BHM x \$7,000.00 (Fee Per Use) (Number of Uses)

The provisions on the reverse side hereof constitute a part of this agreement. Cashier's check or money order made payable to the Military Department, State of California, will be attached to license.

IN WITNESS WHEREOF, the parties have hereunto set their hands the day and year first above written.

Mr. Bill A. Hallett, Attorney-In-Fact Phillips 66 Co. (Licensee) 1232 Park St., Ste 300 Paso Robles, CA 93446 (805) 226-2641 (Address of Licensee)

LTC Nicole M. Balliet, Commanding President, Said Armory Board

Approved: The Adjutant General

DATE: 11-27-2012





State of California  
 The Natural Resources Agency  
 California Department of Forestry and Fire Protection (CAL FIRE)

## NOTICE OF EXEMPTION

**PROJECT TITLE** SLU Drill Grounds Training Site Lease and Operation

**PROJECT LOCATION** 1666 Tehama Ave., San Luis Obispo, CA 93405 **COUNTY** San Luis Obispo

**LEAD AGENCY** California Department of Forestry and Fire Protection (CAL FIRE)

**CONTACT** Alan Peters, SLU Unit Forester **PHONE** 805-903-3406  
**ADDRESS** 635 N. Santa Rosa, San Luis Obispo, CA 93405

**PROJECT DESCRIPTION**

CAL FIRE/San Luis Obispo County Fire leases the Drill Grounds Training Site from the California National Guard (CNG) at Camp SLO. The scope of this project consists of the operation, repair, maintenance, leasing and minor alterations of the existing public facilities located at the drill grounds.

The 3.92-acre drill grounds facility is located within the intersection of Tehama, Mono and Sutter Avenues approximately 1/2 mile southwest of Cuesta College. The existing project site consists of two permanent structures and a number of steel shipping containers that are located in a variety of configurations to provide fire department training opportunities including a rope rescue tower, burn building, multi-story burn building, active shooter, and storage. The project site consists of a level paved area with concrete slabs surrounded by gravel and a chain-link fence.

The project will include a variety of tactical drill ground activities required for fire department training. There will be no ground disturbance for these drill ground activities; however, noise may be caused by crews and small equipment. Smoke will occur as a result of training burns; however, all burning will be in accordance with a required burn permit issued by the San Luis Obispo County APCD. The project site is located near a dead end with no adjacent residential or recreational areas.

**EXEMPTION STATUS**

- Categorical Exemption Type/Section: 14 CCR § 15301 (Class 1) – The operation, repair, maintenance, leasing and minor alterations of existing public facilities.
- Statutory Exemption (state code section):
- Ministerial (§21080(b)(1); 15268)
- Declared Emergency (§21080(b)(3); 15269(a))
- Emergency Project (§21080(b)(4); 15269(b)(c))

**REASONS PROJECT IS EXEMPT**

This project fits under the Categorical Exemption listed in the CEQA Guidelines - 14CCR §15301 covering the operation, repair, maintenance, leasing and minor alterations of existing public facilities.

Field review by CAL FIRE staff confirmed that no exceptions apply which would preclude the use of a Notice of Exemption for this project. The Department has concluded that no significant environmental impact would occur to aesthetics, agriculture and forestland/timberland, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, or to utilities and service systems. Documentation of the environmental review completed by the Department is kept on file at San Luis Obispo Unit Headquarters.

**DATE RECEIVED FOR FILING**

Governor's Office of Planning & Research  
 OCT 11 2016  
 STATE CLEARINGHOUSE

*Helge Eng*  
 Helge Eng, Deputy Director Date 10/7/16  
 California Department of Forestry and Fire Protection



RCNI	Unit	Priority	Facility/Airspace Subdivision	Event Name	Standard	Start Date	End Date	Continuous
4138176	CONOCO PHILLIPS		TA S_CSLO	FIRE CREW TRAINING	No	03/09/2017 07:00 L	03/09/2017 15:30 L	No
4138177	CONOCO PHILLIPS		TA S_CSLO	FIRE CREW TRAINING	No	03/23/2017 07:00 L	03/23/2017 15:30 L	No
4140409	CONOCO PHILLIPS		TA S_CSLO	TACTICAL TRAINING	No	03/08/2018 07:00 L	03/08/2018 15:30 L	No
4140410	CONOCO PHILLIPS		TA S_CSLO	TACTICAL TRAINING	No	03/22/2018 07:00 L	03/22/2018 15:30 L	No
4142289	CONOCO PHILLIPS		TA S_CSLO	TACTICAL TRAINING	No	05/17/2018 07:00 L	05/17/2018 17:00 L	No





LICENSE NUMBER	0395
----------------	------

**LICENSE TO USE STATE MILITARY PROPERTY**

**BETWEEN**

**CALIFORNIA MILITARY DEPARTMENT**

**AND**

**PHILLIPS 66 COMPANY**

**FOR**

**USE OF CAMP SAN LUIS OBISPO FACILITIES OR GROUNDS**

This LICENSE dated for reference this 1st day of March, 2018, by and between the California Military Department (CMD), hereinafter called STATE, and the Phillips 66 Company, 18781 El Camino Real, Atascadero 93422, hereinafter called LICENSEE, without distinction as to number or gender, and effective upon execution by STATE. STATE and LICENSEE are sometimes referred to individually as a "party" and collectively as the "parties".

WHEREAS, the STATE has under its jurisdiction, certain real property known as Training Area Sierra, Camp San Luis Obispo, California, hereinafter called PREMISES; and,

WHEREAS, it is essential that STATE have a secure facility and surrounding grounds; and,

WHEREAS, it is consistent with STATE policy to support local enterprise when not in conflict with operational requirements; and,

WHEREAS, STATE has training areas available for non-military use as availability allows;

NOW THEREFORE, STATE and LICENSEE agree as follows:

**i.**

**GENERAL PROVISIONS**

- A. LICENSE is for the purpose of fire suppression/prevention training upon the property of Training Area Sierra at Camp San Luis Obispo.
- B. STATE reserves the right to reoccupy PREMISES upon declaration of emergency by the STATE or federal government.
- C. PREMISES will not be available for use during drill or active training periods: Because of the nature of STATE activities on PREMISES, drill dates are subject to change with little or no notice; however, STATE will make every reasonable effort to notify LICENSEE at least seven (7) calendar days before any change affecting LICENSEE use occurs.

- D. LICENSEE shall comply with all applicable statutes, laws, ordinances and rules or regulations adopted by the Federal, State or any City, City and County, County or other body politic and which pertains to the said use of said premises or any provisions of the License.
- E. Upon expiration of this license, LICENSEE will surrender PREMISES to STATE with appurtenances and fixtures in good order, condition, and repair, reasonable use and wear thereof and Acts of God excepted.
- F. This LICENSE shall not be assigned or sublet, in whole or in part, without the STATE'S written consent.
- G. LICENSEE shall comply with such reasonable rules and regulations as may be prescribed by STATE for the reasonable use and occupation of State Facilities.
- H. STATE shall supply PREMISES normal electrical utilities.
- I. LICENSEE understands and agrees the California Legislature may impose additional restrictions, limitations or conditions affecting LICENSE provisions or terms; however, any such changes shall not become effective until 30 days after the legislature has acted.
- J. STATE is not responsible for losses or damage to personal property, equipment or materials of LICENSEE and all losses shall be reported to STATE immediately upon discovery.
- K. LICENSEE shall not permit any alcoholic beverage to be offered for sale, stored, given away or otherwise disposed or consumed on any part of PREMISES.

## II.

### AUTHORIZED ACTIVITIES

- A. STATE will provide LICENSEE use of PREMISES identified in **Exhibit "A"**, consisting of one (1) page and attached hereto and incorporated herein by this reference.
- B. LICENSEE will take prudent care and exercise due caution in conducting fire training exercises upon PREMISES and will be responsible for providing appropriate emergency fire safety, suppression and medical resources for emergency use.
- C. LICENSEE shall conduct daily training activities between the hours of 0600 and 1600 unless otherwise approved in advance and in writing by Post Operations.
- D. Upon LICENSE expiration or termination, LICENSEE shall surrender PREMISES in good order, condition and repair, ordinary wear and tear excepted.

## III.

### NOTIFICATION

All notices or other communications required or permitted hereunder shall be in writing, and shall be personally delivered (including by means of professional messenger service) or sent by overnight courier, or sent by registered or certified mail, postage prepaid, return receipt requested to the addresses set forth below. All such notices or other communications shall be deemed received upon the earlier of (i) if personally delivered or sent by overnight courier, the date of delivery to the address of the person to receive such

notice, (ii) if mailed as provided above, on the date of receipt or rejection, when received by the other party if received Monday through Friday between 6:00 a.m. and 5:00 p.m. Pacific Standard Time. so long as such day is not a State or Federal holiday and otherwise on the next day provided that if the next day is Saturday, Sunday, or a state or federal holiday, such notice shall be effective on the following business day.

To LESSEE:

Phillips 66 Company  
Attn: Kristin Finefrock  
18781 El Camino Real, Atascadero, CA 93422.  
805-286-6078

To STATE:

California Military Department  
Attn: John Smith  
Camp San Luis Obispo  
10 Sonoma Ave. Bldg. 738  
San Luis Obispo, CA 93405  
(805) 594-6517

Notice of change of address or telephone number shall be given by written notice in the manner described in this section. LICENSEE is obligated to notice State offices listed above and the failure to provide notice to do so shall constitute a lack of notice. Nothing contained herein shall preclude the giving of any such notice by personal service.

#### IV.

#### INSURANCE REQUIREMENTS

- A. LICENSEE will maintain, during any license period, insurance coverage listed herein with insurance companies acceptable to STATE. Coverage will be maintained and, as required by the Director of Facilities and Infrastructure (J-9), LICENSEE has furnished the necessary Certificate of Insurance (Exhibit A) demonstrating the required insurance coverage will be in effect during the complete term of LICENSE, and the insurer will not cancel coverage without 30 days prior written notice to STATE. Coverage shall include, but not be limited to:
  1. Insurance with combined single limit liability of \$2,000,000, or
  2. Special event insurance with a limit of \$2,000,000, and
  3. A statement naming the United States, State of California, its officers, agents, employees, and servants as additional insured, but only with respect to the activities of the named insured.
- B. STATE is to be free from all liability and claims for damages by reason of any injury to any person or persons, including LICENSEE or property of any kind whatsoever and to whomsoever belonging, including LICENSEE, from any cause or causes whatsoever while in, upon, or in any way connected with PREMISES during the term of this license or any occupancy hereunder, except those arising out of the sole negligence of the STATE.
- C. LICENSEE agrees to indemnify and defend STATE in the event if any claim, demand, cause of action, judgments, obligations or liabilities, and all reasonable litigation and attorney's expenses which said party may suffer as a direct and proximate result of the violations of any law, breach of any terms of LICENSE, negligence or other wrongful act by a party to this license or such party's

employees, representatives, contractors, or any other person or persons acting within the direct control or authority of such party or its employees.

**V. FEES**

Licensee will pay Three Thousand Four Hundred Fifty Dollars (\$3,450) to STATE for PREMISES use.

Payment of \$3,450 is due upon LICENSE execution by LICENSEE: a corporate check made payable to the Military Department, State of California will be attached to the executed LICENSE.

**VI. TERM**

License shall take effect upon execution by STATE, but no earlier than March 1, 2018, and shall expire February 28, 2019, and shall be effective during any thirty (30) day period coordinated in advance with, and approved by Post Operations.

**VII. AMENDMENT AND TERMINATION**

LICENSE cannot be amended or modified in any way except by a written LICENSE duly executed by STATE and LICENSEE. Any proposal for amendment or modification must be delivered for review and approval by the Chief, Real Estate Branch or his delagatee.

LICENSE may be terminated by either party upon 30 days written notification to the other party at the addresses previously given in Item 3 above, Notification. Upon termination, the activities of the parties shall be governed by the applicable provisions of the Military and Veterans Code. STATE is not obligated to reimburse LICENSEE any fees should it terminate this LICENSE before reaching its full term.

**VIII. ENTIRE AGREEMENT**

LICENSE, along with any exhibits attached hereto, constitutes the entire covenant and understanding between STATE and LICENSEE for PREMISES. LICENSE supersedes all prior and contemporaneous routine activity agreements, representations or understandings, if any, whether oral or written.

**XI. DURATION & RENEWAL**

LICENSEE shall request LICENSE renewal prior to its expiration date. Each subsequent extension will be for no more than three months. LICENSE shall be reviewed as necessary prior to renewal to ensure conditions have not changed or new provisions are not required to protect the parties.

**X. RIGHT TO ENTER**

During continuance in force of LICENSE, there shall be, and is hereby expressly reserved to STATE and to any of its contractors, agents, employees, representatives, or licensees, the right at any and all reasonable times, and any and all places to temporarily enter upon said PREMISES for inspection or other lawful STATE purposes.

XI.

**ENVIRONMENTAL LAWS AND REGULATIONS**

LICENSEE must comply with all applicable local, State or Federal environmental provisions, requirements, ordinances, regulations or laws. LICENSE does not constitute any form of authorization, permit, or opinion with respect to the satisfaction thereof. LICENSEE agrees that it shall comply with all laws, federal, state, or local, existing during the term of this license pertaining to the use, storage, transportation, and disposal of any hazardous substance as that term is defined in such applicable law.

