Report

Final Environmental Baseline Survey Hospital Hill and POL Hill

Prepared for

Department of the Army

U.S. Army Corps of Engineers

November 2001

CH2MHILL
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Contents

Section **Page**

Appendices

Tables

Figures

Acronyms and Abbreviations

AMEDD	Army Medical Department
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BCP	BRAC Cleanup Plan
BRAC	Base Realignment and Closure
Cal EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response and Contamination Liability Act List
CERFA	Community Environmental Response Facilitation Act
CSM	Coastal Salt Marsh
DoD	Department of Defense
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EBS	Environmental Baseline Survey
ERNS	Emergency Response Notification System
ESD	Explanation of Significant Differences
GSA	General Services Administration
HAAF	Hamilton Army Airfield
LUST	Leaking Underground Storage Tank
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned
NHP	New Hamilton Partners
NPL	National Priorities List
PCB	polychlorinated biphenyl
POL	Petroleum, Oil, and Lubricant
RCG	Residential Cleanup Goal

RCRA	Resource Conservation and Recovery Act
RCRIS-LQG	Resource Conservation and Recovery Information System—Large Quantity Generators
RCRIS-SQG	Resource Conservation and Recovery Information System—Small Quantity Generators
RCRIS-TSD	Resource Conservation and Recovery Information System—Treatment, Storage, and Disposal Facilities
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SCL	California Sites Database
SPL	Sites Priorities List
SS Line	Sanitary Sewer Line
SWLF	Solid Waste Landfills
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Prevention Plan
TPH	Total Petroleum Hydrocarbons
USACE	US Army Corps of Engineers
USAEC	U.S. Army Environmental Center
USAF	US Air Force
USC	United States Code
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tanks
VSI	Visual Site Inspection
WMUDS	Waste Management Unit Data System

Executive Summary

This Environmental Baseline Survey (EBS) has been prepared to document the physical condition of real property for Hospital Hill and Petroleum, Oil, and Lubricant (POL) Hill at Hamilton Army Airfield (HAAF), California resulting from the use, release, or disposal of hazardous substances and petroleum products (and petroleum derivatives) over the parcels' history, and establish a baseline for use by the Department of the Army in making decisions concerning real property transactions. The preparation of an EBS is required by Department of Defense (DoD) policy before any property can be leased, transferred, sold, or acquired. The EBS is primarily an environmental management benchmark document that will also be used by the Army in meeting obligations under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 United States Code Section 9620(h), [also referred to as CERCLA Section 120(h)] as amended by the Community Environmental Response Facilitation Act (CERFA) (Public Law 102-426).

Methodology

This EBS was developed based on information obtained through a series of records searches, staff interviews, and visual inspections conducted between September and December 2000. The records searches included a review of federal, state and local records to identify areas where use, release, or disposal of hazardous substances or any petroleum product or its derivatives has occurred. Also, the records search included a review of all reasonably obtainable federal, state and local government records for each adjacent facility where there has been a release of any hazardous substance or petroleum product that is likely to cause, or contribute to, contamination at HAAF. Agency records were accessed through the use of an electronic database provided by VISTA Information Solutions (VISTA). Visual inspections of the base property and facilities were conducted by a visual inspection team. Interviews of current and former key employees were also conducted. The EBS also includes an assessment of adjacent properties surrounding Hospital Hill and POL Hill that could pose environmental concern or affect the condition of the parcels from hazardous substances migrating onto the parcels. Visual inspections were conducted on properties immediately adjacent to the Hospital Hill and POL Hill fencelines and properties beyond the adjacent property parcels.

Findings

There are no documented releases of hazardous substances at Hospital Hill. Petroleum product storage, use and release were identified at Hospital Hill. Diesel fuel was stored in two underground storage tanks. Soil beneath the tanks was contaminated by total petroleum hydrocarbons (TPH). The tanks and TPH contaminated soil have been removed. Studies showed groundwater had not been adversely impacted. The California Regional Water Quality Control Board (RWQCB) has issued a closure letter for these tanks. Non-CERCLA issues including asbestos, lead-based paint, radionuclides and PCBs were identified at Hospital Hill. No CERCLA issues or releases were identified at Hospital Hill.

There are no documented releases of hazardous substances at POL Hill. Fifty-five gallon drums, labeled waste solvents and as containing PCBs were stored in Building 737. However, no leakage was reported and the drums have been removed. Petroleum product storage, use and release was identified at POL Hill. Jet fuel and automotive fuel were stored in numerous aboveground and underground storage tanks. Releases of TPH to soil and groundwater are documented. All of the tanks have been removed and soil with TPH concentration greater than 100 parts per million (ppm) has been remediated to the extent physically possible. Some soil and groundwater contamination remains beneath the former location of a large aboveground tank and its distribution line. Non-CERCLA issues including asbestos, lead based paint, and PCBs were identified at POL Hill. No CERCLA issues or releases were identified.

Property Categorization

Hospital Hill and POL Hill were designated as BRAC Parcels 1 and 2 respectively. Each parcel was categorized into one of the seven DoD categories, based on the results of the data available at the time this report was prepared. The category definitions are consistent with the 1995 BRAC Cleanup Plan Guidebook as amended in 1996. Property categorization factors are environmental conditions that, if present, may pose a threat to human health or the environment. These substances or conditions include, but are not limited to hazardous substances as defined in CERCLA Section 1201(14) and petroleum substances.

In addition to property categorization factors, this document also examines non-CERCLA disclosure factors that may influence the transfer of property for unrestricted use. These factors include asbestos, lead-based paints, polychlorinated biphenyls (PCBs), radon, ordnance, and radionuclides.

Hospital Hill and POL Hill are classified as shown in Table ES-1 below. Each parcel is presented with color-coded markings to show the results of the EBS property categorization in Figure ES-1.

TABLE ES-1
DoD Environmental Condition Categories for Hospital Hill and POL Hill
Environmental Baseline Survey, Hospital Hill and POL Hill

Category	Definition	BRAC Parcel
1	Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).	
2	Areas where only release or disposal of petroleum products has occurred.	1, 2
3	Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.	
4	Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.	
BRAC Parcels in the following DoD categories are not currently suitable for transfer:		
5	Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.	
6	Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.	
7	Areas that are not evaluated or require additional evaluation.	