- A. In the event STATE or any of its affiliates, successors, principals, employees, or agents should incur any liability, cost, or expense, including attorney's fees and costs, as a result of the LICENSEE'S illegal use, storage, transportation, or disposal of any hazardous substance, including any petroleum derivative, the LICENSEE shall indemnify, defend, and hold harmless any of these individuals against such liability.
- B. Where the LICENSEE is found to be in breach of this Paragraph due to the issuance of a government order directing the LICENSEE to cease and desist any illegal action in connection with a hazardous substance, or to remediate a contaminated condition caused by the LICENSEE or any person acting under LICENSEE'S direct control and authority, LICENSEE shall be responsible for all costs and expenses of complying with such order, including any and all expenses imposed on or incurred by STATE in connection with or in response to such government order.
- C, Required conditions from STATE'S Environmental Determination dated February 16, 2017:
  - (1) Nesting Bird Survey: Camp San Luis Obispo will conduct a nesting bird survey within two weeks from the start of construction/training. If nesting bird(s) are found, an appropriate setback buffer will be determined and no construction activities will occur in this setback area until the birds have fledged and are no longer reliant on the nest. Contact the Environmental Department, Paige Farrell, 805.788.6931, to schedule the survey.
  - (2) Operational Water Run-Off Prevention Measures: No operational waters are permitted to run-off the project site and enter Chorro Creek. Camp San Luis Obispo and LICENSEE are both responsible for ensuring that all operational waters either percolates into soils on the project site or are contained an disposed of in the waste water system. If operational waters begin to flow, off-site training must cease until correctional measures are implemented.
  - (3) Hazardous Materials Reporting: Camp San Luis Obispo will be responsible for the LICENSEE documenting the use or storage of any hazardous materials, and for providing copies of any hazardous waste permits obtained from the San Luis Obispo CUPA, EPA, to the Compliance Officer (John Reid, 805.594.6543).

CONCURRENCE



INSTALLATION COMMANDER

DATE: 20 DEC 2017



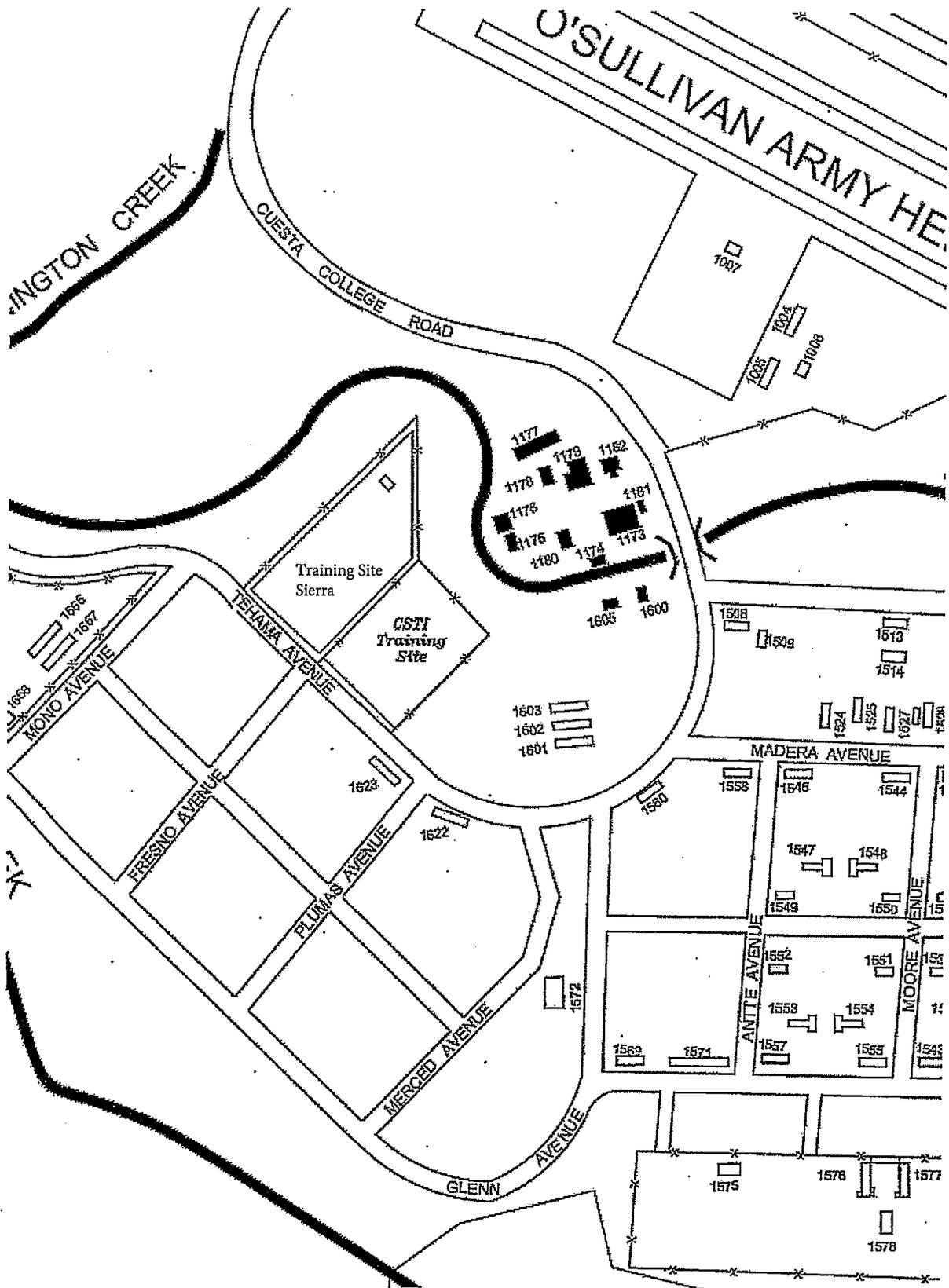
PHILLIPS 66 COMPANY

DATE: 12-20-2017

FOR THE ADJUTANT GENERAL

DATE:

Exhibit A





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

01/18/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

PRODUCER Self Procured 100 Bank Street Ste. 610 Burlington, VT 05401	CONTACT NAME: Kevin Boykin	FAX (A/C, No):	
	PHONE (A/C, No, Ext): 832-765-1810	E-MAIL ADDRESS: kevin.boykin@p66.com	
INSURED Phillips 66 Pipeline LLC P.O. Box 4428 Houston TX 77210	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: Spirit Insurance Company		14344
	INSURER B:		
	INSURER C:		
	INSURER D:		
	INSURER E:		
INSURER F:			

**COVERAGES**

CERTIFICATE NUMBER: 2016-02

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<b>GENERAL LIABILITY</b>	X	SL12-3116A	03/01/2018	03/01/2019	EACH OCCURRENCE \$ \$2,000,000.00
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ \$2,000,000.00
	<input checked="" type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR					MED EXP (Any one person) \$ \$5,000.00
						PERSONAL & ADV INJURY \$ \$2,000,000.00
						GENERAL AGGREGATE \$ \$2,000,000.00
						PRODUCTS - COMP/OP AGG \$ \$2,000,000.00
GEN'L AGGREGATE LIMIT APPLIES PER:						
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC					
	<b>AUTOMOBILE LIABILITY</b>					COMBINED SINGLE LIMIT (Ea accident) \$
	<input type="checkbox"/> ANY AUTO					BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS	<input type="checkbox"/> SCHEDULED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS	<input type="checkbox"/> NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident) \$
						\$
	<b>UMBRELLA LIAB</b>	<input type="checkbox"/> OCCUR				EACH OCCURRENCE \$
	<b>EXCESS LIAB</b>	<input type="checkbox"/> CLAIMS-MADE				AGGREGATE \$
	DED	RETENTION \$				\$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>	<input type="checkbox"/> Y/N	N/A			WC STATUTORY LIMITS OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)					E.L EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below					E.L DISEASE - EA EMPLOYEE \$
						E.L DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Re: Phillips 66 Company Fire Training (any 30 day use of facilities as determined by Phillips 66 and coordinated through Operations, CSLO) at the Zulu Cantonment Area of Camp San Luis Obispo.

**CERTIFICATE HOLDER**

California Military Department  
CAFE (Box 18)  
P O. Box 269101  
Sacramento CA 95826-9101

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

AGENCY CUSTOMER ID: \_\_\_\_\_

LOC #: \_\_\_\_\_



## ADDITIONAL REMARKS SCHEDULE

Page 1 of 1

AGENCY Self Procured		NAMED INSURED Phillips 66 Company P.O. Box 4428 Houston, TX 77210	
POLICY NUMBER SL-12-3116A		EFFECTIVE DATE: 03/01/2015	
CARRIER Spirit Insurance Company	NAIC CODE 14344		

### ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 FORM TITLE: \_\_\_\_\_

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, WE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER(S) NAMED ON THIS CERTIFICATE, EXCEPT FOR NON-PAYMENT OF PREMIUM OR ANY OTHER CIRCUMSTANCE PERMITTED BY STATE LAW OR POLICY CONDITIONS. FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OF LIABILITY OF ANY KIND UPON US.

As Respects General Liability:

The United States, State of California Military Department, its officers, agents, employees, and servants are included as Additional Insured where required by written contract executed prior to loss. The coverage provided for any Additional Insured is no greater than that required by written contract and in no event broader than the terms, conditions, and limits of the policy.



April 9, 1972

Both Cal Poly and Cuesta College had active airfield runways at one time. I recall having a conversation with a pilot who said that the instructions for the Cal Poly runway said to beware of wandering livestock. Poly's runway was near the Aeronautical unit now the baseball field. The Camp San Luis Obispo airfield next to Cuesta College is still used by the National Guard for helicopters and is between the campus and the creek. A radio controlled airplane club used to have permission to use the runway in the mid -1980's but it was revoked when the consequences of a manned-unmanned collision were considered.

Tragedy struck the Cuesta Campus in 1972. Quoting from the April 10, 1972 story:

### **Air crash kills two on campus**

Two men were killed instantly Sunday about 4:20 p.m. when their single engine monoplane crashed on the new Cuesta College campus. Victims were the pilot Richard Race, 50, of Fresno and Michael A. Nolan, 49, of 1140 Montalban St. San Luis Obispo.

They reportedly had just returned from a National Guard meeting at Fort Irwin near Barstow. It was not definitely determined whether the plane was taking off or was attempting to land when it ran out of runway space.

The National Guard plane, based in Fresno, struck a frame building used as a warehouse at the end of the runway and sheared off the left wing. The craft then veered toward the creek. The right wing caught in a pepper tree and the fuselage landed in the creek upside down and caught fire.

Both bodies were burned.

The crash site is near the old National Guard gymnasium, still used as a gym by the college, and west of the college's new physical education building and tennis courts.

A team of Army and National Guard experts was due to begin an investigation today.

Lt. Col. Nolan was buried with full military honors at the San Luis Obispo Odd Fellows Cemetery as about 200 guardsmen paid tribute.

Photos were by Wayne Nicholls





# Navy plane crash, Anzio, World War II week by week

David Middlecamp - dmiddlecamp@thetribunenews.com

February 12, 2014 12:35 PM

Updated February 12, 2014 12:35 PM

## **Feb. 5, 1944**

One of three Navy bombers flying in formation crashed after diving above the hills at Camp San Luis Obispo. Members of the L.L. Hill family at 230 Hathway Ave. saw the plane fall and a trail of black smoke come up from the crash site. Official confirmation was not immediately available, but the story was verified by three eye witnesses.

One of the two men killed in the Navy dive bomber crash was identified as Lt. Cmdr. Harlan "Rocky" Dixon.

Quoting from the story: "Dixon, 29, one of the youngest lieutenant commanders in the Naval Air Forces, had received two Navy Crosses, one for blasting two carriers in the Coral Sea, and the second for locating the enemy carrier which sent planes to mortally wound the Yorktown in the battle of Midway and for directing planes to the enemy ship which subsequently was sunk. He also assisted in sinking three other Japanese vessels at Midway."

**SUGGESTED FOR YOU**



PWSName	FacilityName	FacilityWaterType
Atascadero Mutual Water Company	Treatment Building C	GW

CollectionDate	Contaminant	MRL	MethodID	AnalyticalResultValue	Region	State
10/30/2013	PFOA	0.02	EPA 537	0.028	9	CA

DATE: 5/11/05

**CALIFORNIA ARMY NATIONAL GUARD PROJECT INFORMATION PACKAGE**  
(To be completed by proponent)

1. NAME OF PROJECT/ACTION: Fire fighting Training

2. PROJECT/ACTION LOCATION: CAL TRANS YARD

3. DESCRIPTION OF PROJECT/ACTION: (Include USGS, Army tactical or equivalent map with the site clearly marked and applicable drawings, site plans, building elevations, areas of impact, etc.)

A. The project/action will involve (Check one or more)

- Training Activities/Training Areas
- Construction
- Maintenance /Repair/Rehabilitation
- Lease or License
- Reorganization/Restationing
- Environmental Permits/Inspections
- Preparation of an Environmental Baseline Study (EBS)
- Other (Explain)

B. Description of Proposed Project/Action (Include any measures to reduce impacts. Attach additional pages as needed): Exercise to train firefighters on how to apply foam (AFFF)

C. Start and End Dates of Proposed Action: \_\_\_\_\_ to \_\_\_\_\_

Name of Proponent, Address and Phone Number of Proponent:

4. PURPOSE AND NEED FOR THE PROJECT ACTION:

5. ALTERNATIVES: Describe the Alternatives to the Proposed Action considered during the planning process. (EA/EIS only)

---

---

---

---



---

## CDF/San Luis Obispo County Fire Department

---

**635 N. Santa Rosa • San Luis Obispo • California 93405**  
**Phone: 805-543-4244 • Fax: 543-4248**

14 March, 2005

Jody Olsen:

The purpose of this exercise is to train our firefighters on how to apply foam to a large tank truck trailer, simulating a highway type emergency involving an over the road tanker carrying a flammable liquid. Ansulite is a foaming agent that when applied will form a 6" blanket of foam. It's intended purpose is to seal the flammable product from the atmosphere and not allow it to burn, or extinguish a fire and keep it from reigniting.

The prop we would use belongs to CSTI and is sitting in the old Cal Trans yard adjacent to the O Connor gate. We would use the parking area to develop stage the tanker and foam it down repeatedly cycling the firefighters into the exercise.

At the 6% application rate we would use 30 gallons of foam per 500 gallons of water (the capacity of each fire engine). At this rate we would be able to produce 8 drills using 4000 gallons of water.

I'm planning on training the firefighter on two separate evenings.

Attached is a copy of the Ansulite product information and the MSDS sheets.

Tim Harness  
CDF  
458-9576

# ANSUL®

## DESCRIPTION

ANSULITE ARC 3%/6% Alcohol Resistant Concentrate is formulated from special fluorochemical and hydrocarbon surfactants, a high molecular weight polymer, and solvents. It is transported and stored as a concentrate to provide ease of use and considerable savings in weight and volume.

It is intended for use as a 3% or 6% proportioned solution (depending on the type of fuel) in fresh, salt or hard water. (Water hardness should not exceed 500 ppm expressed as calcium and magnesium.) It may also be used and stored as a premixed solution in fresh or potable water for use with the Ansul Model AR-33-D wheeled fire extinguisher.

There are three fire extinguishing mechanisms in effect when using ANSULITE ARC concentrate on either a conventional Class B hydrocarbon fuel such as gasoline, diesel fuel, etc., or a Class B polar solvent (water miscible fuel) such as methyl alcohol, acetone, etc. First, an aqueous film is formed in the case of a conventional hydrocarbon fuel, or a polymeric membrane in the case of a polar solvent fuel. This film or membrane forms a barrier to help prevent the release of fuel vapor. Second, regardless of the fuel type, a foam blanket is formed which excludes oxygen and from which drains the liquids that form the film or the polymeric membrane. Third, the water content of the foam produces a cooling effect.

# EXTINGUISHING AGENT DATA SHEET

## Physicochemical Properties at 77 °F (25 °C)

Appearance	Light Amber Gel-Like Liquid
Density	0.985 ± 0.050 gm/ml
pH	7.0 - 8.5
Refractive Index	1.3600 ± .0020
Viscosity	2200 ± 300 centipoise*
Spreading Coefficient	5.7 ± 1.5

\*Brookfield Viscometer Spindle #4, Speed 20

ANSULITE ARC Alcohol Resistant Concentrate is a non-Newtonian fluid that is both pseudoplastic and thixotropic. Because of these properties, dynamic viscosity will decrease as shear increases.

## APPLICATION RATES

Application Rates using U.L. 162 Standard 50 ft.<sup>2</sup> Fire Test on representative hydrocarbon and polar solvent fuels are listed below.

### U.L. Type II Application<sup>(1)</sup> - Polar Solvents

Fuel Group	Concentration	U.L. Test Application Rate		U.L. <sup>(2)</sup> Recommended Application Rate	
		gpm/ft. <sup>2</sup>	(Lpm/m <sup>2</sup> )	gpm/ft. <sup>2</sup>	(Lpm/m <sup>2</sup> )
<b>Alcohol</b>					
Methanol (MeOH)	6%	.06	(2.5)	.10	(4.1)
Ethanol (EtOH)	6%	.06	(2.5)	.10	(4.1)
Isopropanol (IPA)	6%	.09	(3.7)	.15	(6.1)
<b>Ketone</b>					
Acetone	6%	.09	(3.7)	.15	(6.1)
Methyl Ethyl Ketone (MEK)	6%	.09	(3.7)	.15	(6.1)
<b>Carboxylic Acid</b>					
Acetic Acid	6%	.10	(4.1)	.17	(6.9)
<b>Aldehyde</b>					
Propionaldehyde	6%	.10	(4.1)	.17	(6.9)
<b>Ester</b>					
Ethyl Acetate	6%	.06	(2.4)	.10	(4.1)
Butyl Acetate	6%	.06	(2.4)	.10	(4.1)

### U.L. Type III Application<sup>(3)</sup> - Hydrocarbons

Fuel	Concentration	U.L. Test Application Rate (gpm/ft. <sup>2</sup> )	U.L. Test Application Rate (Lpm/m <sup>2</sup> )	U.L. <sup>(2)</sup> Recommended Application Rate (gpm/ft. <sup>2</sup> )	U.L. <sup>(2)</sup> Recommended Application Rate (Lpm/m <sup>2</sup> )
Heptane	3%	.04	(1.6)	.10	(4.1)
Toluene	3%	.04	(1.6)	.10	(4.1)
Gasoline	3%	.04	(1.6)	.10	(4.1)
10% Gasohol (EtOH)	3%	.04	(1.6)	.10	(4.1)

(1) TYPE II DISCHARGE OUTLET - A device that delivers foam onto the burning liquid and partially submerges the foam or produces restricted agitation of the surface as described in U.L. 162.

(2) U.L. builds in a 5/3 safety factor from its test rate to its recommended rate of application.

(3) TYPE III DISCHARGE OUTLET - A device that delivers the foam directly onto the burning liquid as described in U.L. 162.

# ANSULITE® ALCOHOL RESISTANT CONCENTRATE (ARC) 3% AND 6% AFFF CONCENTRATE

## APPLICATION

ANSULITE ARC 3%/6% AFFF is unique among the ANSULITE AFFF agents in that it can be used on either conventional Class B fuels or the polar solvent type Class B fuels. Its excellent wetting characteristics make it useful in combating Class A Fires as well. Because of the low energy to make foam, it can be used with both aspirating and non-aspirating discharge devices.

To provide even greater fire protection capability, it can be used with dry chemical extinguishing agents without regard to the order of application to provide even greater fire protection capability. Due to the velocity of the dry chemical discharge, care must be taken not to submerge the polymeric membrane below the fuel surface.

**PERFORMANCE**

**Fire Performance** – The fire performance of ANSULITE ARC 3%/6% AFFF is measured primarily against Underwriters Laboratories Standard 162, 5th Edition. There are no U.S. or listed government specifications on this type of product.

**Foaming Properties** – When used with fresh, salt or hard water, at the correct dilution with most conventional foam making equipment, the expansion will vary depending on the performance characteristics of the equipment. Aspirating discharge devices produce expansion ratios of from 5:1 to 10:1 depending primarily on type of aspirating device and flow rate. Non-aspirating devices such as handline water fog/stream nozzles or standard sprinkler heads give expansion ratios of 2:1 to 4:1.

**Proportioning** – ANSULITE Alcohol Resistant Concentrate (ARC) 3% and 6% AFFF Concentrate can be easily proportioned (at the correct dilution) using most conventional proportioning equipment such as:

1. Balanced pressure and in-line balanced pressure pumped proportioning equipment
2. Balanced pressure bladder tank type proportioner
3. Around-the-pump proportioners
4. Fixed or portable (in-line) venturi type proportioners
5. Handline nozzles with fixed induction/pickup tubes

The minimum and maximum usable temperature for ANSULITE ARC 3%/6% Concentrate in this equipment is 35 °F (2 °C) to 120 °F (49 °C) respectively.

**Storage/Shelf Life** – When stored in the packaging supplied (polyethylene drums or pails) or in equipment recommended by the manufacturer and within the temperature limits specified, the shelf life of ANSULITE ARC 3%/6% AFFF is about 20-25 years. The factors affecting shelf life and stability for ANSULITE AFFF Agents are discussed in detail in Ansol Technical Bulletin No. 54. Freezing of the product should be avoided. If, however, the product is frozen during transport or storage, it must be thawed and inspected for signs of separation. If separation has occurred, the product must be mechanically mixed until homogeneous.

When the concentrate is to be stored in an atmospheric storage tank, a 1/8 to 1/4 in. (3 – 6 mm) layer of mineral oil should be added to seal the concentrate and minimize the effects of evaporation.

**Compatibility** – Since ANSULITE Alcohol Resistant Concentrate (ARC) is a unique blend of surfactants, high molecular weight polymers, and solvents; it is recommended that Ansol Fire Protection be consulted before ANSULITE ARC concentrate is mixed with any other concentrates.

**Materials of Construction Compatibility**

Tests have been performed with ANSULITE ARC Concentrate verifying its compatibility with standard carbon steel "black" pipe and pipe manufactured from various stainless steel or brass compounds. Alternative pipe, plastic fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction. Refer to Ansol Technical Bulletin No. 59, Form No. F-90109, addressing acceptable materials of construction for use with Ansol foam concentrates.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

Please first consult Ansol Fire Protection for specific guidelines concerning materials of construction.

**Inspection** – As with any fire extinguishing agent, ANSULITE ARC Concentrate, whether in the concentrate or pre-mixed form, should be inspected periodically. Please refer to the Field Inspection Manual. (Part No. 31274-01), for the detailed procedures to perform this inspection. An annual inspection is recommended unless unusual conditions of exposure occur such as are described in Ansol Technical Bulletin No. 54. In such cases, Ansol's recommendation should be sought.

**APPROVALS AND LISTINGS**

There are no military or federal specifications covering products such as ANSULITE ARC 3%/6% polar solvent AFFF type concentrates. However, ANSULITE ARC is approved by Det Norski Veritas (DNV) under Certificate Number F-4862.

Underwriters Laboratories successfully tested ANSULITE ARC 3%/6% AFFF to the requirements contained in the U.L. Standard 162, "Standard for Air-Foam Equipment and Liquid Concentrates." To receive the U.L. listing, the following tests had to be performed successfully:

1. Foam Quality Tests
2. Class B Hydrocarbon Fuel Fire Tests
3. Class B Polar Solvent Fuel Fire Tests
4. Foam Identification Tests
5. Tests of Shipping Containers
6. Class D I Hydrocarbon and Polar Solvent Fuel Sprinkler Tests (Standard type both upright and pendent)
7. Subsurface Injection

Besides determining agent characteristics, Underwriters Laboratories lists ANSULITE ARC foam concentrate for use with specific hardware components that also carry the U.L. listing. To obtain these listings, Ansol selected various hardware components from the major U.S. manufacturers of foam hardware.

ANSULITE ARC 3%/6% Alcohol Resistant Concentrate is available in pails, drums, or bulk shipment.

Part No. 55797 5 Gallon Pail  
Part No. 55808 55 Gallon Drum  
Part No. 56084 Bulk

**Shipping Weight:**

5 gal. (19 L) pail – 45 lbs. (20.4 kg)  
55 gal. (208.1 L) drum – 495 lbs.  
(224.5 kg)

**Cube:**

5 gal. (19 L) pail – 1.25 cu. ft.  
(.0353 m<sup>3</sup>)  
55 gal. (208.1 L) drum – 11.83 cu. ft.  
(.3350 m<sup>3</sup>)

ANSUL and ANSULITE are registered trademarks.

**ANSUL**<sup>®</sup>ANSUL INCORPORATED  
MARINETTE, WI 54143-2542**ANSULITE ARC MATERIAL SAFETY DATA SHEET**  
ACCORDING TO 93/112/EEC**I. Identification of the Substance/Preparation and of the Company**

Trade Name: ANSULITE ARC (Alcohol Resistant Concentrate)  
 Manufacturer/Supplier: ANSUL INCORPORATED  
 Address: One Stanton Street, Marinette, WI 54143-2542  
 Prepared by: Safety and Health Department  
 Phone: 715-735-7411  
 Fax: 715-732-3472  
 Internet/Home Page: <http://www.ansul.com>  
 Emergency Phone Number: CHEMTREC 800-424-9300 or 703-527-3887  
 Date of Issue: February 2002

**II. Composition/Information on Ingredients**

Component	Wt. %	CAS No.	EINECS	Class, R, and S Phrases
Proprietary mixture of hydrocarbon surfactants, fluorsurfactants, inorganic salts, high molecular weight polyseccaride and water:	84.9	Not applicable	Listed	(See Section XV)
Diethylene Glycol Monobutyl Ether:	15.0	112-34-6	203-961-6	(See Section XV)
Dowacil 75	0.015	None, mixture	Listed	(See Section XV)

(a) This chemical is subject to reporting requirements of SARA Title III Section 313 and 40 CFR Section 372.

**III. Hazards Identification**

## For Humans

## Threshold Limit Values:

Diethylene Glycol Monobutyl Ether:

ACGIH TLV-TWA

600 ppm.

OSHA PEL (General Industry) 8 hour TWA: 1000 ppm (2950 mg/m<sup>3</sup>).

## Signs and Symptoms:

## Acute Exposure:

Eye Contact:

May cause mild transient irritation.

Inhalation:

Not an expected route of entry.

Skin Contact:

May cause mild transient irritation and/or dermatitis.

Ingestion:

Irritating to mucous membranes. Large oral doses could produce narcosis.

Chronic Overexposure:

Kidney, liver, gastrointestinal, and spleen.

Medical Conditions Generally Aggravated by Exposure: Diseases of the Kidney and liver.

Chemical Listed as Carcinogen or Potential Carcinogen:

National Toxicology Program  NoI.A.R.C. Monographs  NoOSHA  No

For Environment:

(See Section XII).

WHMIS Information:

**IV. First-Aid Measures**

Inhalation: Remove victim to fresh air. Seek medical attention if discomfort continues.  
 Eye Contact: Flush with large amounts of water. If irritation persists, seek medical attention.  
 Skin Contact: Wash thoroughly with soap and water. If irritation persists, seek medical attention.  
 Ingestion: If patient is conscious, give large amounts of water and induce vomiting. Seek medical help.

**V. Fire-Fighting Measures**

Extinguishing Media: THIS IS AN EXTINGUISHING AGENT.  
 Special Procedures: None.  
 Unusual Fire and Explosion Hazards: None.

**ANSULITE ARC (Continued)****VI. Accidental Release Measures****Personal Precautions:**

Respiratory Protection: (See Section VIII)  
 Hand Protection: (See Section VIII)  
 Eye Protection: (See Section VIII)  
 Skin and Body Protection: (See Section VIII)

**Clean up Precautions:**

Stop leaks. Contain spill. Remove as much as possible. Place in closed container for proper disposal. Wash spill area with large amounts of water to remove traces as material is very slippery. Prevent material from reaching sewers or waterways to avoid nuisance foaming.

**Waste Disposal Methods:**

(See Section XIII)

**VII. Handling and Storage****Handling:**

Do not mix with other fire fighting agents. See incompatibility information in Section X.