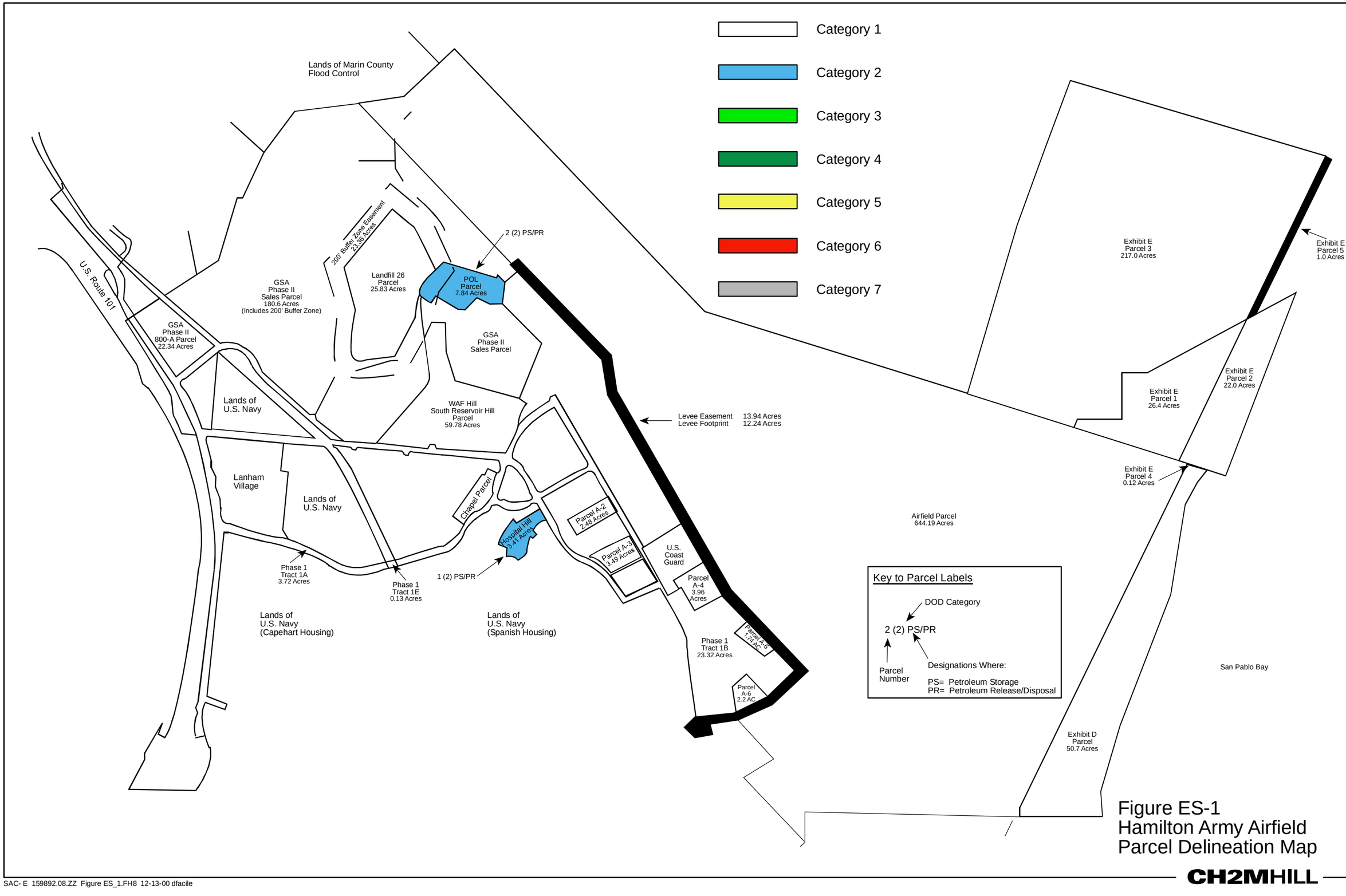

Figure ES-1
Hamilton Army Airfield
Parcel Delineation Map

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1.0 Introduction

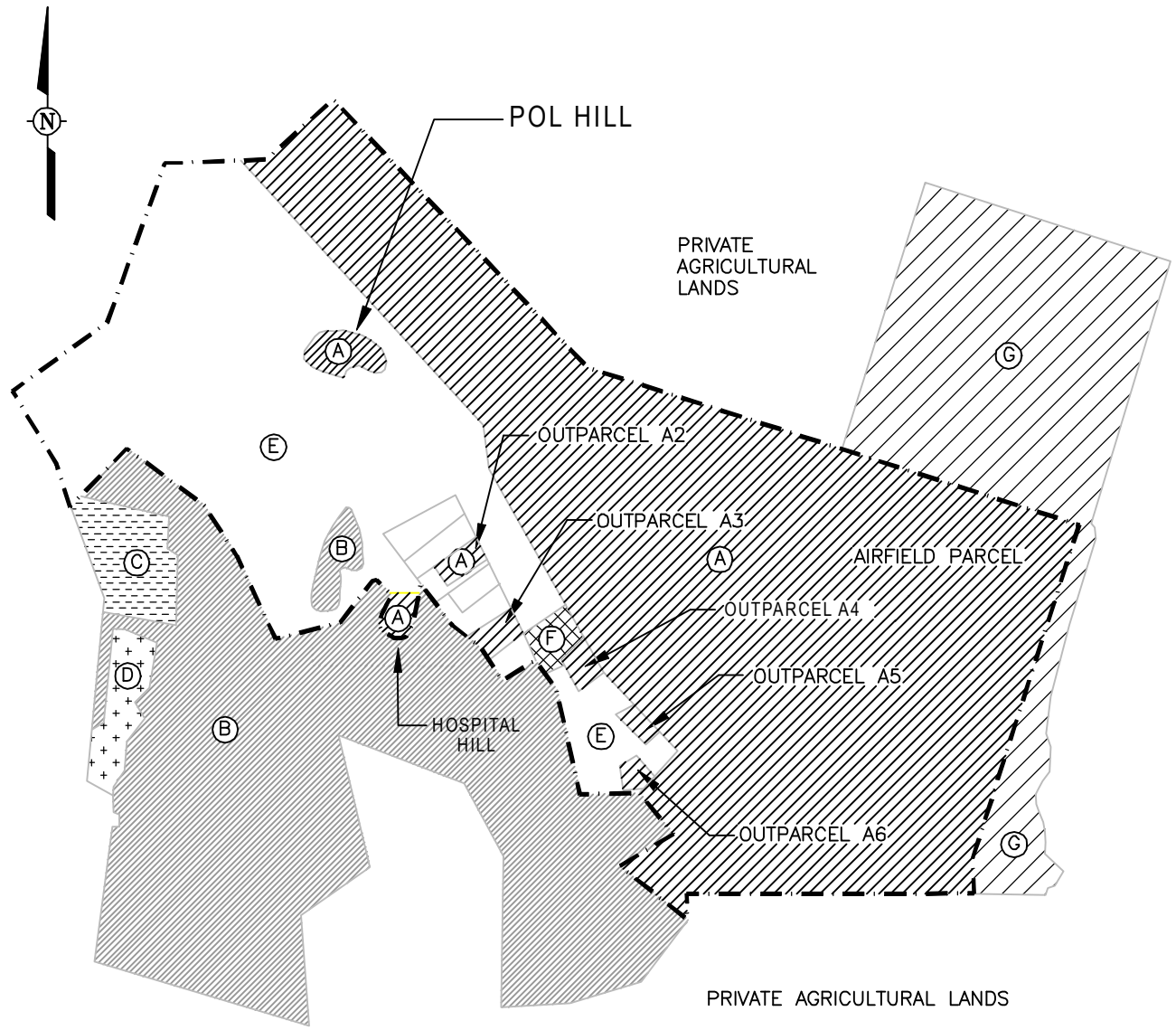
1.1 Background

This Environmental Baseline Survey (EBS) was prepared by CH2M HILL for the Department of the Army and under contract to the U.S. Army Corps of Engineers (USACE), contract number DACW05-99-0021, Delivery Order No. 8. This section describes the purpose and scope of the EBS report. Background information is provided below.

During the Base Realignment and Closure (BRAC) process for Hamilton Army Airfield (HAAF), the installation was divided into groups of sites to facilitate the investigation, remediation, and transfer process. The groups are referred to as the Inboard sites, the Outparcels, and the Coastal Salt Marsh (CSM) sites. The Outparcels include Hospital Hill, Petroleum, Oil, and Lubricant (POL) Hill, and Outparcels A2, A3, A4, A5, and A6 (Figure 1-1). To support base closure and redevelopment activities, in 1994 the USACE prepared a Community Environmental Response Facilitation Act (CERFA) investigation for the BRAC parcels to determine the portions of real property that could be immediately reused and redeveloped (Earth Technology Corporation [Earth Tech.], 1994). This EBS has been prepared to update the CERFA report for two of the BRAC outparcels, Hospital Hill and POL Hill. Outparcels A2 through A6 have already been transferred to the New Hamilton Partners. The Main Airfield Parcel (Inboard Sites) and CSM Sites will be addressed in a separate document.

Hospital Hill and POL Hill have undergone extensive investigation and remediation activities since the preparation of the CERFA report in 1994. The Department of Toxic Substances Control (DTSC) provided a letter on August 18, 2000 stating that no further action is required at Hospital Hill regarding the former location and releases of hydrocarbons from underground storage tanks (USTs) (RWQCB, 2000). In a letter dated July 3, 1998 DTSC indicated there were no other issues of concern at Hospital Hill.

The Army is currently preparing a Closure Report and a Corrective Action Plan to document the current conditions and recommendations for two areas at POL Hill where petroleum had been released. These areas include the tank farm area on the lower bench of POL Hill, and the former location of AST 2 on the upper bench of POL Hill. The Closure Report for the tank farm area will recommend no further action. The Corrective Action Plan will recommend monitored natural attenuation to address petroleum in groundwater near the former AST 2. This EBS documents the condition of these properties and provides the basic documentation for their transfer. Both parcels are slated to be transferred in fee to the City of Novato. For the purposes of this EBS, the POL Hill parcel is defined to include land that is within the buffer zone of Landfill 26. However, the portion of land within the buffer zone will not be transferred as a part of POL Hill. The portion of POL Hill within the buffer zone will be retained by the Army until it can be transferred with the landfill at a later date. The legal boundaries for the impending transfer of POL Hill have been revised to exclude the land within the buffer zone. EBS Figure 3-3 has been revised to show both the approximate area of POL Hill included and evaluated in this EBS as well as the approximate



LEGEND:

- ARMY–OWNED PROPERTY BOUNDARY
- (A) BRAC PROPERTY
- (B) NAVY HOUSING
- (C) LANHAM HOUSING
- (D) NOVATO SCHOOL DISTRICT
- (E) GSA SALE PARCEL
- (F) US COAST GUARD
- (G) STATE OF CALIFORNIA

APPROXIMATE SCALE

0 1000 2000 FEET

REFERENCE:
WOODWARD–CLYDE FEDERAL SERVICES DRAWING SK9469.

IT CORPORATION FIGURE 1-2 BRAC PROPERTY LOCATION MAP (DWG NO. 762538-A31!

Figure 1-1
Location Map POL Hill & Hospital Hill
Hamilton Army Airfield

boundaries of the portion of POL Hill proposed for transfer in the FOST. It is anticipated that POL Hill will be used for recreational open space and Hospital Hill will be used for neighborhood commercial purposes.

1.2 Authority for the EBS

The Department of Defense (DoD) has established policy guidelines for BRAC actions associated with the disposal and reuse of military bases. "Disposal" is used in this document to mean the process by which the Army transfers the responsibility for the operations and/or use of real property to another entity. The DoD has established policy requiring the preparation of an EBS before any property can be sold, leased, transferred, or acquired. The overall purpose of the EBS is to establish an environmental baseline to limit future Army liability and to document the current environmental condition of property. The EBS provides information supporting the determination that property proposed for transfer or disposal does not contain hazardous substances at levels that would pose an unacceptable threat to human health or the environment. This EBS will be used by the Army in meeting its obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42, United States Code (USC) Section 9620(h) [also referred to as CERCLA Section 120(h)], as amended by the CERFA (Public Law 102-426).

In preparing this EBS, the Army followed "BRAC 95 EBS/ BRAC Cleanup Plan (BCP) Guidance" as prepared by the U.S. Army Environmental Center (USAEC), Base Closure Division, dated Fall 1995/September 1996 Revision.

1.3 Objective

The primary objective of this EBS is to classify the Hospital Hill and POL Hill BRAC parcels into DoD property categories to facilitate transfer to civilian use. Recent DoD guidance, as described in the BCP Guidebook (Fall 1995/September 1996 Revision), requires bases undergoing closure to classify BRAC Parcels within their installation into one of seven categories. It also requires preparation of an environmental condition property map identifying the location of the areas. For the purposes of this EBS, the categories have been applied to the entire POL Hill parcel including the area that overlaps with the Landfill 26 buffer zone. The property classification categories are described below.

1.3.1 DoD Property Classification

The DoD Guidebook specifies that each BRAC Parcel be classified into one of the following seven categories based on the Fall 1995/September 1996 Revision category definitions.

Category 1: Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

Category 2: Areas where only release or disposal of petroleum products has occurred.

Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

Category 4: Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.

Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

Category 6: Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.

Category 7: Areas that are not evaluated or require additional evaluation.

1.4 Organization of EBS

This EBS report is organized according to the Fall 1995/September 1996 Revision "BRAC 95 EBS/BCP Guidance". A brief description of the organization is presented below.

- Table of Contents (followed by lists of Figures, Tables, Acronyms and Abbreviations)
- Executive Summary
- Sections 1 and 2 include an introduction and the survey methodology used in preparing this report. Specifically, the approaches to archival research, interviews, visual inspection, and title documents are detailed.
- Section 3 includes information related to processes and practices, the facilities, permits, the surrounding environment, and land uses.
- Section 4 includes the investigation results of key areas of concern such as USTs, polychlorinated biphenyls (PCBs), and hazardous substances.
- Section 5 includes the CERFA Letter Report.
- Appendices sections include detailed information related to specific issues.

1.5 Limitations

The survey presented in this report was conducted with the degree of skill and care consistent with customarily accepted good practices and procedures, which were applicable at the time and place of this study and for the types of services performed. Conclusions and recommendations require the balance of diverse scientific, regulatory, economic, business, legal, and other criteria. The conclusions presented are based on an assessment of conditions existing on the dates of the field reconnaissance. The conclusions in the report are based on readily available data (records, reports, and employee interviews) and may undergo revision as additional data are obtained. Conflicting data and information gathered from various sources have been resolved to the extent possible, given the constraints of this study. The diverse scientific and technical disciplines required to perform environmental, scientific, and related services are developing rapidly and are highly sensitive to changes in regulatory criteria, scientific methodologies, and interpretations. This report is not a

guarantee that hazardous substances exist, or do not exist, at a specific site; further investigations may be required. This study does not consider the consequences of the demolition of facilities. If demolition is contemplated, additional environmental studies may be required.

2.0 Survey Methodology

Archival research, staff interviews, and visual site inspections (VSIs) were used to obtain the necessary information for preparation of this EBS. The general methodology is described below.

2.1 Existing Investigation Documents

Existing investigation documents were provided by the BRAC Environmental Coordinator at HAAF. Documents reviewed include site investigations, groundwater and soil sampling reports, UST reports, closure reports, and others. A complete list of the documents reviewed is included in Appendix A.

2.2 Federal, State And Local Government Regulatory Records

A detailed record search of federal, state and local records was performed to identify areas where storage (for one year or more), release, or disposal of hazardous substances or any petroleum product or its derivatives has occurred. Also, a review was conducted of all reasonably obtainable federal, state and local government records for each adjacent facility where there has been a release of any hazardous substance or petroleum product that is likely to cause, or contribute to, contamination at HAAF. A list of the agency records reviewed follows. All agency records were accessed through the use of an electronic database provided by VISTA Information Solutions (VISTA). This database was queried for adjacent properties based on the minimum search distances recommended by the American Society for Testing and Materials (ASTM) guidelines for conducting Phase I Site Assessments. The search encompassed an area located within a 4-mile radius of a reference point centrally located at HAAF to ensure that adjacent properties within a 1-mile radius were captured respectively for both Hospital Hill and POL Hill.

Agency records reviewed:

VISTA environmental database, which includes:

- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
- National Priorities List (NPL)
- California Sites Priorities List (SPL), database provided by Cal EPA, DTSC
- California Sites Database (SCL), database provided by DTSC
- Resource Conservation and Recovery Information System—Treatment, Storage, and Disposal Facilities (RCRIS-TSD) and RCRIS-TSDC, which are RCRIS-TSDs subject to corrective action under RCRA

- Resource Conservation and Recovery Information System—Large Quantity Generators (RCRIS-LQG)
- Resource Conservation and Recovery Information System—Small Quantity Generators (RCRIS-SQG)
- RCRIS Corrective Action Sites (CORRACTS)
- Emergency Response Notification System (ERNS)
- California Leaking Underground Storage Tank Information System (LUST) and LUSTs for various regions (LUST-REGs): for Region 1 – Active Toxic Site Investigations; Region 2 – Fuel Leak List; Region 6 – Leaking Underground Storage Tanks
- California UST and USTs for the City of Sebastopol (UST-SEBA), the City of Healdsburg (UST-HEAL), the City of Santa Rosa (UST-SR), the City of San Rafael (UST-CO-SR), Sonoma County (UST-CO-SON), and the City of Petaluma (UST-PETA)
- California Aboveground Storage Tanks (AST)
- Spills for Region 1 – Active Toxic Site Investigations and Region 2 – SLIC Site List (SPILLS)
- California Solid Waste Inventory System and USGS Solid Waste Landfills (SWLF); and the City of Los Angeles Landfills, Transfer Stations (SWLF-CO)
- No Further Remedial Action Planned Sites (NFRAP)
- Waste Management Unit Data System (WMUDS)

A summary of the VISTA report is provided in Appendix B

2.3 Aerial Photographs

Historical aerial photographs were not reviewed. A complete review of historical aerial photos was conducted during the CERFA Report (Earth Tech., 1994) preparation. Pertinent information obtained through the review of aerial photographs in the CERFA Report is included in this EBS where appropriate.

2.4 Interviews

Current and past key personnel were interviewed to gather relevant information regarding the two BRAC Parcels at HAAF. The purpose of the interviews conducted during the development of the EBS was primarily to support the categorization of each of the parcels into one of the seven DoD categories. The interviews were structured to obtain information to close data gaps that were identified during the records search and VSI phases of the EBS.

Interviews for the EBS were conducted between September and December 2000. Individuals interviewed included Mr. Brad Call (USACE), Mr. Keith Montag (USACE), Mr. Ed Keller (HAAF BRAC Environmental Coordinator), Mr. Hyland Morrow (USACE), Mr. Hugh

Ashley (USACE), Ms. Peggy Llewellyn (URS Corporation), Mr. John McGuire (IT Group), Mr. Tim Anenson (IT Group), and Mr. Franck Hackett (IT Group).

2.5 Visual Site Inspection

The visual inspection team used information gathered from the archival research and interviews to identify possible contaminant source areas and exposure pathways. Features inspected included buildings, floors, drains, soils and vegetation at Hospital Hill, and vegetation, soil, and the former locations of structures at POL Hill. The visual inspection team also examined adjacent properties to identify potential sources of contamination that might have migrated or could migrate onto the HAAF Parcels.

2.5.1 Visual Site Inspection Approach

The VSI for HAAF was conducted by an inter-disciplinary team. The initial approach to the VSI included a review and understanding of the following:

- Health and safety issues related to the protection of the VSI team members conducting the inspection,
- Scope of work for the EBS, its requirements, limitations, and level of effort,
- Historical and current information on the site, buildings and structures, processes, operational practices and management procedures conducted at Hospital Hill and POL Hill,
- Coordination with staff for access, and
- Assessing information derived from the interview and research teams to identify key data gaps.

2.5.2 Purpose of the Visual Site Inspection

The primary purpose of the VSI is to provide documentation to be used as supporting evidence for the classification of each of the BRAC Parcels into one of the seven DoD categories. VSI forms were produced to document the findings for Hospital Hill and POL Hill.

2.5.3 Visual Site Inspection Summary Overview

VSIs were conducted at Hospital Hill and POL Hill on September 7, 2000. These site inspections were performed to resolve any major differences between historical information, information on past operations and practices at the parcels, and information gained from the interviews of more experienced personnel at HAAF. Features inspected included buildings, floors, drains, soils and vegetation at Hospital Hill, and vegetation, soil, and the former locations of structures at POL Hill. Pertinent information obtained through the VSIs is included in this EBS where appropriate.

2.5.4 VSIs of HAAF Adjacent Properties

VSIs were conducted for the adjacent properties surrounding Hospital Hill and POL Hill on September 7, 2000. These observations included both those properties immediately adjacent

to the Hospital Hill and POL Hill fencelines and properties beyond the adjacent property parcels. These inspections were performed to identify potential sources of contamination that might have migrated or could migrate and impact Hospital Hill or POL Hill. Pertinent information obtained through the VSIs is included in this EBS where appropriate.

2.6 Title Documents

The chain-of-title and transfer documents for the HAAF Parcels, which document the time the Army acquired the installation, were reviewed during preparation of the CERFA Report. These documents were furnished by USACE, Sacramento District. CERCLA 120(h)(4)(A)(ii) requires review of the "recorded chain of title documents regarding the real property." For the CERFA assessment, USAEC requested a review of HAAF installation tract maps and transfer documents to identify the prior property owners at the time of transfer to the Army. The purpose of this review was to collect additional information concerning the prior use and environmental condition of the property associated with Hospital Hill and POL Hill at the time of transfer to the Army. Previous ownership and the dates of transfer to the Army are provided on a 1948 real estate map included in the CERFA Report (Earth Tech., 1994). This figure is included in Appendix C. According to USACE Real Estate personnel, this information has not changed since the production of the CERFA report.

3.0 Property Characterization

3.1 General Property Information

Hamilton Army Airfield is a 1,600-acre former military installation located approximately 22 miles north of San Francisco on San Pablo Bay in Marin County, California (Figure 3-1). The former location of Hamilton Army Airfield was bounded on the north by the North Antenna Field (a formerly used defense site), private agricultural lands, and a private residential community (Bel Marin Keys); on the east by state-owned land and San Pablo Bay; on the south by private agricultural fields; and on the west by Nave Drive and U.S. Highway 101.

Hospital Hill is located in the central portion of HAAF, just south and upslope of the GSA Phase I Sale Area (Figure 1-1). Hospital Hill is surrounded on the north, east, south, and west by commercial facilities and residential homes, recreational areas, Coast Guard housing property, and administrative office buildings, respectively. POL Hill is located in the upland portion of HAAF, northeast of the GSA Sale Area (Figure 1-1). It is located on the north side of a ridge known as Reservoir Hill and southwest of West Boundary Road. This parcel is separated from the main portion of the BRAC Property by approximately 200 feet. POL Hill is located in the north central portion of HAAF near the northern portion of the runway. POL Hill is completely surrounded by the GSA Phase II Sale Area.

The total acreage of functional areas at Hospital Hill and POL Hill are shown in Table 3-1.

TABLE 3-1
Total Acreage of Hospital Hill and POL Hill

Parcel	Acres
Hospital Hill	3.41
POL Hill	7.84a

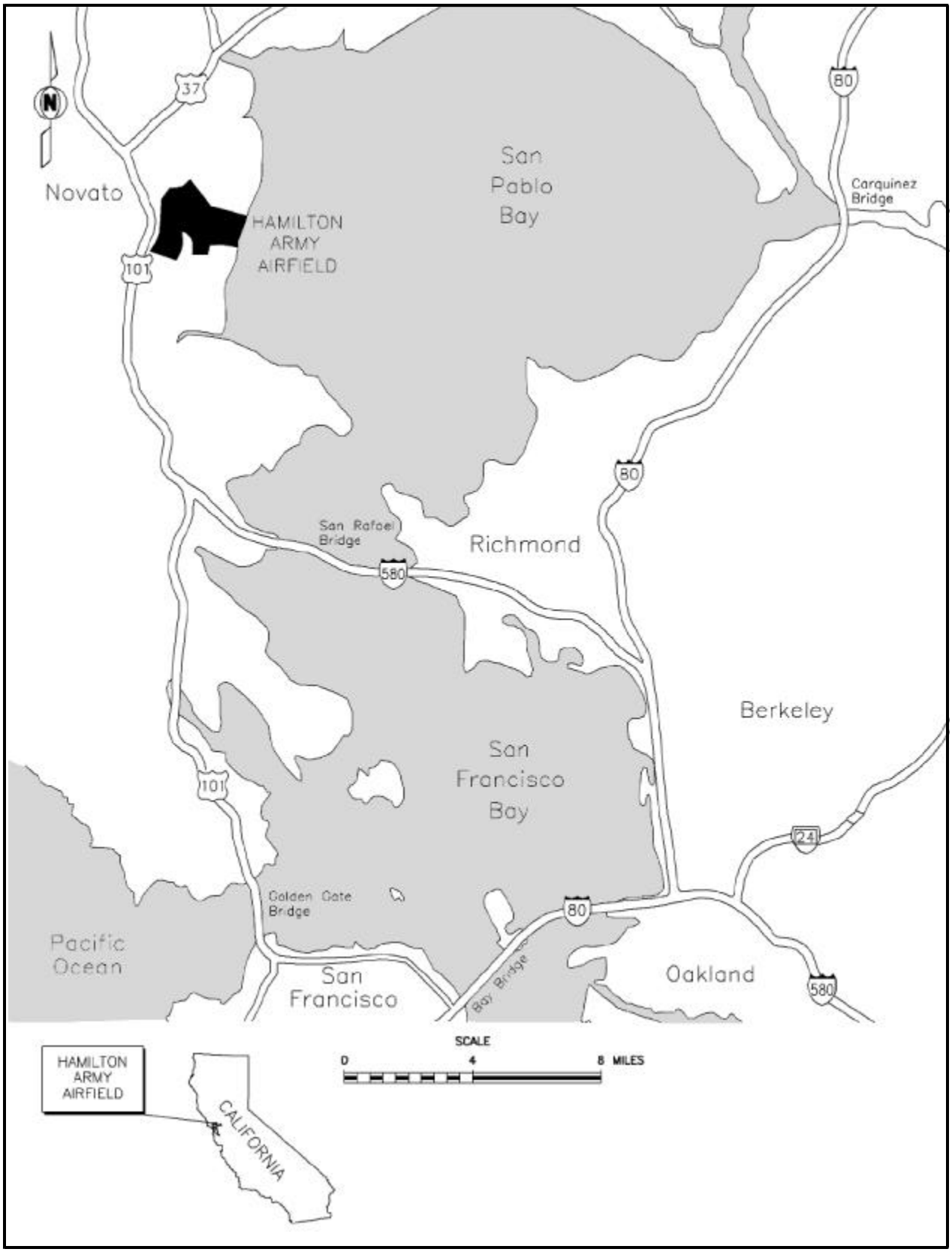
[a] Includes area within the buffer zone for Landfill 26

During preparation of the CERFA report, the Earth Technology Corporation conducted a review of tract maps and transfer documents to identify the former property owners of all BRAC parcels at the time of their transfer to the Army. The purpose of this review was to determine the property's prior use and environmental condition at the time of transfer. Previous ownership and dates of transfer to the Army for Hospital Hill and POL Hill are indicated on Figure 5-2 of the CERFA Report (Appendix C).