**Storage:**

Store in original container. Keep tightly closed.

**VIII. Exposure Controls/Personal Protection****Respiratory:**

None expected to be needed.  
 Mechanical ventilation is recommended.

**Hand:**

Rubber or latex gloves are recommended.

**Eye:**

Chemical goggles are recommended.

**Skin and Body:**

No special protection is expected to be needed.

**Other:**

Eye wash and safety showers are good safety practices.

**IX. Physical and Chemical Properties**

Appearance: Liquid.  
 Color: Straw Yellow.  
 Odor: Mild sweet odor.  
 Relative Density (H<sub>2</sub>O = 1): Not applicable.  
 Solubility in Water: 1.005.  
 pH (if in water, % Conc.): Not determined.  
 Boiling Point: 97 °C.  
 Vapor Pressure (mm Hg): Not determined.  
 Vapor Density (Air =1): <1.  
 Evaporation Rate  
 (Butyl acetate =1): 0.39.  
 Percent volatile by volume (%): ca. 90.  
 Flash Point: None to boiling.  
 Flammability Limits in Air  
 (% by volume): Not flammable.  
 Autoflammability: None.  
 Explosive Properties: None.  
 Oxidizing Properties: None.

**X. Stability and Reactivity****Stability:**

Stable

Unstable

**Conditions to Avoid:**

None known.

**Hazardous Reactions:**

Will not occur

May occur

**Conditions to Avoid:**

None known.

**Materials to Avoid:**

Reactive metals, electrically energized equipment, any material reactive with water.

**Hazardous Decomposition Products:**

Not known, oxides of nitrogen and sulfur may be found.

**ANSULITE ARC (Continued)****XI. Toxicological Information**

Product: The toxicity of the product mixture has not been determined.

Component: Diethylene glycol monobutyl ether:

Irritation Data:	Eye (rabbit) 20 mg/24 hrs	Moderate.
Toxicity Data:	Oral (rat) LD <sub>50</sub>	5660 mg/kg.
	Dermal (rabbit) LD <sub>50</sub>	2700 mg/kg.

Target organs: Kidney, lungs, gastrointestinal, spleen.

**XII. Ecological Information**

Mobility:	Not determined.
Absorption/Desorption:	Not determined.
Degradability:	Not determined.
Biotic and Abiotic Degradation:	Not determined.
Aerobic and Anaerobic Degradation:	Not determined.
Persistence:	Not determined.
Accumulation:	Not determined.
Bioaccumulation Potential:	Not determined.
Biomegnification:	Not determined.
Short and Long Term Effects on:	
Ecotoxicity:	Not determined.
Aquatic Organisms:	Not determined.
Soil Organisms:	Not determined.
Plants and Terrestrial animals:	Not determined.
Other Adverse Effects:	Not determined.
Ozone Depletion Potential:	Not determined.
Photochemical Ozone Creation Potential:	Not determined.
Global Warming Potential:	Not determined.
Effects on Waste Water Treatment Plants:	Not determined.

**XIII. Disposal Considerations**

Dispose of in Compliance with local, state, and national regulations.

**XIV. Transport Information**

Hazard Class or Division: Not hazardous.

For additional transport information, contact Ansul Incorporated.

**ANSULITE ARC (Continued)**

**XV. Regulatory Information**

**Product:**  
 EU Classification: Xi  
 R Phrases: 36  
 S Phrases: 26  
 36  
 Irritant.  
 Irritating to eyes.  
 In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.  
 Wear suitable protective clothing.

**Components:**  
 Diethylene Glycol Monobutyl Ether:  
 EU Classification: Xi  
 R Phrases: 36  
 S Phrases: 26  
 36  
 Irritant.  
 In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.  
 Wear suitable protective clothing.

**Limit Value for Exposure:**  
 Diethylene Glycol Monobutyl Ether:  
 ACGIH TLV-TWA 600 ppm  
 OSHA PEL (General Industry) 600 ppm (2050 mg/m<sup>3</sup>)

**EINECS Status:** All components are included in EINECS inventories.  
**Restrictions on Marketing and Use:** None  
 Refer to any other national measures that may be relevant.

**XVI. Other Information**

None known.

**XVII. Disclaimer**

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ANSUL SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

MSDS available at <http://www.ansul.com>

ANSUL is a trademark of Ansul Incorporated or its affiliates.

## NATURE OF DISCHARGE REPORT

### *Aqueous Film Forming Foam (AFFF)*

#### 1.0 INTRODUCTION

The National Defense Authorization Act of 1996 amended Section 312 of the Federal Water Pollution Control Act (also known as the Clean Water Act (CWA)) to require that the Secretary of Defense and the Administrator of the Environmental Protection Agency (EPA) develop uniform national discharge standards (UNDS) for vessels of the Armed Forces for "...discharges, other than sewage, incidental to normal operation of a vessel of the Armed Forces, ..." [Section 312(n)(1)]. UNDS is being developed in three phases. The first phase (which this report supports), will determine which discharges will be required to be controlled by marine pollution control devices (MPCDs)—either equipment or management practices. The second phase will develop MPCD performance standards. The final phase will determine the design, construction, installation, and use of MPCDs.

A nature of discharge (NOD) report has been prepared for each of the discharges that has been identified as a candidate for regulation under UNDS. The NOD reports were developed based on information obtained from the technical community within the Navy and other branches of the Armed Forces with vessels potentially subject to UNDS, from information available in existing technical reports and documentation, and, when required, from data obtained from discharge samples that were collected under the UNDS program.

The purpose of the NOD report is to describe the discharge in detail, including the system that produces the discharge, the equipment involved, the constituents released to the environment, and the current practice, if any, to prevent or minimize environmental effects. Where existing process information is insufficient to characterize the discharge, the NOD report provides the results of additional sampling or other data gathered on the discharge. Based on the above information, the NOD report describes how the estimated constituent concentrations and mass loading to the environment were determined. Finally, the NOD report assesses the potential for environmental effect. The NOD report contains sections on: Discharge Description, Discharge Characteristics, Nature of Discharge Analysis, Conclusions, and Data Sources and References.

## **2.0 DISCHARGE DESCRIPTION**

This section describes the AFFF and includes information on: the equipment that is used and its operation (Section 2.1), general description of the constituents of the discharge (Section 2.2), and the vessels that produce this discharge (Section 2.3).

### **2.1 Equipment Description and Operation**

AFFF is the primary firefighting agent used aboard U.S. Coast Guard (USCG) and Navy vessels for flammable liquid fires. A different class of agents, Fluoroprotein foams, are used for the same purpose on vessels in the Military Sealift Command (MSC). Aqueous Film Forming Foam (AFFF) is a particular type of synthetic firefighting foam whose performance is governed by military specification. Fluoroprotein foam is a protein-based material to which fluorinated surfactants have been added to improve fluidity and surface tension properties, while reducing the tendency of the protein base to absorb liquids.

These foams control and extinguish flammable liquid fires and help prevent such fires after spills by spreading a vapor-sealing film over the flammable liquid. The foam layer effectively excludes oxygen from the surface of the fuel, while the high water content cools the surface. The foam layer also provides a reservoir that will reseal a disturbed fuel surface and inhibit reignition. Both foams have excellent "wetting" or penetrating characteristics can be used against fires involving densely packed wood, wood products, cloth, textile and fibrous materials, paper, and paper products. Both types of foam concentrates can be stored for indefinite periods in approved equipment and systems with no degradation in chemical properties or capabilities.

In use, foam concentrate is mixed with seawater to form a dilute seawater foam solution. Seawater foam solution is generated in foam proportioning stations or by portable proportioners.<sup>1</sup> Each type involves metering foam concentrate into pressurized, firefighting seawater. The metering accuracy of the proportioning stations is verified by periodic tests.

Foam is applied both manually, with conventional foam or water/fog equipment such as fire hoses equipped with foam nozzles, and from fixed sprinkler devices. Fixed systems provide seawater foam solution to sprinklers on flight decks, and to overhead sprinklers in hangars, tank decks, well decks, weapon elevator pits, fueled vehicle decks or holds, refueling stations, and fuel pump rooms. If a protected area requires a greater flow rate than can be supplied by a single proportioning station, the area is subdivided into zones or groups, each independently supplied from a single proportioning station. Bilge sprinkler systems are installed in machinery spaces and pump rooms. Firefighting hose reel stations are supplied through a system of proportioners, pumps, and permanently installed piping.

Foam concentrate is stored in tanks, 55-gallon drums, and 5-gallon cans. Aircraft carriers, large amphibious ships, and other large ships can carry more than 20,000 gallons of AFFF or fluoroprotein foam concentrate.

Neither AFFF nor fluoroprotein foam is ever discharged from vessels in concentrated

form. Only the dilute seawater foam solution is discharged. Incidental discharge of seawater foam solution occurs during maintenance that is part of the Planned Maintenance System (PMS), Board of Inspection and Survey (INSURV) underway material inspections (UMI), flight deck certifications, or biennial tests on MSC vessels by the USCG Office of Marine Inspection.

Regular preventive maintenance of firefighting systems and equipment requiring the discharge of seawater foam solution aboard ship occurs annually during PMS activities, although some maintenance is performed at 18 month intervals. Table 1 indicates the frequency of foam solution discharges on Navy, MSC, and USCG vessels. For Navy vessels, an INSURV UMI occurs every 3 years and involves the same system checks and resulting seawater foam discharges as the annual PMS activities. An MSC damage control instruction requires that foam solution be present at flight deck nozzles before every flight operation (approximately twice per month per vessel), which is verified by operating the nozzles until foam is sighted.<sup>2</sup> For aircraft carriers, Navy requirements call for a flight deck certification during the first deployment to sea after a shipyard or repair period (approximately every 1.5 years). Other than aircraft carriers, ships with flight decks, whether Navy or MSC, receive flight deck certification inspections every 3 years that test for foam solution at all flight deck nozzles and hoses.

## **2.2 Releases to the Environment**

The seawater foam solutions that are discharged onto flight and weather decks as a result of maintenance, inspection, and certification activities are washed overboard with pressurized seawater from fire hoses, or by activating the seawater washdown system. Foam that is discharged into internal ship compartment bilges during system testing and flushing evolutions is pumped overboard by eductors.

Seawater foam discharge will contain all the constituents from the firemain, in addition to constituents unique to the foam concentrate. As discussed more fully in the Firemain Systems NOD Report, the principal constituent of the firemain discharge that could have an adverse water quality effect is copper, derived from the copper nickel firemain piping. Therefore, copper will be an expected component of the AFFF solution discharge.

## **2.3 Vessels Producing the Discharge**

All Navy surface ships, all classes of USCG cutters, icebreakers and icebreaking tugs, and MSC ship classes with the ability to support helicopter operations produce the discharge. Table 2 shows the vessel classes that produce the discharge.

## **3.0 DISCHARGE CHARACTERISTICS**

This section contains qualitative and quantitative information that characterizes the discharge. Section 3.1 describes where the discharge occurs with respect to harbors and near-shore areas, Section 3.2 describes the rate of the discharge, Section 3.3 lists the constituents in the discharge, and Section 3.4 gives the concentrations of the constituents in the discharge.

### 3.1 Locality

The Navy provides instruction on where seawater AFFF solutions can be discharged during maintenance that tests the proportioning accuracy of AFFF proportioning stations. This test is commonly conducted by discharging an AFFF hose over the side, when beyond the 12 nautical mile (n.m.) limit. The PMS instructions state:

“Accomplish maintenance requirements only when ship is beyond 12 nautical miles of shore and preferably while underway. When within 3 nautical miles of shore or in port, discharge to a tank, barge or to an authorized truck. In other cases, when between 3 and 12 nautical miles, overboard discharge is permitted with a minimum (ship) speed of 10 knots.”<sup>3-9</sup>

Discharges that are part of inspections and certifications are not governed by the maintenance instruction, and can be discharged anywhere, except that seawater foam solution in a machinery space bilge is governed by bilge pumping rules, and cannot be discharged within 12 n.m.<sup>10</sup> In practice, the maintenance policy applies because a single discharge event will be scheduled to satisfy simultaneously the requirements for maintenance, inspection, and certification.

### 3.2 Rate

When testing the proportioning accuracy of proportioning stations, ships typically test one station at a time by discharging a foam hose over the side. This discharge rate is 125 gallons per minute (gpm) or 250 gpm, depending on the flow rate of the hose selected for the test. When testing or demonstrating flight deck sprinkling, the most common practice is to operate one or two zones at a time, continuing until all the zones have been tested. The nominal flow rate for each zone on Navy ships is 1,000 gpm, so the typical discharge rate is 2,000 gpm.

AFFF concentrate is mixed with seawater from the firemain to form a 6% dilute solution, that is, 100 gallons of solution contains 6 gallons of AFFF concentrate and 94 gallons of seawater.<sup>1</sup> The WTGB 140 Class of icebreaking tugs operated by the USCG use more concentrated base stock which is diluted to a 3% solution. Fluoroprotein foams are mixed on MSC ships in both 3% and 6% solutions, depending on the design of the installed proportioning equipment.<sup>11</sup> These mixing ratios are used in Table 2 to derive discharge quantities of foam concentrate and seawater.

After tests or demonstrations of flight deck sprinkling, the foam blanket is washed off using fire hoses, or by operating the fixed seawater washdown system. Both techniques result in a seawater discharge supplied from the firemain. The flow rate is variable, but a typical range is 250 gpm (two fire hoses on a ship with a helicopter landing platform) to 2,000 gpm (two flight deck zones on an aircraft carrier).

Tests or demonstrations of bilge sprinkling do not result in environmental discharges until

bilges are pumped overboard. Bilges can be pumped within 12 n.m. of shore if the discharge is passed through oil water separators. However, the surfactants in AFFF and fluoroprotein foam render the oil water separators ineffective, so crews do not discharge seawater foam solution through their oil water separators. Accordingly, bilges containing seawater foam solution are pumped only beyond 12 n.m. from shore<sup>10</sup>. Therefore, this NOD report does not account for foam discharges attributable to bilge sprinkling, discharge of machinery space bilge hoses, nor the seawater used to wash and pump bilges.