3.2 Description of Facilities

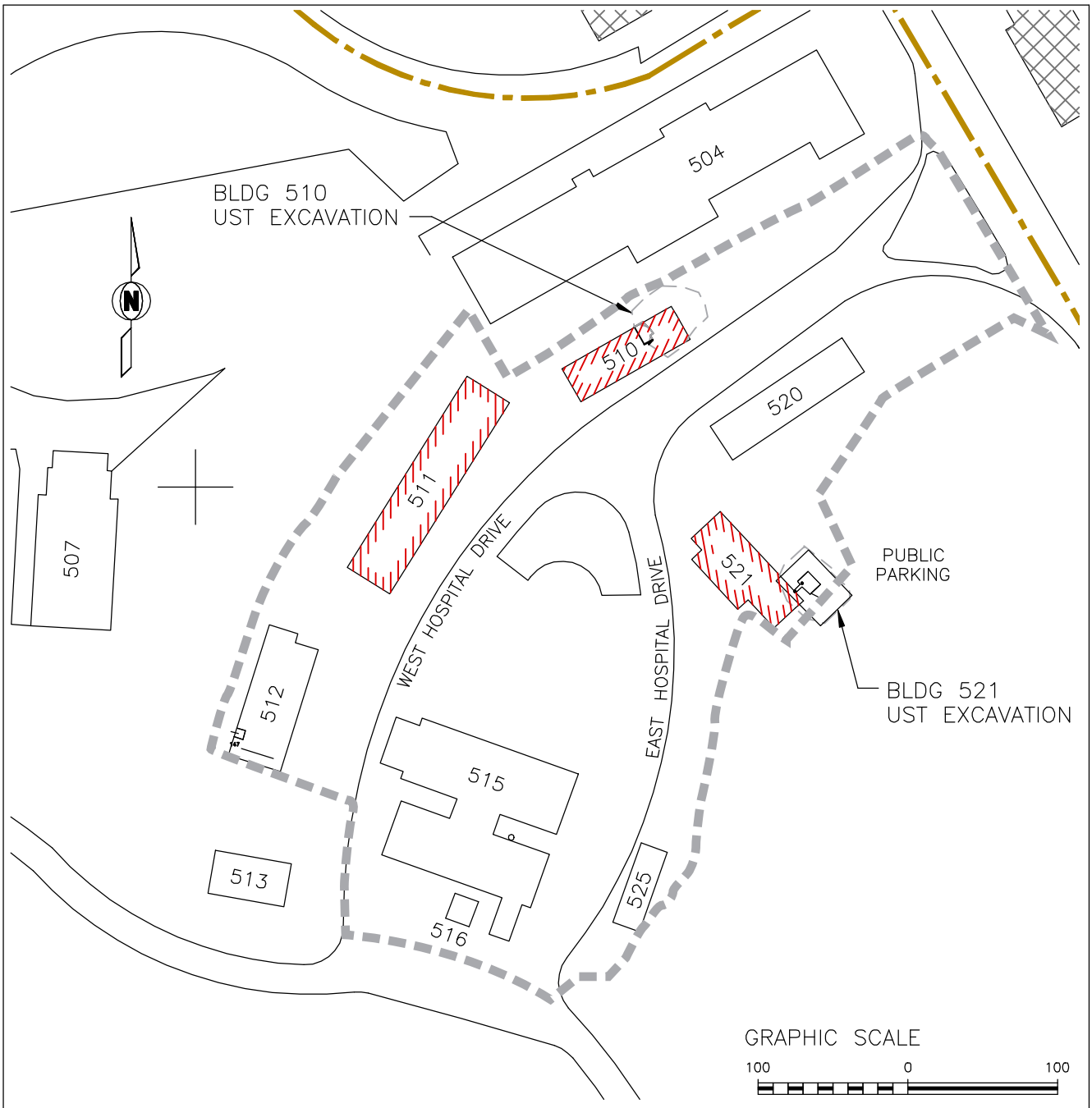
3.2.1 Hospital Hill

Table 3-2 provides a list of past and present structures at Hospital Hill. The table summarizes the year of construction, square footage, historical use, and current status. The location of existing and former structures is shown in Figure 3-2. Underground storage tanks and other issues are described in Section 3.2.



REFERENCE: WOODWARD-CLYDE DRAWING SK-1 FIGURE 1-1
IT CORPORATION FIGURE 1-1 SITE LOCATION MAP (DWG NO. 762538-A498)

Figure 3-1
Site Location Map
Hamilton Army Airfield



IT CORPORATION FIGURE 1-3 LOCATION MAP HOSPITAL HILL OUTPARCEL (DWG NO. 762538-A225)

FIGURE 3-2

SITE MAP

HOSPITAL HILL OUTPARCEL

HAMILTON ARMY AIRFIELD

Figure 3-2
Site Map Hospital Hill
Hamilton Army Airfield

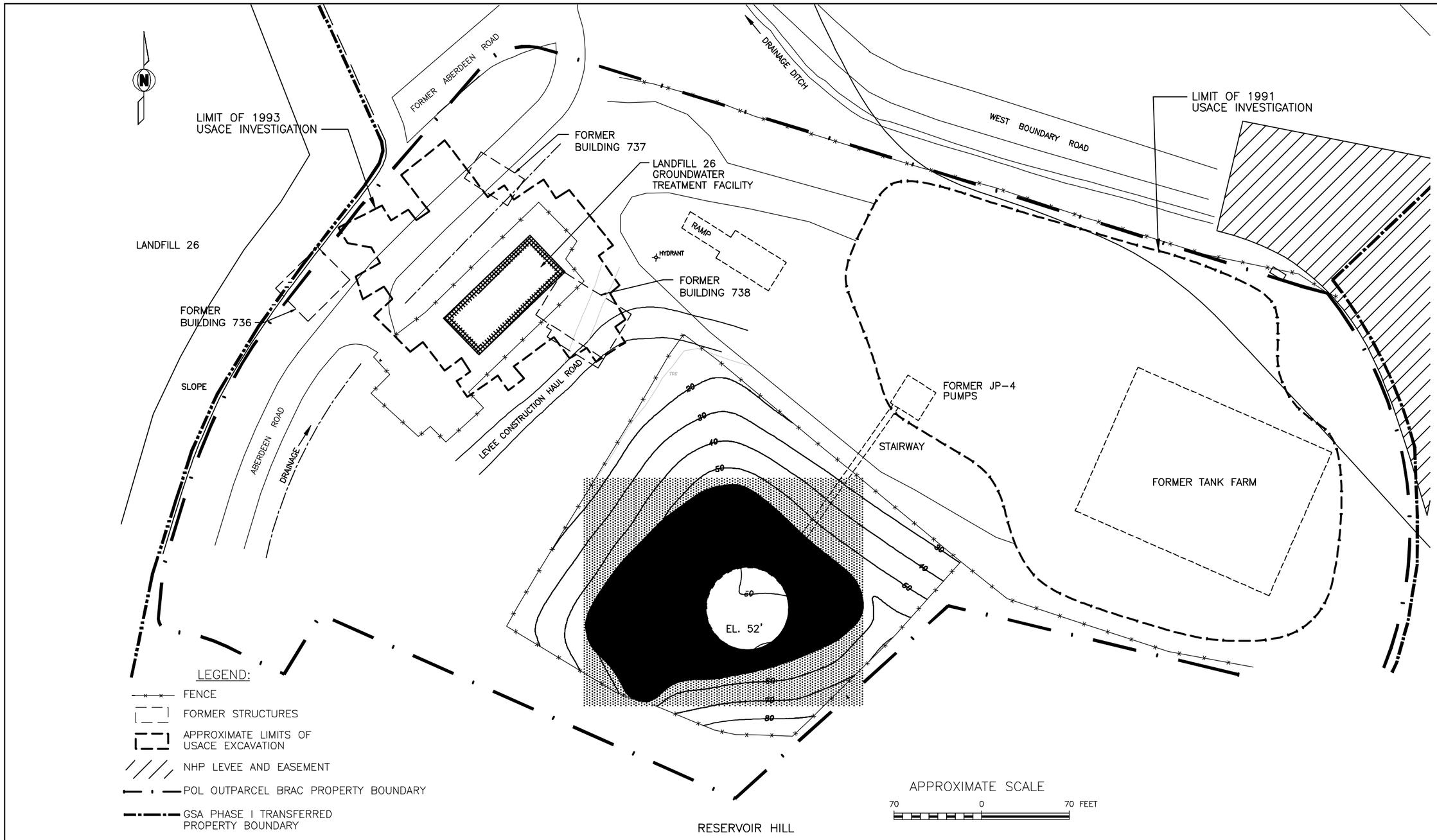
TABLE 3-2
List of Past and Present Structures at Hospital Hill

Building	Year Built	Area (SF)	Historical Use	Current Status
510	1941	2,200	Medical and dental clinic. Historical documents show two dates of construction: 1941 and 1957.[1] Aerial photographs confirm date of 1941.	Condemned in February 1997. Demolished in April 1997 by IT Corporation.
511	1941	5,200	Dental clinic, pharmacy, and medical lab	Condemned in February 1997. Demolished in June 1997 by New Hamilton Partners.
512	1941	4,802	Administrative/classroom building	Condemned in February 1997. Building is present; access is restricted.
515	1934	26,139	Base Hospital	Building is present and currently vacant. Access is restricted.
516	Circa 1951	Not known	Storage building of office-related refuse for Building 515. Also used as garbage can wash rack and a solid waste collection annex according to information obtained during interviews. Historical documents show two dates of construction: 1934 and 1967.[2] Review of aerial photographs suggests 1967 as more accurate construction date.	Building is present and currently vacant.
520	1941	3,635	Medical command and administration facility	Building is present and currently vacant. Access is restricted.
521	1942	2,137	Dental prosthetic laboratory. May have also been a clinic or medical ward.	Condemned in February 1997. Demolished in April 1997 by IT Corporation.
525	1941	1,387	Hospital general storage building (linen supply building)	Condemned in February 1997. Building is present.

[1] Medical Physics Center, 1994; Earth Tech., 1994.
[2] IT, 2000; Earth Tech., 1994.

3.2.2 POL Hill

Several small structures were historically present at POL Hill. Table 3-3 provides a list of past and present structures at POL Hill. The table summarizes the year of construction, square footage, historical use, and current status. Underground storage tanks and other features related to fuel distribution activities at POL Hill are described in Section 3.3.3. Figures 3-3 and 3-4 show the location of existing and former site features.



IT CORPORATION FIGURE 1-3 POL OUTPARCEL SITE MAP (DWG No. 762538-B525)

Figure 3-3
Site Map - POL HILL
Hamilton Army Airfield

CH2MHILL

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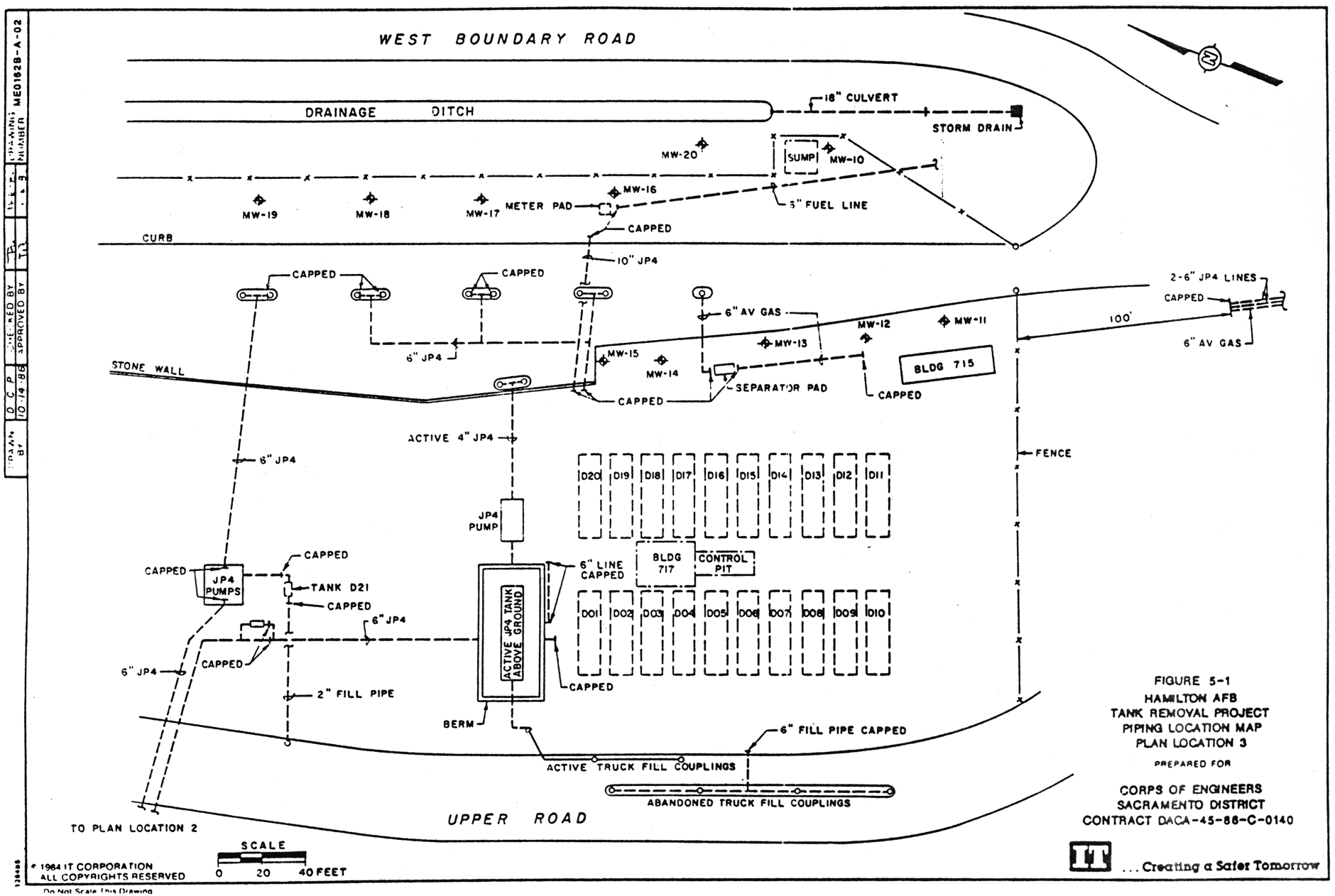

Figure 3-4
POL HILL Tank Farm Area

CH2MHILL

TABLE 3-3
List of Past and Present Structures at POL Hill

Building	Year Built	Area (SF)	Historical Use	Current Status
715	Late 1950s	Not known	Not known (may have been guard shelter according to information obtained in interviews)	Removed by IT Corporation during remediation of POL area between 1986 and 1991.
717	Late 1950s	Not known	Water Separator House and Water Control Pit	Demolished by IT Corporation in 1986 during investigation and remediation of POL area.
736[1]	Late 1950s	1,496	Historically an administration building. Last used for temporary storage of waste oil	Demolished in 1993 prior to construction of LF 26 groundwater treatment plant.
737[1]	Late 1950s	800	Historically a maintenance building. Last used for temporary storage of waste oil	Demolished in 1993 prior to construction of LF 26 groundwater treatment plant.
738[1]	Late 1950s	2,596	Historically a maintenance building. Last used for temporary storage of waste oil	Demolished in 1993 prior to construction of LF 26 groundwater treatment plant.
NA	1993	3,812	Groundwater treatment system for LF 26	Building is present but not operating.

NA Not applicable

[1] The Environmental Assessment (EA) prepared by USACE March 1995 indicates buildings 736, 737 and 738 were built after 1950. No other specifics were contained in the EA. Review of aerial photograph confirms 700 series buildings were constructed in the late 1950s.

3.3 Property History

3.3.1 HAAF

Hamilton Army Airfield was constructed on reclaimed tidal mud flats by the Army Air Corps in 1932. The site, previously known as Marin Meadows, had been used as ranch and farm land since the Mexican Land Grant. Military operations began in December 1932, first as a base for bombers and later as a base for transport and fighter aircraft. The Base played a major role in World War II as a training field and staging area for Pacific operations. During the war, the Base hospital (Building No. 515 at Hospital Hill) served as an acute care and rehabilitation facility for thousands of war casualties per month. The Base was renamed Hamilton Army Air Force Base in 1947, when it was transferred to the newly created U.S. Air Force (USAF). The USAF used the Base primarily as a training and fighter installation until 1975. The USAF ended military operations at the Base in 1976 and the property was declared surplus by the Department of Defense as part of the Base Realignment and Closure Act of 1988. In 1976, with permission from the USAF, the Army began aircraft operations at the airfield and its supporting facilities. In 1984, the airfield property was officially transferred back to the Army and renamed Hamilton Army Airfield. The Army continued to use the airfield for Army Reserve aircraft operations until March 1994. Currently, the BRAC program for Hamilton is managed by Forces Command Headquarters at Fort McPherson, Georgia. The property is on the real property books of I Corps at Fort Lewis, Washington.

3.3.2 Hospital Hill

The Hamilton Army Airfield medical facilities were located at Hospital Hill. Interviews with USACE personnel indicated that in recent history the Hospital Hill area was used by the Coast Guard until approximately 1995. Facilities at Hospital Hill included the main installation hospital; a former storage building for Building 515 and former garbage can wash rack; a former medical and dental clinic; a former medical lab; a former administrative building; a former medical command and administration building; a former dental prosthetic lab; and the former hospital warehouse. Although the hospital is no longer active, x-ray facilities remain in the hospital and were used by the U.S. Coast Guard medical lab. The former hospital building was occupied by the Army's facility manager for the base and the Army Medical Department (AMEDD) Unit (a medical recruiting unit that recruited medical personnel for the military). The AMEDD occupied the former hospital building until March or April of 1995.

Although limited information is available on historical practices in these buildings, the CERFA Report (Earth Tech., 1994) suggests that medical supplies such as alcohol, acetone, peroxide, active acid, and disinfectants and cleaners were probably stored in all of the buildings at Hospital Hill. X-ray equipment and materials were used in the main hospital. According to reports, medical and dental wastes generated at the Hamilton facilities were properly disposed. There was no medical waste incinerator at the installation. The exact off-site disposal method for medical waste from Hamilton was not identified (Earth Tech., 1994).

Two USTs were located at Hospital Hill (Section 4.2.1). These tanks supplied diesel fuel to boiler room operations in buildings 510 and 521. All USTs were removed in 1997 as described in Section 4.2.3.

3.3.3 POL Hill

POL Hill served as the base fuel center from 1942 to sometime prior to 1986 (IT, 1996). This facility served as the primary receiving and distribution point for aircraft fuel. POL Hill contained one 840,000-gallon above ground storage tank (AST 2) located on the upper hillside bench of POL Hill. The site also contained twenty 25,000-gallon underground storage tanks in a lower tank farm at the base of the hill. The large AST (AST 2) and the twenty USTs contained JP-4 jet fuel. A gravity-fed pipeline connected AST 2 to the lower tank farm. Other features at POL Hill included a series of pipelines, pumps, sumps, meters, and small buildings that supported fuel supply and distribution for aircraft operations.

Two additional ASTs were located at POL Hill, a 25,000-gallon AST that contained "mogas" (automobile fuel) and later JP-4 jet fuel, and a 20,000-gallon AST that contained JP-4 jet fuel. A 750-gallon UST was also located in the tank farm area near the fuel pump house. The contents of this tank are not known. A 600-gallon AST and 2,500-gallon AST were located near Buildings 737 and 738. The contents of these tanks were not known (Weston, 1990).

All of the ASTs and USTs at POL Hill have been removed. The 840,000-gallon AST (AST 2), the twenty 25,000-gallon USTs, the 750-gallon UST and the 25,000-gallon AST (formerly containing mogas and JP-4) were all removed by IT Corporation and Atlas Hydraulic in 1986. The 20,000-gallon AST that contained JP-4 jet fuel was later removed by IT Corporation in 1990, according to interviews with IT personnel. The 600-gallon and

2,500-gallon ASTs near Buildings 737 and 738 were removed prior to the construction of the Landfill 26 groundwater treatment plant. Additional details are provided in Section 4.2.1.2.

During the period of operation, jet fuel and other petroleum products were released to the soil and groundwater at POL Hill. Extensive investigation and remediation activities have been conducted at POL Hill; details are provided in Sections 4.2.2 and 4.2.3, respectively.

In 1993, a groundwater treatment system for Landfill 26 was constructed on the north end of the POL Hill parcel in a low-lying area that was partially paved. This building currently is not in operation.

3.4 Tenant Activities

Historical tenant activities are described in Section 3.3. There are no current tenant activities at Hospital Hill. There are no current tenants at POL Hill except for the presence of the groundwater treatment system for Landfill 26, which is not in operation. Eighteen groundwater monitoring wells are currently in place at POL Hill (IT, 1999a). These wells are monitored by the USACE on a periodic basis. It is planned that these wells will remain in place to facilitate future monitoring of the site.

3.5 Permitting Status

The permit status of HAAF is summarized below from information obtained through prior environmental document reviews provided in the CERFA Report (Earth Tech., 1994); the electronic database search of Federal, State and Local databases; and interviews with USACE personnel.

The CERFA Report indicated HAAF records showed that as of 1994 the installation did not have any permits from regulatory agencies to conduct installation operations. The installation did not store waste regulated under the Resource Conservation and Recovery Act (RCRA) in sufficient quantities and for sufficient duration to require a hazardous waste storage permit. Today, HAAF has its own EPA ID Number (USEPA ID No. CA3570024288). However, during the investigation and remediation activities conducted at Hospital Hill and POL Hill, hazardous wastes were reported, manifested and handled under the USEPA ID number for the Presidio of San Francisco (USEPA ID No. CA7210020791), because HAAF was a sub-installation to the Presidio at that time. Hazardous waste generated at HAAF (including hazardous waste manifesting and annual and bi-annual reporting) was handled through the Presidio, which was classified as a small-quantity generator of hazardous waste.

In 1999, the USACE prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements *of State Water Resources Control Board Order No. 92-08 DWQ, National Pollutant Discharge Elimination System General Permit No CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity* (IT, 1999b). This SWPPP addresses the storm water management and sampling practices specific to construction and remediation activities performed at HAAF. The areas include in the SWPPP include Hospital Hill and POL Hill. Prior to this 1999 SWPPP, the BRAC and General Services Administration (GSA) properties at HAAF were covered under separate plans.