By ship class, Table 2 shows the discharges of seawater foam solution, foam concentrate in the solution, seawater in the solution, and seawater used to wash the solution off the ship. All discharges are assumed to occur within 12 n.m. of shore. The fleetwide estimates are summarized in Table 3.

### 3.3 Constituents

The ingredients in foam concentrate are listed on material safety data sheets (MSDSs) prepared by the manufacturer. The AFFF concentrate produced by the principal Armed Forces supplier contains water, 2-(2-butoxyethoxy)-ethanol, urea, alkyl sulfate salts (2 in number), amphoteric fluoroalkylamide derivative, perfluoroalkyl sulfonate salts (5), triethanolamine, and methyl-1H-benzotriazole, with fresh water accounting for approximately 80% of the ingredients by weight (see Table 3).<sup>12</sup> Freshwater is the principal ingredient of all the foam concentrates used by the Armed Forces, comprising approximately 80% - 90% of the product by weight.<sup>12-16</sup> The protein base in fluoroprotein foam is nontoxic and biodegradable. The chemical identities and corresponding weight percents of the surfactants in AFFF and fluoroprotein concentrates are proprietary, but are stated by the manufacturers to be nontoxic in the quantities present in the manufactured product, and more benign when diluted with seawater to a 3% or 6% solution. Fluoroprotein foam and 3% AFFF used on MSC and USCG vessels contribute only 4% of the total volume of foam discharged annually from vessels.

No priority pollutants nor bioaccumulators are known to be present in the AFFF product or fluoroprotein foam concentrates used aboard vessels of the Armed Forces.

The firemain provides the seawater in the seawater foam solution. Metals and other materials from the firemain system can be dissolved by the seawater, and particles can be eroded and physically entrained in the seawater flow. Any wetted material in the firemain system can become a constituent of the firemain discharge. None of the potential constituents are known bioaccumulators. The priority pollutants in the discharge are bis(2-ethylhexyl) phthalate, copper, nickel, and iron, which are found in the piping of wet firemain systems.

The piping in Navy AFFF systems is made of copper nickel alloy, the same as used in the firemain system. Total nitrogen, bis(2-ethylhexyl) phthalate, copper, nickel, and iron from this source will be constituents of the discharge.

### **3.4 Concentrations**

Table 3 shows the concentrations of the chemical constituents in AFFF concentrate. The data are based on the type of concentrate that is most widely used. Table 3 also shows the concentrations in the seawater foam solution.

Seawater foam discharges have not been part of the sampling program. The concentrations of total nitrogen, bis(2-ethylhexyl) phthalate, copper, nickel, and iron contributed from the AFFF system are not known. AFFF concentrate includes corrosion inhibitors.

## **4.0 NATURE OF DISCHARGE ANALYSIS**

Based on the discharge characteristics presented in Section 3.0, the nature of the discharge and its potential impact on the environment can be evaluated. The estimated mass loadings are presented in Section 4.1. In Section 4.2, the concentrations of constituents in the discharge are estimated and compared with the water quality criteria. In Section 4.3, the potential for the transfer of non-indigenous species is discussed.

### **4.1 Mass Loadings**

Discharge quantities in Table 2 and constituent concentrations in Table 3 are combined to estimate mass loadings.

Based on the approximate mass of 366,000 pounds of AFFF concentrate discharged annually from Navy and USCG vessels, and the weight percentages of AFFF constituents, upper bound estimates of the annual mass loadings for the constituents range from a maximum of approximately 38,500 pounds for 2-(2-butoxyethoxy)-ethanol to a minimum of 370 pounds for methyl-1H-benzotriazole. The mass loadings resulting from 3% AFFF and fluoroprotein foam discharges aboard MSC vessels do not significantly change the calculated loadings because the total volume of these concentrates represents 4.0% of the foam discharged annually.

The annual mass loadings of copper, nickel, and iron from the firemain system are shown in Table 3, based on a total of 4,924,000 gallons of seawater used to produce foam and wash it off the ship after the test.

### **4.2 Environmental Concentrations**

As listed in Table 2, individual constituent concentrations in foam range from 6,400 mg/L for 2-(2-butoxyethoxy)-ethanol down to about 61 mg/L for methyl-1H-benzotriazole. The concentrations presented represent AFFF seawater foam constituent concentrations in the product as discharged from hose nozzles and sprinkler heads aboard ship. These concentrations do not take into account the additional diluting effect of any seawater used to wash the AFFF seawater solution overboard. Thus, the concentration of the constituents in AFFF seawater solutions is reduced when this additional dilution factor is considered. Further, the ship's motion through the

sea causes the discharge to be distributed along the ship's track, instead of being discharged in a single spot. Upon discharge to the environment, AFFF concentrate has been diluted 94:6 (about 16:1) by the proportioning process, with further dilution during the wash-off procedure, followed by rapid dispersion in the wake of a moving ship.

AFFF could potentially be discharged from vessels in amounts that cause visible foam floating on the water surface. Floating foam detracts from the appearance of surface waters and can violate aesthetic water quality criteria. Several states have standards to prevent "floating debris and scum."

The bis(2-ethylhexyl) phthalate, copper, nickel, and iron constituents are the only priority pollutants sampled which exceed acute water quality criteria. Table 4 shows the concentration of the constituents of firemain water, total nitrogen, bis(2-ethylhexyl) phthalate, copper, nickel, and iron, that exceed acute water quality criteria. The copper concentration exceeds both the Federal and most stringent state criteria while the total nitrogen, bis(2-ethylhexyl) phthalate, nickel, and iron concentrations exceed only the most stringent state criterion.

#### **4.3 Potential for Introducing Non-Indigenous Species**

AFFF and fluoroprotein concentrates do not include biota. Seawater foam discharge can include microbial and invertebrate marine organisms, since biofouling accumulates in firemain systems, wet and dry types. See the Firemain Systems NOD Report for a discussion of the potential for introducing non-indigenous species in the firemain discharge.

### **5.0 CONCLUSION**

AFFF discharges from vessels of the Armed Forces have the potential to cause an adverse environmental impact. There is currently an operational policy and procedure that prohibits any overboard discharge of AFFF from Navy vessels within 3 n.m. of shore, and stipulates that discharge could only occur at a minimum speed of 10 knots between 3 and 12 n.m. from shore. If this policy were not in place, the discharge could deposit significant amounts of foam on surface water. This foam would diminish the visual quality of the water.

### **6.0 DATA SOURCES AND REFERENCES**

To characterize this discharge, information from various sources was obtained. Process information was used to estimate the volume of discharge. Based on this estimate and on the reported constituent percentages by weight, the concentrations of the AFFF constituents in this discharge were then estimated. Table 5 shows the sources of the data used to develop this NOD report.

## Specific References

1. Naval Ships' Technical Manual (NSTM), Chapter 555, Vol. 1, Revision 4, pages 1-23, 2-6, 2-7, 4-22, and 4-23, Surface Ship Firefighting. 8 December 1997.
2. Military Sealift Command (MSC), Damage Control Manual, COMSCINST 3541.5D, 21 February 1994, page 1-10-2.
3. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/026-C5, Fire Extinguishing System, Fog, Foam, and AFFF, December 1995.
4. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/027-C6, Fire Extinguishing System, Fog, Foam, and AFFF, December 1996.
5. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/029-86, Fire Extinguishing System, Fog, Foam, and AFFF, August 1996.
6. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/031-C5, Fire Extinguishing System, Fog, Foam, and AFFF, December 1995.
7. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/034-A4, Fire Extinguishing System, Fog, Foam, and AFFF, October 1994.
8. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/036-A4, Fire Extinguishing System, Fog, Foam, and AFFF, October 1994.
9. Naval Sea Systems Command (NAVSEA), Navy PMS Maintenance Index Page (MIP) 5551/037-37, Fire Extinguishing System, Fog, Foam, and AFFF, March 1997.
10. Office of Chief of Naval Operations (OPNAV), Environmental and Natural Resource Program Manual, OPNAVINST 5090.1B, 1 November 1994.
11. Weersing, Penny, Military Sealift Command Central Technical Activity. Design of Fire Protection Systems on MSC Ships, 26 March 1997, David Eaton, M. Rosenblatt & Son, Inc.
12. 3M Material Safety Data Sheet, FC-206CF LIGHT WATER™ Brand Aqueous Film Forming Foam, November 13, 1995.
13. Ansul Inc. Material Safety Data Sheet, Ansulite 6% AFFF (AFC-5), May 19, 1995.
14. Chubb National Foam Inc. Material Safety Data Sheet, Aer-0-Water 6EM, March 27, 1991.
15. National Foam Inc. Material Safety Data Sheet, Aer-0-Foam XL-3 3%, October 2, 1996.
16. Ansul Inc. Material Safety Data Sheet, Ansul 3% Fluoroprotein Foam Concentrate, June

2, 1997.

17. Poidinger, Joe, 3-M Corp. MSDS 6% AFFF Concentrate Density, 18 September 1997, Anil Giri, M. Rosenblatt & Son, Inc.

### **General References**

USEPA. Toxics Criteria for Those States Not Complying with Clean Water Act Section 303(c)(2)(B). 40 CFR Part 131.36.

USEPA. Interim Final Rule. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance – Revision of Metals Criteria. 60 FR 22230. May 4, 1995.

USEPA. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants. 57 FR 60848. December 22, 1992.

USEPA. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, Proposed Rule under 40 CFR Part 131, Federal Register, Vol. 62, Number 150. August 5, 1997.

Connecticut. Department of Environmental Protection. Water Quality Standards. Surface Water Quality Standards Effective April 8, 1997.

Florida. Department of Environmental Protection. Surface Water Quality Standards, Chapter 62-302. Effective December 26, 1996.

Georgia Final Regulations. Chapter 391-3-6, Water Quality Control, as provided by The Bureau of National Affairs, Inc., 1996.

Hawaii. Hawaiian Water Quality Standards. Section 11, Chapter 54 of the State Code.

Mississippi. Water Quality Criteria for Intrastate, Interstate and Coastal Waters. Mississippi Department of Environmental Quality, Office of Pollution Control. Adopted November 16, 1995.

New Jersey Final Regulations. Surface Water Quality Standards, Section 7:9B-1, as provided by The Bureau of National Affairs, Inc., 1996.

Texas. Texas Surface Water Quality Standards, Sections 307.2 - 307.10. Texas Natural Resource Conservation Commission. Effective July 13, 1995.

Virginia. Water Quality Standards. Chapter 260, Virginia Administrative Code (VAC) , 9 VAC 25-260.

# Fire Training Area

1338

O'Connor Way

For: Chris, Susan,  
~~John~~...

Please review for  
any environmental  
concerns and get  
back to Tim w/a  
yes or no. Be sure  
to copy Chris w/in -  
Thank X, Jody

Mark & I think this  
is the location where  
the training is proposed.  
Mark is awaiting word  
back from Tim.  
(It's OK as far as sensitive  
plants / native trees / sens.  
animals or cultural &  
wetlands)

no storm drain † ?AFFF  
when: before line  
where - on concrete → not on soil. sales mgr. EPCRA reporting.  
done in past no  
suppress foam  
Actual?  
Burning?

Air ~ - Burn Plan / Permit

Tim Harness - CDF 458-9576

Jody:

I recommend capturing the runoff as if it is contaminated with fuel for training purposes; then discharge to WWTP (not surface waters). Consult w/ WWTP operators first.

John

# AIR POLLUTION CONTROL DISTRICT

COUNTY OF SAN LUIS OBISPO

2156 SIERRA WAY, SUITE B - SAN LUIS OBISPO, CALIFORNIA 93401 - (805) 549-5912



June 28, 1989

John C. Gibson, Director of Training  
California Division of Forestry  
635 North Santa Rosa Street  
San Luis Obispo, California 93401

SUBJECT: Training Burns at Waste and Brush Pile, Camp San Luis Obispo

Dear Mr. Gibson:

Periodically, your office has supervised training burns at a waste collection site behind the Cuesta College campus, near the Cal Trans yard. Such training burns are specifically permitted in the Air Pollution Control District's Rules and Regulations, and the importance of regular fire suppression training for firefighters is obvious. This letter is in no way intended to discourage training burns per se, but I am concerned about the materials that have been burned at this site in particular.

APCD staff typically perform pre-burn inspections of the fuel materials scheduled for training burns. At the Camp San Luis Obispo site, these inspections have identified a recurring pattern in the type of materials that seem to accumulate there. To cite examples from the latest training burn (April 28, 1989) prior to burning, the waste pile was found to contain tires, vinyl covered furniture, kitchen cabinets and utensils, plastic coated wire and large rolls of carpet. APCD Inspector Kristen Kent advised you that these materials could not be burned, and should be removed from the pile. The pile was large, however, and some inappropriate materials that were not readily visible were apparently not removed prior to burning. District staff noted that the remnants of some of these materials could be seen in the ashes, which were still smoldering five days later.

District Rule 501 and California Health and safety Code Section 41800 prohibit open burning for the disposal of demolition debris, wood wastes or trash. To the District, it appears that this site is a dump, commonly used by individuals and surrounding institutions. For these parties, the training burns your agency legitimately requests to hold on this site are primarily an easy means of waste disposal, by which the more responsible hauling of trash to a landfill is avoided.

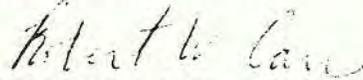
Please be advised that the District will deny future requests for training burns to dispose of mixed rubbish and combustible materials similar to that burned in the April 28 fire, both at this site and elsewhere in the county. Copies of this letter are being sent to key officials at each of the neighboring institutions, and to the County Health Department, to formally advise them of our intent. We recommend that the parties involved in current

page 2  
John Gibson, CDF  
June 28, 1989

use of the site not only severely restrict or eliminate dumping by their staff, but also take improved steps to restrict public access, to resolve that aspect of the dumping problem.