Currently there are no records of Federal, State or Local permits related to activities conducted at Hospital Hill or POL Hill.

3.6 Surrounding Environment and Land Uses

3.6.1 Demographics

HAAF is located in southeast Novato in eastern Marin County, California. With its closure, the former installation became one of the largest land holdings suitable for development along the U.S. 101 corridor in Marin County. Today the developer, New Hamilton Partners (NHP), has made significant progress in constructing commercial and residential neighborhoods on the former GSA property. New homes are now located southeast of POL Hill along the flank of Reservoir Hill and new homes are present or are being constructed southwest of POL Hill along the opposite flank of Reservoir Hill. When final construction is complete, the new Hamilton facility will have a 136-room hotel, a Lucky Supermarket, 950 new homes, and 550,000 square feet of office space (in seven renovated airplane hangers).

Urbanized land uses in Marin County are concentrated along Hwy 101 with some urbanized use along the shoreline of the Bay. The urban corridor centered along Hwy 101 is primarily characterized by residential and commercial development. The western portions of Marin County are largely agricultural with significant areas of publicly owned space. The general region is characterized by moderately dense pockets of urban development surrounded by large tracts of open space, including areas with wetlands, floodplains, and steep terrain. (RBF & Associates, 1995).

Census 1990 data show the total population in Marin County was 230,096, with 47,585 people living in the City of Novato. In 1990, the median income in Marin County was $48,544.

3.6.2 Climatology

The climate at HAAF and the surrounding area is Mediterranean, which is characterized by warm, dry summers and cool, wet winters. The temperature is moderated by HAAF's proximity to San Pablo Bay and the Pacific Ocean. The deflection of the sea breeze and fog by coastal mountains gives the region an entirely different temperature regime compared to areas west of the mountains and in San Francisco. Daily variation in temperature is relatively small. Daytime temperatures are more moderate than those of most Bay Area cities (January and July mean maximum temperatures are 56°F and 80°F, respectively); however, 100°F days occur occasionally in late summer. The frequent clear skies (40 percent annually) and light winds enhance convection cooling at night. Thus, nighttime temperatures are relatively low (January and July mean minimum temperatures are 36°F and 50°F, respectively). The average maximum temperature is 72°F; the average minimum temperature is 47°F.

The rainy season extends roughly from November through March; during these months, rainfall averages between 4 to 7 inches per month. The mean annual precipitation is 28 inches. The winter influx of rain has a dramatic effect on this area, resulting in an elevated groundwater table and some surface flooding. During summer months, rainfall averages less than 0.1 inch

per month. This results in the evaporation of surface waters, a drop in the groundwater table, and extensive desiccation of shallow soil horizons (Woodward-Clyde, 1996).

3.6.3 Hydrology

Hamilton Army Airfield is situated within the Novato Creek drainage basin, which is comprised of an area of about 44 square miles. This basin is bounded by the Petaluma River basin to the north, San Pablo Bay to the east, the Coast Range hills to the west and southwest, and the Las Gallinas Creek drainage system to the south. The Coast Range hills act as the principal source of groundwater recharge and surface water drainage for the basin.

Hospital Hill and POL Hill are located on outcroppings of relatively steep, higher elevation bedrock knobs, compared to the relatively flat, low elevation areas of the main airfield and other BRAC parcels. The elevation of the knobs is as high as 150 feet above mean sea level. The low-lying portions of HAAF are drained by a system of concrete-lined ditches and storm drains that tie into a perimeter drainage system. This perimeter system directs flows to a pumping station where water is pumped to San Pablo Bay (Earth Tech., 1994).

The only perennial surface water feature at POL Hill is a drainage ditch that lies just outside the northwestern boundary of the area. This ditch collects runoff water that flows northward across the northern portion of the POL Hill area and groundwater seepage. The ditch originates from the area immediately to the east of POL Hill and then drains westward under Aberdeen Road and into the main HAAF perimeter drainage system. (Woodward-Clyde, 1995a). The perimeter drainage system leads to a pump station which pumps the drainage into San Pablo Bay (IT, 1999b).

3.6.4 Geology and Hydrogeology

3.6.4.1 HAAF

HAAF lies within the northern coastal range geomorphic province of California, which consists of a series of generally fault-bounded, northwest-trending upland areas separated by intermontane valleys. The installation lies at the eastern margin of Big Rock Ridge, which is largely underlain by bedrock of the Franciscan Complex, a structurally disrupted assemblage of Mesozoic sedimentary, igneous, and metamorphic oceanic rocks. Bedrock knobs present at the installation consist of yellow and buff clastic rocks that have been interpreted as weathered horizons of Franciscan Complex sandstone or possibly younger Tertiary rock.

The lowland areas of HAAF lie on former wetlands bordering San Pablo Bay. The bay occupies a valley between upland bedrock areas described above. The valley has been partially infilled with clastic sediments deposited in alluvial, fluvial, and shallow-marine environments. The principal surficial geology in this area is a dark, organic-rich, highly plastic, silty clay unit that was deposited in intertidal and shallow subtidal depositional environments. In keeping with common nomenclature in the San Francisco Bay area, this unit is referred to as Bay Mud. The Bay Mud may extend to depths as great as 90+ feet below ground surface in the eastern portion of the HAAF BRAC Property.

Soil types found at HAAF include Novato Clay, Reyes Clay, Saurin-Bonnydon Complex, Saurin-Urban Land Bonnydon Complex, Urban Land Xerothenths Complex, Xerothenths Fill, and Xerotheths-Urban Land Complex. A major component of shallow soils at HAAF is artificial fill that has been used for a variety of purposes, including levee construction, landfill cap materials, and road/taxiway base rock. This material is highly heterogeneous, consisting of variable proportions of clay, sand, gravel, and cobble-sized material. (Earth Tech., 1994).

3.6.4.2 Hospital Hill

A typical cross section of the Hospital Hill area identifies the sandstone core with flanking deposits of sand and silt. At the margins of the hill, the sand and silt deposits interfinger with the Bay Mud that lies under the airfield on the main BRAC Property. The top one to three feet below the ground surface on the bay plain immediately east of the hill is composed of imported fill consisting of silt with sand and gravel. The fill was brought into HAAF when the airfield was constructed.

Groundwater occurs in the weathered bedrock along the flanks of Hospital Hill. Recharge occurs from rainfall on the top and slopes of the hill with groundwater percolating into the weathered material and into fractures in the bedrock. Flow within the bedrock is assumed to be controlled by fractures similar to conditions documented at POL Hill. Production rates are assumed to be generally less than 2 gallons per day based on similar geology to POL Hill. Groundwater at the toe of Hospital Hill, downgradient from Building 510 and former UST location, occurred at an average depth of approximately 6 feet below ground surface during a sampling event in March 1998. Groundwater at the toe of Hospital Hill, downgradient from Building 521 and former UST location, occurred at an average depth of approximately 3.5 feet below ground surface during the same event in March 1998 (IT, 2000). Groundwater flow direction for former UST locations at Building 510 and Building 521, based on one set of three wells at each site, is to the northwest and northeast, respectively.

3.6.4.3 POL Hill

Four distinct geologic units have been identified at POL Hill: two fill units underlain by two lithologic units of bedrock. The fill occurs in the gently sloping low-lying areas surrounding Reservoir Hill. In general, gently dipping bedrock underlies this fill (Woodward-Clyde, 1995a).

Groundwater at POL Hill occurs in the weathered bedrock along the flanks of Reservoir Hill. Recharge occurs as a result of rainfall on the top and slopes of the hill. Groundwater percolates into the weathered material and into fractures in the bedrock. Flow within the bedrock is assumed to be controlled by fractures. Production rates are generally less than 2 gallons per day. Groundwater in the vicinity of the former AST-2 occurs in the bedrock at a depth of approximately 25 feet below ground surface. Groundwater also occurs in the fill material below Reservoir Hill at increasingly shallower depths at lateral distances away from the toe of Reservoir Hill.

The water table surface appears to be unconfined beneath the hill and semiconfined in the gently sloping, low-lying areas that surround the hill. Groundwater data from wells near the drainage ditch along the northern boundary of POL Hill suggest that an upward

hydraulic gradient exists between the shallower and deeper units of the area (IT, 2000, Woodward-Clyde, 1995a).

3.6.5 Sensitive Environments

In 1995, Jones & Stokes prepared a Biological Assessment for the disposal and reuse of Hamilton (Jones & Stokes, 1995). The assessment was prepared to evaluate the potential effects of the disposal and reuse on federally proposed and listed species. According to the Biological Assessment, wetland and grassland communities and developed areas make up the dominant areas at HAAF. Two types of grasslands occur at POL Hill: annual grassland and fescue grassland. Vegetation in the annual grassland is dominated by weedy non-native annual grasses and forbs. Vegetation in the fescue grassland is dominated by tall fescue. The grassland habitat at HAAF and POL Hill is considered only moderate-quality wildlife habitat because the areas are fragmented by the runway and roads. However, the grasslands provide important habitat for a variety of wildlife including black-tailed deer, red-tailed hawk, American kestrel, California quail, and coyote. (Jones & Stokes, 1995).

Developed areas occupy a large portion of the western section of HAAF. Much of the developed area around Hospital Hill has been landscaped with vegetation (palm trees, lawn, etc.). Some natural vegetation, including live oaks with annual grassland understory is found at Hospital Hill. Wildlife in the developed areas at HAAF, such as Hospital Hill, commonly includes a variety of common birds and mammals. (Jones & Stokes, 1995).

The Biological Assessment concluded that the Army's disposal action (including the disposal of Hospital Hill and POL Hill) will have no effect on federally listed, proposed, or candidate species (Jones & Stokes, 1995).

Various archaeological studies have been conducted at HAAF. No known archaeological sites are present on Hospital Hill or POL Hill (Jones & Stokes, 1995). In 1992, historical baseline studies were conducted for HAAF as part of the Environmental Assessment for disposal and reuse. The studies concluded that buildings at Hospital Hill (510, 511, 512, 513, 515, 520, 521, and 525) contribute to the historic district. Buildings at POL Hill were constructed during the 1950s and are not contributors to the historic district (Jones & Stokes, 1995).

4.0 Investigation Results

4.1 Categorization Factor Findings: New Areas Identified by EBS Investigation

No new potential areas of hazardous substance use, storage, disposal, or release were identified for Hospital Hill or POL Hill during the preparation of this EBS.

4.2 Categorization Factor Findings: Previously Identified Sites

Previously identified areas for Hospital Hill and POL Hill are summarized below.

4.2.1 Petroleum Use and Storage

4.2.1.1 Hospital Hill

The Hospital Hill area contained two wooden 750-gallon underground diesel fuel storage tanks, one at Building 510 and the other at Building 521 (IT, 2000) (Table 4-1). These tanks supplied diesel fuel to boiler room operations in each building.

TABLE 4-1
List of Fuel Storage Tanks at Hospital Hill

Building	Tank Type	Tank Size (gal)	Contents	Current Status
510	UST	750	Diesel fuel	Removed April 1997
521	UST	750	Diesel fuel	Removed January 1997

As described in Section 4.2.2, petroleum releases to soil were identified during tank removal and investigation activities. Remediation of the contaminated soil is summarized in Section 4.2.3.

4.2.1.2 POL Hill

The primary references for the information provided below are Engineering Science, Inc. (ESI), 1993; HLA, 1991; IT, 1987; IT, 1997a,b; IT, 1999a; RWQCB, 2000; Woodward-Clyde, 1995a, b.

Table 4-2 provides a list of ASTs and USTs formerly used to store petroleum products at POL Hill.

POL Hill contained one 840,00-gallon above ground storage tank (AST 2) located on the upper hillside bench of POL Hill. The site also contained twenty 25,000-gallon underground storage tanks in a lower tank farm at the base of the hill. The large AST (AST 2) and the twenty USTs contained JP-4 jet fuel. A gravity-fed pipeline connected AST 2 to the lower tank farm.

Two additional ASTs were located at POL Hill, a 25,000-gallon AST that contained "mogas" (automobile fuel) and later JP-4 jet fuel, and a 20,000-gallon AST that contained JP-4 jet fuel. A 750-gallon UST was also located in the tank farm area near the fuel pump house. The contents of this tank are not known. A 600-gallon and 2,500-gallon AST were located near Buildings 737 and 738. Their contents is not known (Weston, 1990). Drums containing waste oil and hydraulic oil were stored in Building 737 (HLA, 1991).

All of the ASTs and USTs at POL Hill have been removed. The 840,000-gallon AST (AST 2), the twenty 25,000-gallon USTs, the 750-gallon UST and the 25,000-gallon AST (formerly containing mogas and JP-4) were all removed by IT Corporation and Atlas Hydraulic in 1986. The 20,000-gallon AST that contained JP-4 jet fuel was later removed by IT Corporation in 1990, according to interviews with IT personnel. The 600 and 2,500-gallon ASTs were removed prior to the construction of the groundwater treatment plant for Landfill 26. Additional details are provided in Section 4.2.3.

TABLE 4-2
List of Fuel Storage Tanks at POL Hill

Number of Tanks	Tank Type	Tank Size (gal)	Contents	Current Status
20	UST	25,000	JP-4 Jet Fuel	Removed 1986
1	AST	25,000	Mogas and JP-4 Jet Fuel	Removed 1986
1	AST	20,000	JP-4 Jet Fuel	Removed 1990
1	UST	750	Not Known	Removed 1986
1	AST	840,000	JP-4 Jet Fuel	Removed 1986
1	AST	600	Historical drawings indicate contents may have been diesel fuel. Reported to be empty in 1990 (Weston, 1990)	Removed prior to construction of LF 26 treatment plant
1	AST	2,500	Historical drawings indicate contents may have been diesel fuel. Reported to be empty in 1990 (Weston 1990)	Removed prior to construction of LF 26 treatment plant

As described in Section 4.2.2, petroleum products were released to soil and groundwater at POL Hill. Remediation activities are described in Section 4.2.3.

4.2.2 Petroleum Release

4.2.2.1 Hospital Hill

During the tank removal activities at Hospital Hill, confirmation sampling was performed to identify the nature and extent of contamination resulting from the storage and use of USTs at Buildings 510 and 521. Details from the tank removal activities and soil and groundwater sampling activities are summarized below.

Confirmation sampling indicated the presence of extractable and purgeable TPH at concentrations above the General Services Administration Phase I residential cleanup goals. However, soil excavation activities were conducted to remove all overlying impacted soils and continued until refusal, due to encountering competent bedrock (IT, 2000).

Although confirmation soil sampling yielded no TPH levels of concern in soil at Building 521, one groundwater sample was collected from the bottom of the excavation. Analysis of this sample indicated that diesel fuel may be present in groundwater. Therefore, three temporary groundwater wells were installed downslope of the Building 521 UST excavation to collect additional groundwater samples to further assess the presence or absence of TPH in the groundwater.

Soil sampling at Building 510 indicated the presence of extractable and purgeable total petroleum hydrocarbons (TPH) at concentrations above the General Services Administration (GSA) Phase I residential cleanup goals (RCGs). Even though water was not encountered at the Building 510 site, three temporary groundwater wells were installed and sampled downslope of the Building 510 UST excavation.

Six groundwater samples were collected from the Building 510 and 521 monitoring wells in March 1998 and analyzed for TPH-extractable, TPH-purgeable lead, and benzene, toluene, ethylbenzene, and xylenes. None of the groundwater samples yielded detectable concentrations of these analytes, with the exception of four detections of unknown extractable hydrocarbons (i.e., TPH-extractable). All four detections (two at Building 510 and two at Building 521) were qualified as estimated values. IT Corporation concluded that the groundwater beneath Hospital Hill was not impacted by leakage from the USTs since these detections were below the GSA Phase I cleanup goal of 1.2 ppm (IT, 2000).

4.2.2.2 POL Hill

Between 1985 and 1993, extensive soil and groundwater investigations were conducted at POL Hill. These investigations are summarized below. The primary references for the information provided below are ESI, 1993; HLA, 1991; IT, 1991; IT,1987; IT, 1997a, b; IT, 1999a; RWQCB, 2000; Woodward Clyde, 1995a, b; Weston, 1990.

In 1985, Woodward-Clyde Consultants conducted soil and groundwater investigation sampling prior to removal of any tanks at POL Hill. Eleven monitoring wells were installed in the down gradient location of the tank farm located on the lower bench of POL Hill. Analytical results indicated the presence of hydrocarbons in soil and groundwater beneath the location of AST 2 and in the downgradient vicinity of the tank farm.

In 1986, IT Corporation with Atlas Hydraulic Corporation removed twenty-one 25,000-gallon USTs from the tank farm, one 840,000-gallon AST (AST 2) from the upper bench of POL Hill, one 25,000-gallon AST from a location west of Building 717, and one 750-gallon UST from an area near the pump house. Details regarding removal activities are described in Section 4.2.1.1. Soil samples collected beneath the former tank locations following tank removals indicated the presence of volatile fuel hydrocarbon (vfh) beneath AST 2 and beneath the tank farm area. Groundwater samples collected from monitoring wells also indicated the presence of vfh contamination beneath former AST 2 and near the tank farm area.

In 1987, following the tank removals, IT continued its investigation of POL Hill to evaluate the extent of soil and groundwater contamination by excavating and sampling a series of expanding trenches. As a part of this investigation, IT excavated soil (to the physical extent possible) with TPH diesel concentrations greater than 1,000 ppm. Soil was excavated in the area of the former tank farm and its associated piping systems. According to the Weston Enhanced Preliminary Assessment (Weston, 1990), four of 27 soil samples collected in the AST 2 tank area following soil excavation activities indicated the presence of TPH at concentrations greater than 1,000 ppm. One of the four samples was collected from clay-filled materials in cracks of the fractured bedrock. The specific location of the other three samples exceeding TPH concentrations if 1,000 ppm was not specified. However, the report noted soil in the vicinity of these three samples was not removed prior to backfill with clean material. Interviews with IT personnel confirmed the information provided in the Weston report. The monitoring wells installed by Woodward-Clyde in 1985 were destroyed during the excavation of the former tank farm.

Between 1990 and 1991, IT again investigated areas in the vicinity of the former tank farm and AST 2 that had been identified with hydrocarbon concentrations in soil greater than 100 ppm, a newly established clean up level at that time. In the tank farm area trenches were again excavated and sampled to evaluate the vertical and horizontal extent of contamination. As a result of this investigation, soils with hydrocarbon contamination greater than 100 ppm were removed from the former tank farm on the lower bench of POL Hill. In addition, a 25,000-gallon AST, all the pipeline from the former AST 2 to the former tank farm, and concrete fuel islands were removed from the lower POL bench. The clean fill material placed at AST 2 (following tank removal in 1986) was also removed to expose native soil beneath the fill material. Soil sample locations previously documented with TPH concentrations greater than 100 ppm were then relocated and resampled. Two locations identified TPH concentrations greater than 100 ppm. These locations were excavated. The area was then backfilled to the original grade (IT, 1991).

In 1992, ESI conducted a groundwater sampling program. ESI installed 17 groundwater monitoring wells throughout the POL area. Shallow soil borings were also advanced and sampled to address specific areas of potential concern. The analytical results from the ESI investigation showed that excavations conducted by IT had effectively removed the fuel-contaminated soil and rock from the former tank farm on the lower bench of POL Hill. However, the investigation also showed that residual non-leaded fuel contamination remained at two locations: beneath AST 2, and along the downhill portion of the former pipeline that ran from AST 2 to the former tank farm. Beneath AST 2, TPH contamination was found in both the groundwater and unsaturated bedrock on the ridge beneath the former tank location. Beneath the gravity-fed fuel lines that formerly ran between AST 2 and the tank farm, elevated levels of TPH concentrations were found in the rock and groundwater along the pipeline alignment. The investigation report notes that TPH was only found in two of the seventeen groundwater samples collected (one beneath former AST 2 and one along the gravity-fed pipe line between AST 2 and the tank farm) (ESI 1993). A risk assessment indicated the site posed very low risk to public health for the current and future anticipated use of the site (ESI, 1993).

In response to comments from the regulatory agencies, USACE conducted a supplemental investigation in 1994. One new monitoring well was installed to evaluate potential

migration of contaminants downgradient of AST 2. As part of the supplemental investigation, six of the 17 groundwater monitoring wells previously installed were also sampled. The analytical results indicated that groundwater contamination had not migrated downgradient beyond the upper hillside bench where AST 2 had been located prior to its removal in 1986.

In October 1996, six new monitoring wells were installed by IT to improve the groundwater monitoring network coverage (IT, 1999a). These wells were first sampled in 1997 in conjunction with a groundwater monitoring program developed by USACE. As part of the comprehensive program, groundwater samples were collected from selected wells in February 1997, March / April 1998, September / October 1998, and January 1999 (IT, 1999a). The groundwater data collected during these sampling events continue to support the observations made in 1994 regarding the extent of contamination and, in fact, suggest the plume beneath AST 2 is shrinking. The results obtained between 1997 and 1999 indicated that TPH concentrations in groundwater are highest beneath the former location of AST 2 and decrease to below the residential cleanup goals within a short distance (approximately 100 feet). The TPH concentrations observed in the monitoring wells sampled appear to be gradually decreasing over time. These trends indicate that the concentrations and the size of the plume are declining and that natural attenuation is occurring (IT, 1999a).

During the construction of the groundwater treatment plant for Landfill 26, soil contamination was also detected at POL Hill in the vicinity of former buildings 736, 737, and 738 (the 600-gallon and 2,500-gallon ASTs were located in this general area). Soil samples were collected within and adjacent to the footprint of the planned treatment plant. Soil with hydrocarbon concentrations in excess of 100 ppm was removed within the footprint to the extent practical (i.e., to bedrock) (IT, 1999a). As part of a remedial investigation conducted by IT in 1996, five soil borings were advanced around the Landfill 26 groundwater treatment facility. The purpose of the borings was to evaluate the extent of petroleum hydrocarbon contamination that may have been left in place following removal of contaminated soil discovered during plant construction in 1993 (IT, 1999a). Soil samples were collected in each boring at approximately 2.5-foot intervals. With one exception, all soil sample results for TPH compounds in the borings were below 200 ppm. An unknown hydrocarbon was detected in one boring at 260 ppm at a depth of 2 feet. The sample from the next depth interval in the boring did not detect contamination (IT, 1999a).