Please contact me if you have any questions about this policy, about what types of materials might be appropriate for training burns, or about our burn regulations in general.

Very truly yours,



ROBERT W. CARR, Director

RWC/PHA/kj

cc: Dean Choate, Director of Maintenance, Cuesta College  
✓ Major Machado, Engineering Officer, Camp San Luis Obispo  
Wayne Penticoff, In-Camp Supervisor, CCC SLO Center  
Tim Mazzacano, Director, Environmental Health, SLO County

## **Appendix B**

# **Preliminary Assessment Documentation**

## **Appendix B.1**

### **Interview Records**



**PRE-SITE VISIT SAFETY PROCEDURES QUESTIONNAIRE FOR ARNG INSTALLATIONS**

AECOM is requesting basic information specific to safety procedures for your facility prior to the start of site activities related to the PFAS Preliminary Assessment (PA) and possible future Site Inspection (SI). Information provided on this form will be used to incorporate site specific emergency and hazard control information into the Abbreviated Accident Prevention Plan used by AECOM personnel on this project.

NAME OF FACILITY: CSLO

1. Existing ARNG installation Emergency Route Map (if available attach to this form).
2. Name and telephone number(s) of facility emergency contacts:

CONTACT	PHONE NUMBER
<b>EMERGENCY</b> (Police, Fire, Ambulance Service)	911
Police (non-emergency)	(805) 781-7317
Fire Department (non-emergency)	(805) 543-4244
Emergency Medical Services (non-emergency)	(805) 543-2626
Primary Medical Facility - SIERRA VISTA REGIONAL	(805) 546-7606
Facility Point of Contact Name: CPT [REDACTED]	[REDACTED]
Alternate Facility Point of Contact Name: SSG [REDACTED]	
Other Emergency Contact(s)	
[REDACTED]	

3. Name and address of closest medical facility:

SIERRA VISTA REGIONAL MEDICAL CENTER  
1610 MURRAY AVENUE, SAN LUIS OBISPO, CA 93405

4. Emergency procedures.

- a. Procedure for alerting emergency response resources. CALL 911 FOR ALL EMERGENCIES. NOTIFY POST OPERATIONS AT (805) 594-6413 OF INCIDENT OR INJURY.

Safety Questionnaire

- b. Procedures for obtaining first aid. CALL 911 IN LIFE THREAT EMERGENCY. TRANSPORT BY CO-WORKER IF LOSS OF LIFE OR LIMB IS NOT A RISK FACTOR, AND TRANSPORT CAN BE CONDUCTED SAFELY, AND WITHOUT FURTHER INJURY TO PATIENT.
- c. Facility emergency evacuation signal. FIRE ALARM WITHIN BUILDINGS, SMOKE ALARM WITHIN BUILDINGS. LARGE SCALE EMERGENCIES WITHIN SLO COUNTY WILL ACTIVATE THE COUNTY EARLY WARNING SYSTEMS SIRENS. TV AND RADIO WILL PROVIDE INSTRUCTIONS.
- d. Safe place of refuge/assembly point for site evacuation. DESIGNATED EVACUATION POINT BASED OFF SPECIFIC BUILDING LOCATION, AND EVACUATION DIAGRAM WITHIN THAT BUILDING.

5. Will any of the following hazards be encountered by personnel accessing sampling locations at your facility?

- a. Working at heights  Yes  No
  - Exposed to a fall hazard over 4 feet  Yes  No  
(e.g. exposed edge of a walking/working surface with no guardrail)
  - Climbing a ladder or scaffold  Yes  No
- b. Slip, trips, falls  Yes  No
  - Walking on uneven terrain  Yes  No
  - Equipment, piping, etc. which are tripping hazards  Yes  No
- c. Falling objects  Yes  No
- d. Exposure of head to striking overhead objects  Yes  No  
(e.g. overhead beams, structural members, etc.)
- e. Confined spaces (e.g. pits, tanks, vaults, trenches, etc.)  Yes  No
- f. Over or near bodies of water  Yes  No
- g. Proximity to high voltage areas  Yes  No
- h. Motor vehicle/mechanized equipment traffic  Yes  No

6. For each of the questions in item #5 with a "yes" response, please describe the sampling location and the source or cause of the hazard as well as any applicable facility specific requirements for control of the hazard:

VARIOUS LOCATIONS THROUGHOUT CSLO CONTAIN UNEVEN TERRAIN, EXPOSED TRIPPING HAZARDS, AND MOTOR VEHICLE TRAFFIC. EACH POSSIBLE SAMPLING LOCATION MAY CONTAIN ONE OR MORE OF THESE HAZARDS.

**Safety Questionnaire**

---

7. Describe any other hazards and associated hazard controls that our personnel should be aware of prior to arriving at your site not addressed item #5 or item #6 above. Please indicate "N/A" if there are no such hazards.

N/A

---

---

---

---

---

---

[Redacted]

Print Name/Title

[Redacted]

Signature

[Redacted]

15 FEB 18

Date

[Redacted]

Telephone

## Preliminary Assessment – Pre-Interview Form

<b>1. Installation Name:</b> CSLO		
<b>2. Primary Points of Contact:(Name/Title/Telephone Number/Email Address):</b>		
ARNG:	[REDACTED]	
USACE:	[REDACTED]	
Installation:	[REDACTED]	
<b>3. Suggested Personnel to Interview (Name/Title/Number of Years at Installation/Retired):</b>		
<b>4. Is the ARNG property an enclave of a larger facility? What command or authority controls that facility? DoD or non-DoD? Does the facility have other DoD enclaves?</b>		
NO		
<b>5. Installation History (dates of operation, types of activity, active airfield, firefighting training):</b>		
1928 to PRESENT. TROOP TRAINING FACILITY INCLUDING SMALL ARMS RANGES, FORMER ACTIVE AIRSTRIP, CURRENT ACTIVE HELIPORT, HAZMAT TRAINING, AND FIREFIGHTER TRAINING.		
<b>6. Potential Sites to Investigate (hangars, airstrips, FTAs, TAs, paint shops and kitchen AFFF, plating areas):</b>		
<ul style="list-style-type: none"> <li>- O'SULLIVAN ARMY HELIPORT</li> <li>- CALFIRE CUESTA CAMP      - CSTI HAZMAT AREA</li> <li>- TRAINING BUZZ AREAS</li> </ul>		
<b>7. Have we requested the following information from ARNG?</b>		
Lease Information	YES / NO	Comment:
Material Purchase Information	YES / NO	Comment:
Permit/Transfer Documents	YES / NO	Comment:
Disposition Records for AFFF	YES / NO	Comment:

(Attach to the front of the Interview Form)

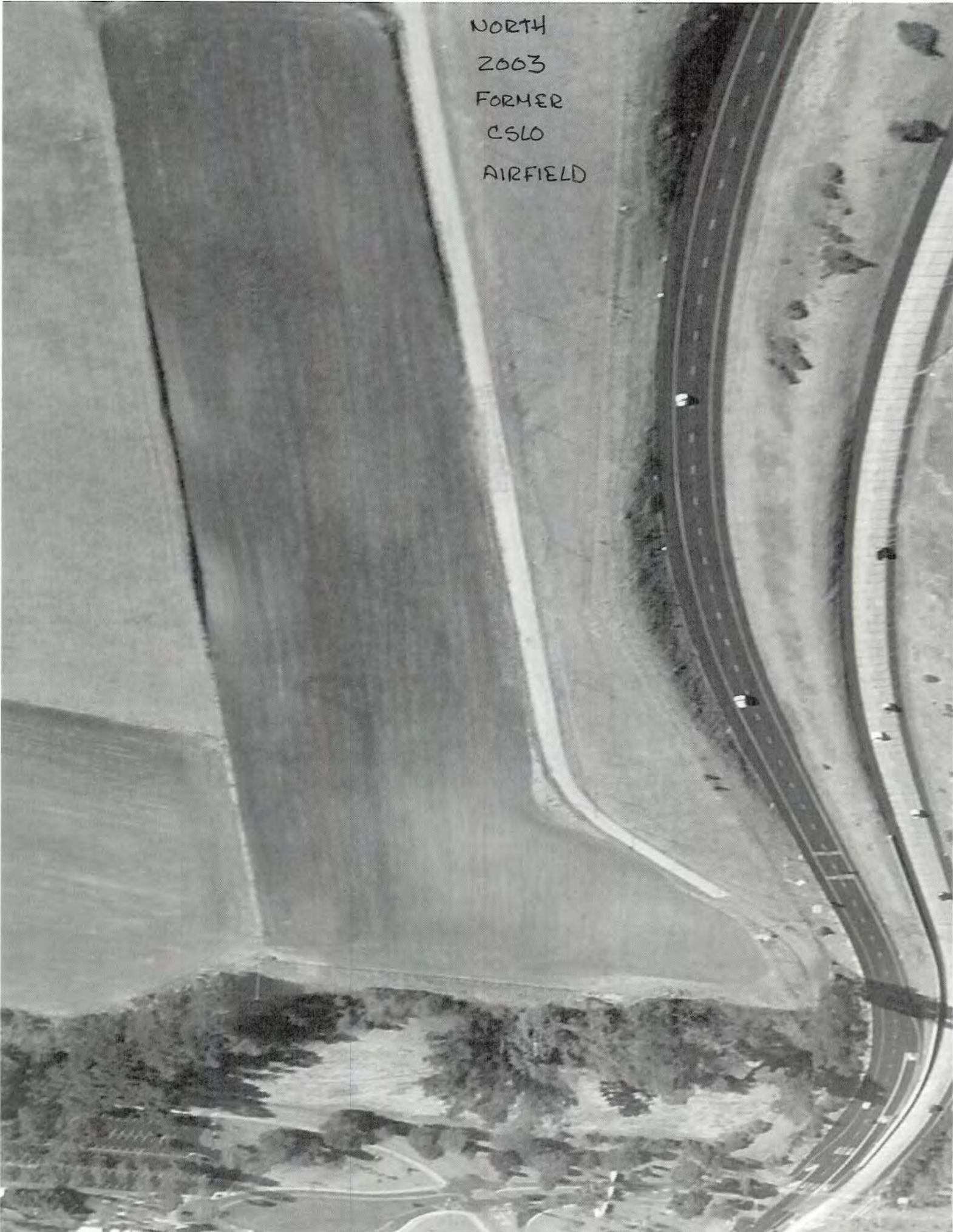
## GIS WISH LIST – ARNG PFAS Preliminary Assessment Project

- Aerial Photo layers (historic if avail)
- Topographic layers (historic if avail)
- Sanborn map layers
- Roads with labels
- Buildings with labels
- Lease/ownership-related boundaries with labels
- “Operational range”/“Non-operational range” or “Operational”/“Non-operational” area boundaries with labels
- Runways
- Surface Waterways (lakes, creeks, streams, ponds, etc.)
- Subsurface Waterways (culverts etc.)
- Wetlands and any other layers with potential sensitive receptors
- Storm sewer – with DI’s/cleanouts etc.
- Sanitary sewer - with DI’s/cleanouts etc.
- Water main/secondary water piping
- Fire suppression (water feed) pipes/systems
- GW Monitoring Wells/Extraction Wells/Municipal or Drinking Water Wells (on and offsite if available)
- Site-surrounding buildings/roads/infrastructure if available (immediately adjacent to/bordering site to a ¼-mile beyond property boundary)



NORTH  
1963  
CSLO  
AIRFIELD

NORTH  
2003  
FORMER  
CSLO  
AIRFIELD



April 9, 1972

Both Cal Poly and Cuesta College had active airfield runways at one time. I recall having a conversation with a pilot who said that the instructions for the Cal Poly runway said to beware of wandering livestock. Poly's runway was near the Aeronautical unit now the baseball field. The Camp San Luis Obispo airfield next to Cuesta College is still used by the National Guard for helicopters and is between the campus and the creek. A radio controlled airplane club used to have permission to use the runway in the mid -1980's but it was revoked when the consequences of a manned-unmanned collision were considered.

Tragedy struck the Cuesta Campus in 1972. Quoting from the April 10, 1972 story:

### **Air crash kills two on campus**

Two men were killed instantly Sunday about 4:20 p.m. when their single engine monoplane crashed on the new Cuesta College campus. Victims were the pilot Richard Race, 50, of Fresno and Michael A. Nolan, 49, of 1140 Montalban St. San Luis Obispo.

They reportedly had just returned from a National Guard meeting at Fort Irwin near Barstow. It was not definitely determined whether the plane was taking off or was attempting to land when it ran out of runway space.

The National Guard plane, based in Fresno, struck a frame building used as a warehouse at the end of the runway and sheared off the left wing. The craft then veered toward the creek. The right wing caught in a pepper tree and the fuselage landed in the creek upside down and caught fire.

Both bodies were burned.

The crash site is near the old National Guard gymnasium, still used as a gym by the college, and west of the college's new physical education building and tennis courts.

A team of Army and National Guard experts was due to begin an investigation today.

Lt. Col. Nolan was buried with full military honors at the San Luis Obispo Odd Fellows Cemetery as about 200 guardsmen paid tribute.

Photos were by Wayne Nicholls





# Navy plane crash, Anzio, World War II week by week

David Middlecamp - dmiddlecamp@thetribunenews.com

February 12, 2014 12:35 PM

Updated February 12, 2014 12:35 PM

## **Feb. 5, 1944**

One of three Navy bombers flying in formation crashed after diving above the hills at Camp San Luis Obispo. Members of the L.L. Hill family at 230 Hathway Ave. saw the plane fall and a trail of black smoke come up from the crash site. Official confirmation was not immediately available, but the story was verified by three eye witnesses.

One of the two men killed in the Navy dive bomber crash was identified as Lt. Cmdr. Harlan "Rocky" Dixon.