The results of a human health and environmental risk assessment relating to POL Hill were presented in the Final Environmental Investigation Report (ESI, 1993). Based on the available information, POL Hill did not pose an unacceptable level of risk to either humans or ecological receptors. Remediation activities for POL Hill are discussed in Section 4.2.3.2.

In 1994, the Army selected natural attenuation and groundwater monitoring as a final remedy to address the residual contamination beneath former AST 2 and in the vicinity of the former gravity fed pipeline at the base of POL Hill. The Army submitted a closure report for POL Hill to the RWQCB in December 1999. The closure report documented the Army's selection of natural attenuation and monitoring as the final remedy. The Army is currently preparing a Closure Report for the tank farm area documenting that no further action is needed in this area. The Army is also preparing a Corrective Action plan documenting monitored natural attenuation as the selected remedy for the former AST 2 area. No

remedial activities were deemed necessary for the area or soil excavated prior to the construction of the Landfill 26 groundwater treatment plant.

4.2.3 Petroleum Remediation

4.2.3.1 Hospital Hill

The following remedial investigation activities were conducted at Hospital Hill (IT, 2000):

- Condemned Buildings 510, 511, 512, 521, and 525
- Demolished Buildings 510 and 521 (Building 511 was demolished by the New Hamilton Partnership)
- Performed exploratory trenching and soils sampling at Buildings 512, 515, and 520, which confirmed the absence of underground storage tanks (USTs). Only trenching was conducted at Building 511, which confirmed the absence of a UST
- Excavated and removed USTs at Buildings 510 and 521
- Each UST investigation included:
  - Potholing to evaluate the extent of potential TPH contamination
  - Removal of a wooden 750-gallon UST and associated piping
  - Sampling the soils beneath and in the vicinity of the removed UST
  - Removal of the soils identified as contaminated, approximately 960 cy
  - Confirmation soil sampling following soil removal
  - Backfilling excavation with clean soil
- Assessed east and west portions of the main sanitary sewer line (SS line) on Hospital Hill for impact
- Collected and analyzed
  - Soil samples at Buildings 510 and 521 to evaluate the extent of potential chemicals of concern in subsurface soils
  - A water sample from an open trench at Building 521
  - A whole rock sample at the base of the excavation at Building 521
  - A sediment sample from the east SS line downgradient of Building 520
- Installed six temporary groundwater monitoring wells (three each at Building 510 and Building 521), collecting and analyzing one groundwater sample from each monitoring well
- Removed 12 transformers at Buildings 510 and 515
  - Transformer liquid samples collected
  - Visual inspections to identify leaking transformers and oil staining
  - Containment pad cleaning at Buildings 510 and 515
  - Wipe samples at each containment pad at Buildings 510 and 515

– Removal, transport off site, and disposal of transformers

These activities were conducted to meet the scope of the remedial investigation, and to aid in the closure of the site. On August 18, 2000, the RWQCB issued a closure letter providing concurrence that no further action related to the underground storage tank releases at Building 510 and 521 was required.

4.2.3.2 POL Hill

In conjunction with the investigation activities conducted at POL Hill between 1985 and 1993, extensive remedial activities were also conducted. Many of the remedial activities conducted at POL Hill are described above as part of the site investigation discussion. However, a summary of remedial actions is provided below.

In 1986, IT Corporation with Atlas Hydraulic Corporation removed twenty-one 25,000-gallon USTs from the tank farm, one 840,000-gallon AST (AST 2) from the upper bench of POL Hill, one 25,000-gallon AST from a location west of Building 717, and one 750-gallon UST from an area near the pump house. At this time, IT also removed most of the associated fuel lines, pumping systems and associated equipment from the tank farm area. Before removing the tanks, IT removed the water control pit, the water separator house (Building 717) and the concrete vaults and piping located above the twenty underground tanks.

During investigative trenching and sampling activities in 1987, IT removed all soil containing hydrocarbon in excess of 1,000 ppm (the established cleanup level at the time). Soil with TPH concentrations greater than 1,000 ppm was removed from the former tank farm area and from the former location of AST 2. As described in Section 4.2.2.2 some soil with TPH concentrations above 1,000 ppm was left in place in the vicinity of AST 2. Approximately 13,000 cubic yards of contaminated soil were excavated and removed to a Class I landfill and approximately 4,000 cubic yards were aerated and re-used as non-contaminated backfill (IT, 1997b). Additional piping, fuel islands, and concrete structures were also removed.

In 1991, IT conducted further remediation and excavated soil with hydrocarbon concentrations in excess of 100 ppm from the former tank farm area and AST 2. At this time, IT removed approximately 24,000 cubic yards of contaminated soil and replaced the soil with clean borrow material (ESI, 1993). IT also removed a former water sump and the active 20,000-gallon JP-4 fuel tank at this time. The excavated areas were backfilled with clean fill.

The drums labeled waste oil and hydraulic oil, and waste solvent in Building 737 and the 600-gallon AST and 2,500-gallon AST observed in the vicinity of former buildings 736, 737 and 738 (Weston 1990, HLA 1991) were removed from the POL area prior to construction of the Landfill 26 groundwater treatment plant. No documentation was found during the preparation of the EBS to track the specific removal of the drums or tanks. However, none of these items was observed during the EBS site visit and interviews confirmed these items were not present at the time the treatment plant was constructed. The 1990 Weston report notes that drums that had accumulated in the POL area were removed on an annual basis by a contract administered by the Presidio of San Francisco (Weston, 1990).

As described in Section 4.2.2.2, petroleum (hydrocarbon) contamination was detected in soil in the vicinity of former buildings 736, 737, and 738 during the construction of the groundwater treatment plant for Landfill 26. Soil samples were collected along a grid system surrounding the footprint of the treatment plant. Soil with hydrocarbon concentrations in excess of 100 ppm was removed to the extent practical (i.e. to bedrock). Subsequent soil boring samples indicated contamination was not a concern.

4.2.4 Hazardous Substances Use and Storage

4.2.4.1 Hospital Hill

The CERFA Report (Earth Tech., 1994) suggests that medical supplies such as alcohol, acetone, peroxide, active acid, and disinfectants and cleaners were probably stored in all of the buildings at Hospital Hill. No records were available to document the quantities or specific type of substances stored. There is no documentation of hazardous substance disposal release at Hospital Hill.

4.2.4.2 POL Hill

Drums labeled waste oil, hydraulic oil and waste solvent were observed in Building 737 by HLA in 1991 (HLA, 1991). HLA reported the drums appeared empty. HLA also reported an 8-inch concrete berm and 12-inch “spill trench” were located around the perimeter of the drum storage area (HLA, 1991). Three cylinder type transformers were also located in the drum storage area. The transformers had been placed in metal or plastic containers (HLA, 1991). Four drums labeled as containing PCBs were located in a closed portion of Building 737 (HLA, 1991).

Transformers that had been located in the soil remediation area at POL Hill were removed and stored in the Building 737 garage prior to the demolition of the building. (Woodward-Clyde, 1995a). The containers present at Building 737 were removed by a hazardous waste disposal company prior to demolition (Woodward-Clyde, 1995a). There is no documentation of releases or spills of hazardous substances from POL Hill.

4.2.5 Hazardous Substances Release

4.2.5.1 Hospital Hill

No hazardous substance releases are known to have occurred at Hospital Hill.

4.2.5.2 POL Hill

No hazardous substance releases are known to have occurred at POL Hill.

4.2.6 Hazardous Substances Remediation

4.2.6.1 Hospital Hill

No hazardous substance remediation occurred at Hospital Hill.

4.2.6.1 POL Hill

No hazardous substance remediation occurred at POL Hill.

4.3 Adjacent or Surrounding Property Sources

VSIs were conducted for the adjacent properties surrounding Hospital Hill and POL Hill on September 7, 2000. These observations included both those properties immediately adjacent to the Hospital Hill and POL Hill fencelines and properties beyond the adjacent property parcels. These inspections were performed to identify sources of contamination that might have migrated or could migrate and impact Hospital Hill or POL Hill. Pertinent information obtained through the VSIs is also included in this EBS where appropriate.

4.3.1 Visual Site Inspection Findings

4.3.1.1 Hospital Hill

Hospital Hill lies within the uplands portion of HAAF, west of the General Services Administration Sale Area and former Outparcel A-2 (Figure 1-1). Today, residential housing and commercial facilities have been constructed north of Hospital Hill on property that has been previously transferred. A recreational area consisting of an open park and an amphitheater are present east of Hospital Hill. Base Housing is located to the south of Hospital Hill and is currently occupied by the Coast Guard. Administrative office buildings lie to the west of Hospital Hill.

4.3.1.2 POL Hill

POL Hill is located on the northern end of Reservoir Hill. Historically POL Hill was bordered by the main runway to the east and northeast, the jet engine test facility and open space to the south east, open space to the south and south west, and Landfill 26 to the north and northwest. Today the surrounding land use is similar, however, residential housing developments have been (or are being) constructed southwest and northeast of POL Hill on property that has been previously transferred. In addition, the jet engine test facility was completely removed and remediated to make room for the new residences.

4.3.2 Record Search Findings

As a part of this EBS, a records search using electronic database services provided by VISTA was conducted. The search encompassed an area located within a 4.0-mile radius around a point located centrally between Hospital Hill and POL Hill at HAAF. A complete listing of the records searched by VISTA is summarized in Section 2.2. The databases searched by VISTA that identified potential areas of environmental concern within a 1.0-mile radius from Hospital Hill and POL Hill are listed below.

- US EPA CERCLIS / NFRAP (Comprehensive Environmental Response, Compensation and Liability Information System / No Further Remedial Action Planned) List,
- SWLF (Solid Waste Inventory System),
- SPILLS identified by ERNS (Emergency Response Notification System),
- State of California Leaking Underground Storage Tanks (LUST),
- GNRTR (Generator) identified as a RCRIS-SQG (Resource Conservation and Recovery Information System – Small Quantity Generators), and

- State of California Registered Underground Storage Tanks (UST).

The potential areas of environmental concern identified by the database search are listed in Table 4-3. A summary of the VISTA report is provided in Appendix B.

TABLE 4-3
Potential Areas of Environmental Concern Identified by Records Review

Site	Address	Environmental Concern	VISTA Map ID[1]	Location[2]
Hamilton Air Force Base	Hamilton Air Force Base	CERCLIS/ NFRAP	1	Within 1.0 mile of Hospital Hill and POL Hill
Hamilton Air Force Base	Hamilton Air Force Base, Landfill #26	SWLF	1	Within 1.0 mile of Hospital Hill and POL Hill
Hamilton Air Force Base	Hamilton Air Force Base	SPILLS	1	Within 1.0 mile of Hospital Hill and POL Hill
Morrison Imports	5498 Redwood Highway	LUST	2	Within 1.0 mile of Hospital Hill and POL Hill
Cal Trans Materials Lab, District 4	5440 Redwood Highway	GNRTR	2	Within 1.0 mile of Hospital Hill and POL Hill
Super 7	5778 Redwood Highway	LUST	3	Within 1.0 mile of Hospital Hill and POL Hill
Chevron	5810 Redwood Highway	LUST	3	Within 1.0 mile of Hospital Hill and POL