Quoting from the story: "Dixon, 29, one of the youngest lieutenant commanders in the Naval Air Forces, had received two Navy Crosses, one for blasting two carriers in the Coral Sea, and the second for locating the enemy carrier which sent planes to mortally wound the Yorktown in the battle of Midway and for directing planes to the enemy ship which subsequently was sunk. He also assisted in sinking three other Japanese vessels at Midway."

**SUGGESTED FOR YOU**



## **Appendix B.2**

# **Visual Site Inspection Checklists**

## Visual Site Inspection Checklist

**Names(s) of people performing VSI:** \_\_\_\_\_

**Recorded by:** \_\_\_\_\_

**ARNG Contact:** \_\_\_\_\_

**Date and Time:** 5/22/18

**Method of visit (walking, driving, adjacent):** DRIVE

**Source/Release Information**

**Site Name / Area Name / Unique ID:** CAL FIRE TRAINING AREAS (NEWER AREA, OLD FTA/PHILLIPS 66)

**Site / Area Acreage:** 4.5 ACRES 1.5 ACRES  
CALIFORNIA SPECIALIZED TRAINING INSTITUTE (CSTI) 1.9 ACRES

**Historic Site Use (Brief Description):** NEW - UNK HIST. USE

**Current Site Use (Brief Description):** OLD FTA - CAL FIRE FIRE TRAINING  
CSTI - UNK HIST USE; IN 1989 WAS OPEN (PLOWED) FIELD, BY 1994 STRUCTURES NOTED ON AERIALS

**Physical barriers or access restrictions:** BASE EMP. & CSTI & CAL FIRE EMP.

1. Was PFAS used (or spilled) at the site/area?

Y  N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

CAL FIRE OLD FTA , NEWER AREA , CSTI

2. Has usage been documented?

Y  N

2a. If yes, keep a record (place electronic files on a disk):

3. What types of businesses are located near the site?

Industrial  Commercial /  Plating /  Waterproofing /  Residential

3a. Indicate what businesses are located near the site

CMC WATER TREATMENT PLANT TO WEST/SOUTHWEST, O'SULLIVAN

4. Is this site located at an airport/flightline?

Y  N

4a. If yes, provide a description of the airport/flightline tenants:

FIELD TO NORTHWEST FOLLOWED BY WESTA COLLEGE

OLD FTA → ARNG LEASE TO PHILLIPS 66  
CSTI → ARNG LEASE TO CSTI

# Visual Survey Inspection Log

## Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

## Transport / Pathway Information

### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

CHORRO CREEK IS DIRECTLY ADJACENT/  
TO NORTH OF OLD FFA/PHILLIPS 66 FFA

3. Are monitoring or drinking water wells located near the site?

(3000' SW)  Y  N (1200' W)

3a. If so, please note the location:

WELL # 2 & WELL # 3 - BOTH  
UPGRADIENT

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location:

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location:

6b. Will off-site reconnaissance be conducted?

Y  N

# Visual Survey Inspection Log

## Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist):

CSTI CONSTRUCTED/OCCUPIED  
SPACE SOMETIME BETWEEN 1989 & 1992  
NEW CAL FIRE TA CONSTRUCTED/OCCUPIED

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition:

EACH OF THE 3 AREAS ARE W/ GRAVELLY SURFACES  
W/ SOME GRASSY AREAS

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

## Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational  
Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

WESTA COLLEGE  
≈ 1/3 MILE TO NW

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

LIKELY ASSOC. W/ MADRID CREEK

### Visual Survey Inspection Log

*Additional Notes* CSTI = HAZMAT TRAINING CENTER - USE DRY CHEMICALS - NO FOAM  
 RADIOLOGICAL & DO NOT TRAIN W/FOAM & (SIM-CSTI REP) HAS NOT SEEN PHILLIPS TRAIN W/FOAM EITHER

PHILLIPS 66 (FORMER OLD CAL FIRE FTA) TRAINS ONCE/YEAR - FIRE PIT NOTE/SPENT DRY CHEM. CONT. NOTED - JUST HAD FT YESTERDAY - DRY CHEM RESIDUE NOTED IN FIRE PIT; HISTORICALLY, AREA USED BY CAL FIRE BETWEEN MID 1990'S THROUGH 2010/2011. ABOUT (1) 5 GALLON BUCKET OF AFFF WAS USED PER TRAINING EVENT; EXPULSED FROM NOZZLE AT PROPS & UNDER BLOCK STRUCTURE (& IN BASEMENT); [REDACTED] SAID FORMERLY

*Photographic Log* MOSTLY WATER USED BUT AFFF ALSO USED

Photo ID/Name	Date & Location	Photograph Description
NO. 11	5/22/18	VIEW OF NEWER CAL FIRE FTA; TO NE
NO. 12	"	(PROPS) " " " " " ; TO NE
NO. 13	"	" ; TO SK/ ; COMMAND CENTER TRAILER
NO. 14	"	VIEW OF ENTRANCE @ OLD FTA/PHILLIPS 66 TA; TO NE
NO. 15	"	VIEW OF OLD FTA/PHILLIPS 66; PROPS & UNDER BLOCK STRUCTURE; TO NE
NO. 16	"	" OF FIRE PIT
NO. 17	"	" OF PROPS, TO NORTH
NO. 18	"	" INTERIOR OF UNDER BLOCK STRUCTURE W/ BASEMENT; SPENT FIRE EXTINGUISHERS (DRY CHEMICAL)
NO. 19	"	" INTERIOR OF STRUCTURE; GRATE, BASEMENT VISIBLE
NO. 20	"	VIEW OF BURNED STRUCTURE

# Visual Site Inspection Checklist

Names(s) of people performing VS

Recorded by

ARNG Contact:

Date and Time: 5/22/18

Method of visit (walking, driving, adjacent): DRIVE

## Source/Release Information

Site Name / Area Name / Unique ID:

WATER SUPPLY WELLS #1, #2, #3

Site / Area Acreage:

N/A

Historic Site Use (Brief Description):

HISTORICALLY POTABLE WELLS; 1940's

30-SOME FEET DEEP

Current Site Use (Brief Description):

WELLS USED FOR GAUGING PURPOSES ONLY - INACTIVE

& W/O PUMPING EQUIP

Physical barriers or access restrictions:

BASE STAFF - WELL HOUSE G WELL #3 LOCKED;

DID NOT SEE WELL-HEAD

1. Was PFAS used (or spilled) at the site/area?

Y  N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2. Has usage been documented?

Y  N

N/A

2a. If yes, keep a record (place electronic files on a disk):

3. What types of businesses are located near the site?

Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

ON-BASE

4. Is this site located at an airport/flightline?

Y  N

4a. If yes, provide a description of the airport/flightline tenants:

## Visual Survey Inspection Log

### Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N

N/A

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

### *Transport / Pathway Information*

#### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site?

Y  N

3a. If so, please note the location:

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y  N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition: THE WELLHEAD IS SITUATED IN AN OLD WOODEN STRUCTURE

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

### Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

### Visual Survey Inspection Log

*Additional Notes* "COUNTY" WELLS #1 & #2 - USED AS POTABLE IN THE 1940'S  
 COUNTY SAMPLES TWICE PER YEAR - SHALLOW 30-SOME FT BGS  
 WATER @ BASE IS CURRENTLY FROM WHALE ROCK VIA CHORRO RESERVOIR  
 PREVIOUSLY WATER WAS EXCLUSIVELY FROM CHORRO RESERVOIR  
 PIPED VIA CML

*Photographic Log*

Photo ID/Name	Date & Location	Photograph Description
#8	5/22/18	VIEW OF NEW HOUSE @ WELL #3

# Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_  
Recorded by: \_\_\_\_\_  
ARNG Contact: \_\_\_\_\_  
Date and Time: 5/22/18  
Method of visit (walking, driving, adjacent): DRIVE

## Source/Release Information

Site Name / Area Name / Unique ID: SUTTER AVE LANDFILL  
Site / Area Acreage: 5.2 ACRES  
Historic Site Use (Brief Description): 1970-1995 LANDFILL  
Current Site Use (Brief Description): CLOSED LANDFILL  
Physical barriers or access restrictions: BASE STAFF

1. Was PFAS used (or spilled) at the site/area?  Y  N  
1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014): \_\_\_\_\_
2. Has usage been documented?  Y  N N/A  
2a. If yes, keep a record (place electronic files on a disk): \_\_\_\_\_
3. What types of businesses are located near the site? Industrial / Commercial / Plating / Waterproofing / Residential  
3a. Indicate what businesses are located near the site  
WESTA COLLEGE ≈ 1/2 MILE TO NORTH OF LANDFILL
4. Is this site located at an airport/flightline?  Y  N  
4a. If yes, provide a description of the airport/flightline tenants: \_\_\_\_\_

# Visual Survey Inspection Log

## Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

## **Transport / Pathway Information**

### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

SURFACE WATER FLOWS TO HORRO CREEK ≈ 1,500' TO NORTH

3. Are monitoring or drinking water wells located near the site?

Y  N

3a. If so, please note the location:

COUNTY WELL # 2 LOCATED ≈ 1,000' NE (CROSS-GRADIENT) OF LANDFILL

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y  N

# Visual Survey Inspection Log

## Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist): PLANNING ON REPLACING LANDFILL CAP, BUT PROJECT HAS NOT BEGUN

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition: LANDFILL SURFACE RELATIVELY LEVEL, COVERED W/ GRASSES

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

## Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

WESTA COLLEGE

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

LIKELY AREAS ASSOCIATED W/ UTORO CREEK

## Visual Survey Inspection Log

*Additional Notes*

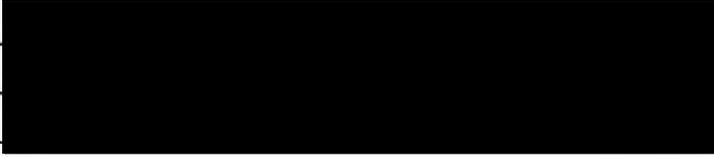
LANDFILL = MOSTLY CONSTRUCT. DEMOLITION DEBRIS, WOOD ETC.  
 ⇒ CLOSED; RWQCB & CAL-RECYCLE AUTHORITY  
 SEVERAL WELLS FOR VOC MONITORING & SOIL GAS ASSESSMENT → 1/2 OF WELLS  
 CLOSED, NO LONGER MONITORED  
 LESS THAN AT HALF CAPACITY WHEN CLOSED

*Photographic Log*      COLD CANYON LANDFILL NOW TAKES ALL CAMP SLO RUBBISH

Photo ID/Name	Date & Location	Photograph Description
# 9	0 5/22/18	VIEW OF LANDFILL, VIEW TO SOUTH
# 10	"	VIEW OF CALIFORNIA MENS COLONY WASTEWATER TREATMENT FACILITY

Visual Site Inspection Checklist

Names(s) of people performing VSI:



Recorded by:

ARNG Contact:

Date and Time: MAY 22, 2018

Method of visit (walking, driving, adjacent): DRIVE

Source/Release Information

Site Name / Area Name / Unique ID: FORMER U.S. ARMY AIR STRIP

Site / Area Acreage: UNK. EXACT - AIR PHOTO REVIEW = ~ 10<sup>5</sup> ACRES

Historic Site Use (Brief Description): 1940 - 1965 - USED AS AIR STRIP FOR PLANES DURING WWII

Current Site Use (Brief Description): PASTURE / OPEN AREA & REMOTE CONTROL AIRPLANE FLYING AREA

Physical barriers or access restrictions: AREA VIEWED FROM ROAD - GATE & ENTRY RESTRICTED - ACCESS VIA WALTER CREEK ROAD (ADJ. TO NORTH)

1. Was PFAS used (or spilled) at the site/area? Y/N VIA WALTER CREEK RANCH POLY-TECHNIC STATE UNIVERSITY ACCESS GATE  
1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2. Has usage been documented? Y/N  
2a. If yes, keep a record (place electronic files on a disk): N/A

3. What types of businesses are located near the site? Industrial / Commercial / Plating / Waterproofing / Residential  
3a. Indicate what businesses are located near the site WEST COLLEGE ~ 0.2 MILES TO EAST

4. Is this site located at an airport/flightline? Y/N  
4a. If yes, provide a description of the airport/flightline tenants: FORMER AIRFIELD ~ NO AIRFIELD (REMNANTS) REMAIN;  
CURRENTLY OPEN / GRASSY FIELD w/ COWS

# Visual Survey Inspection Log

## Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

## *Transport / Pathway Information*

### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

PENNINGTON CREEK DIRECTLY ADJACENT, TO EAST; TRIBUTARY TO CHORRO CREEK.

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

SURFACE WATER LIKELY FLOWS TO PENNINGTON CREEK; EAST

3. Are monitoring or drinking water wells located near the site?

Y  N

3a. If so, please note the location:

CLOSEST WELL IS "COUNTY" WELL TO EAST/SOUTHEAST 2 MILE (UPGRADIENT)

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y/N

N/A

# Visual Survey Inspection Log

## Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist): NO LONGER AIRFIELD  
AS OF 1965

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition:

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

(1) POND @ 0.25 MILES  
EAST OF FORMER AIRFIELD.  
USED BY COWS.

## Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent: GATE

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational  
 Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

## Visual Survey Inspection Log

*Additional Notes*

---

---

---

---

---

---

---

*Photographic Log*

Photo ID/Name	Date & Location	Photograph Description

## Visual Site Inspection Checklist

Names(s) of people performing VSI: [REDACTED]

Recorded by: [REDACTED]

ARNG Contact: [REDACTED]

Date and Time: MAY 22, 2018

Method of visit (walking, driving, adjacent): DRIVE

### Source/Release Information

Site Name / Area Name / Unique ID: D'SULLIVAN AIRFIELD - BUILDINGS 1004 & 1005 + SHED

Site / Area Acreage: UNK; AERIAL PHOTO REVIEW APP: <sup>(HISTORICAL)</sup> ~12 ACRES PLANE) ~ 1.6 ACRES

Historic Site Use (Brief Description): AIRFIELD 60'S - 70'S - FIXED WING (CURRENT HELI PAD TARMAC)

PARADE GROUNDS PRE-1960'S CURRENT HELICOPTERS

Current Site Use (Brief Description): HELICOPTER PAD/LANDING ONLY  
USED 10-20 TIMES/YEAR

Physical barriers or access restrictions: NO RESTRICTIONS NOTED

1. Was PFAS used (or spilled) at the site/area?  Y  N

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

NO AFFF USE REPORTED; AFFF STORED IN SHED

2. Has usage been documented?  Y  N

2a. If yes, keep a record (place electronic files on a disk): N/A - AFFF STORED IN SHED:

PURCHASED FROM STATE AVIATION OFFICE (SAO) \* FUNNEL FOR REFILLING  
CONTRACT TO MAINTAIN CANCELLED (2) TRI-MAX CRASH CARTS (FULL) (3) 5-GAL. PLASTIC BULKETS 2 THEM HAD AFFF 3% OBSERVED  
(1) 5-GAL PLASTIC BUCKET FIRE ADE 3% WATERING AGENT

3. What types of businesses are located near the site? Industrial / Commercial / Plating / Waterproofing / Residential

3a. Indicate what businesses are located near the site

WESTA COLLEGE - ~ 450 N OF HELI PAD TARMAC  
"ACHIEVEMENT HOUSE NPO" ~ 500' SW OF TARMAC

4. Is this site located at an airport/flightline?  Y  N

4a. If yes, provide a description of the airport/flightline tenants:

CAL ARNG - HELICOPTERS  
CIVIL AIR PATROL IS CURRENT TENANT  
BUILDING THEY USE IS #1005  
\* UNDER LEASE

# Visual Survey Inspection Log

## Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

## *Transport / Pathway Information*

### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

SURFACE WATER DRAINS TO  
MADRO WEFEX; LOCATED ~ 720' SOUTH OF CENTER OF HELIPAD

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

3. Are monitoring or drinking water wells located near the site?

Y  N

3a. If so, please note the location:

COUNTY WELL # 2 IS LOCATED AT 0.5 MILES  
SOUTHEAST; VPERADIENT

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y  N

## Visual Survey Inspection Log

### Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist): FIXED WING AIRFIELD TO HELICOPTER AFTER 1970'S

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition: HELIPAD TARMAC = CONC. AREA AROUND = SOIL/GRASSES

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

### Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent:

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

WESTA COLLEGE

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

## Visual Survey Inspection Log

*Additional Notes*

HELIPAD FUEL TANKS PUT IN, 2009 (RETROFIT) ORIGINAL TANKS 1980'S  
 INSTALLATION. 10,000 GALS GAS, 20,000 GALS JP-8 ⇒ USED FOR DUAL FUEL VEHICLES  
 NO AIRCRAFT FUELING @ SLD  
 AFFF STORED IN SHED ~ CONC. SLABS ON GRADE - SLAB IN GOOD/LIKE-NEW CONDITION  
 W/ EXPANSION JOINTS (NO VISIBLE CRACKING OBSERVED)  
 CARTS - ANNUAL VISUAL, 5-YEAR FULL HYDROSTATIC, 3 YEAR OPEN INSPECT. ⇒ OUTSIDE VENDOR

*Photographic Log*

Photo ID/Name	Date & Location	Photograph Description
#2	5/22/18	O'SULLIVAN AIRFIELD & STORAGE SHED
#3	↓	(3) 5 GAL CHEM GUARD 3% AFFF + FUNNEL
#4		(1) 5 GAL CHEM GUARD 3% AFFF
#5		(1) 5 GAL FIREADE AFFF 3%
#6	5/22/18	(2) TRI-MAX CRASH CARTS

WHEN AIR PATROL TRAINS @ O'SULL - HEMMET FUELING TANKER USED; LAST IN 2008-2009 W/ CARPETS

TRIMAX CARTS LIKELY NOT CERTIFIED; STICKER ON CART SAYS LAST CERTIFIED 6/2012; HYDROSTATIC

COMPANY STICKER = "SAFE GUARD FIRE PROTECTION"; REDDING, CA

CART MANUFACT. BY; "CRASH RESOLVE EQUIP. SERVICE, INC.", DALLAS, TX

AREAS IN VICINITY: TAGLIA LEASE (AGRICULTURAL) - LEASE CURRENTLY INACTIVE  
 OLD GYM  
 HOLISTER ADOBE

# Visual Site Inspection Checklist

Names(s) of people performing VSI: \_\_\_\_\_

Recorded by: \_\_\_\_\_

ARNG Contact: \_\_\_\_\_

Date and Time: 5/22/18

Method of visit (walking, driving, adjacent): DRIVE

## Source/Release Information

Site Name / Area Name / Unique ID: PLANE CRASH SITE

Site / Area Acreage: UNK.

Historic Site Use (Brief Description): CHOPPO CREEK ADJACENT TO O'SULLIVAN AIRFIELD

Current Site Use (Brief Description): HEAVILY VEGETATED CHOPPO CREEK

Physical barriers or access restrictions: BASE STAFF ONLY

1. Was PFAS used (or spilled) at the site/area?  Y  N UNK.

1a. If yes, document how PFAS was used and usage time (e.g., fire fighting training 2001 to 2014):

2. Has usage been documented?  Y  N UNK.

2a. If yes, keep a record (place electronic files on a disk):

3. What types of businesses are located near the site? Industrial  Commercial  Plating  Waterproofing  Residential

3a. Indicate what businesses are located near the site

4. Is this site located at an airport/flightline?  Y  N

4a. If yes, provide a description of the airport/flightline tenants:

CRASH OCCURRED SOUTHEAST CORNER OF O'SULLIVAN AIRFIELD  
USED BY ARNG & CIVIL AIR PATROL  
~ 500' FROM END OF FORMER RUNWAY  
TO CRASH SITE

# Visual Survey Inspection Log

## Other Significant Site Features:

1. Does the facility have a fire suppression system?

Y  N N/A

1a. If yes, indicate which type of AFFF has been used:

1b. If yes, describe maintenance schedule/leaks:

1c. If yes, how often is the AFFF replaced:

1d. If yes, does the facility have floor drains and where do they lead? Can we obtain an as built drawing?

## Transport / Pathway Information

### Migration Potential:

1. Does site/area drainage flow off installation?

Y  N

1a. If so, note observation and location:

MORRO CR. FLOWS EAST TO WEST → TO MORRO BAY

2. Is there channelized flow within the site/area?

Y  N

2a. If so, please note observation and location:

CREEK / CREEK BANKS CONTAIN.

3. Are monitoring or drinking water wells located near the site?

Y  N

3a. If so, please note the location:

COUNTY WELL # 2 IS LOCATED TO THE SOUTH ≈ 0.35 MILES / CROSS-ROAD.

4. Are surface water intakes located near the site?

Y  N

4a. If so, please note the location:

MORRO CREEK

5. Can wind dispersion information be obtained?

Y  N

5a. If so, please note and observe the location.

6. Does an adjacent non-ARNG PFAS source exist?

Y  N

6a. If so, please note the source and location.

6b. Will off-site reconnaissance be conducted?

Y  N

# Visual Survey Inspection Log

## Significant Topographical Features:

1. Has the infrastructure changed at the site/area?

Y  N

1a. If so, please describe change (ex. Structures no longer exist):

2. Is the site/area vegetated?

Y  N

2a. If not vegetated, briefly describe the site/area composition:

HEAVILY VEGETATED  
AREA W/IN CREEK AREA/BANKS ARE STEEP

3. Does the site or area exhibit evidence of erosion?

Y  N

3a. If yes, describe the location and extent of the erosion:

4. Does the site/area exhibit any areas of ponding or standing water?

Y  N

4a. If yes, describe the location and extent of the ponding:

UTDORO CREEK WAS OBSERVED TO BE W/ WATER/FLOW

## Receptor Information

1. Is access to the site restricted?

Y  N

1a. If so, please note to what extent:

BASE STAFF

2. Who can access the site?

Site Workers / Construction Workers / Trespassers / Residential / Recreational Users / Ecological

2a. Circle all that apply, note any not covered above:

3. Are residential areas located near the site?

Y  N

3a. If so, please note the location/distance:

4. Are any schools/day care centers located near the site?

Y  N

4a. If so, please note the location/distance/type:

WESTA COLLEGE

5. Are any wetlands located near the site?

Y  N

5a. If so, please note the location/distance/type:

UTDORO CREEK AREA LIKELY WETLAND

## Visual Survey Inspection Log

Additional Notes

PLANE = U.S. ARMY HAVILLAND BEAVER

PLANE CRASHED IN 1972

NOT KNOWN IF AFFF WAS USED

Photographic Log

Photo ID/Name	Date & Location	Photograph Description
# 7	5/22/18	VIEW TO NW TO AIRFIELD ACROSS
		CHORDS CREEK

## **Appendix B.3**

### **Conceptual Site Model Information**

## Preliminary Assessment – Conceptual Site Model Information

Site Name: *Camp San Luis Obispo, California*

---

### Why has this location been identified as a site?

*Interviews indicated that AFFF has been used for training historically at the site*

---

### Are there any other activities nearby that could also impact this location?

- No PFAS sources were identified in the area surrounding Camp SLO.*
- 

### Training Events

Have any training events with AFFF occurred at this site? *Annual training with AFFF occurred between 1995 and 2011*

---

If so, how often? *Annually between 1995 and 2011*

---

How much material was used? Is it documented? *1 five gallon bucket per training*

---

**Identify Potential Pathways:** Do we have enough information to fully understand over land surface water flow, groundwater flow, and geological formations on and around the facility? Any direct pathways to larger water bodies?

### Surface Water:

Surface water flow direction? *Surface waters drain a northeast-southwest direction*

---

Average rainfall? *23.12 inches annually on average*

---

Any flooding during rainy season? *Yes*

---

Direct or indirect pathway to ditches? *Yes*

---

Direct or indirect pathway to larger bodies of water? *Yes*

---

Does surface water pond any place on site? *Yes*

---

Any impoundment areas or retention ponds? *Yes*

---

Any NPDES location points near the site? *Unknown*

---

How does surface water drain on and around the flight line? *Generally to the Southwest.*

---

---

---

## Preliminary Assessment – Conceptual Site Model Information

### Groundwater:

Groundwater flow direction? *West*

---

Depth to groundwater? *Unknown*

---

Uses (agricultural, drinking water, irrigation)? *Drinking water, other uses unknown*

---

Any groundwater treatment systems? *Unknown*

---

Any groundwater monitoring well locations near the site? *Yes*

---

Is groundwater used for drinking water? *Yes*

---

Are there drinking water supply wells on installation? *No, but supply wells are located within 2 miles of the facility*

---

Do they serve off-post populations? *Unknown*

---

Are there off-post drinking water wells downgradient *Unknown*

---

---

---

### Waste Water Treatment Plant:

Has the installation ever had a WWTP, past or present? *Yes*

---

If so, do we understand the process and which water is/was treated at the plant? *Unknown*

---

Do we understand the fate of sludge waste? *Unknown*

---

Is surface water from potential contaminated sites treated? *Unknown*

---

---

---

### Equipment Rinse Water

1. Is firefighting equipment washed? Where does the rinse water go? *Unknown*

---

---

2. Are nozzles tested? How often are nozzles tested? Where are nozzles tested? Are nozzles cleaned after use? Where does the rinse water flow after cleaning nozzles? *Unknown*

---

---

---

3. Other?

---

---

---

## Preliminary Assessment – Conceptual Site Model Information

### Identify Potential Receptors:

Site Worker

---

Construction Worker

---

Recreational User

---

Residential

---

Child

---

Ecological

---

Note what is located near by the site (e.g. daycare, schools, hospitals, churches, agricultural, livestock)?

---

---

---

### Documentation

Ask for Engineering drawings (if applicable).

---

Has there been a reconstruction or changes to the drainage system? When did that occur? *Unknown*

---

---

---

---

## Appendix C Photographic Log

## APPENDIX C – Photographic Log

Army National Guard, Preliminary  
Assessment for PFAS

Camp San Luis Obispo

California

### Photograph No. 1

**Description:**

Former U.S. Army Airstrip.  
View to the Southwest



### Photograph No. 2

**Description:**

O'Sullivan Airfield. Shed  
situated in top left corner of  
photo is where containers  
containing AFFF were  
observed to be stored. View to  
the West.



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

<p><b>Photograph No. 3</b></p> <p>Description:</p>	
--	---

<p><b>Photograph No. 4</b></p> <p>Description:</p>	
--	--

## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

**Photograph No. 5**

**Description:**



**Photograph No. 6**

**Description:**



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

### Photograph No. 7

Description:



### Photograph No. 8

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

**Photograph No. 9**

**Description:**



**Photograph No. 10**

**Description:**



## APPENDIX C – Photographic Log

Army National Guard, Preliminary  
Assessment for PFAS

Camp San Luis Obispo

California

### Photograph No. 11

Description:



### Photograph No. 12

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary  
Assessment for PFAS

Camp San Luis Obispo

California

### Photograph No. 13

Description:



### Photograph No. 14

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary  
Assessment for PFAS

Camp San Luis Obispo

California

### Photograph No. 15

Description:



### Photograph No. 16

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

### Photograph No. 17

Description:



### Photograph No. 18

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary Assessment for PFAS	Camp San Luis Obispo	California
--	----------------------	------------

### Photograph No. 19

Description:



### Photograph No. 20

Description:



## APPENDIX C – Photographic Log

Army National Guard, Preliminary  
Assessment for PFAS

Camp San Luis Obispo

California

### Photograph No. 21

Description



### Photograph No. 22

Description:



## APPENDIX C – Photographic Log

<b>Army National Guard, Preliminary Assessment for PFAS</b>	<b>Camp San Luis Obispo</b>	<b>California</b>
---	-----------------------------	-------------------

<b>Photograph No. 23</b>	
<b>Description:</b>	

<b>Photograph No. 24</b>	
<b>Description:</b>	

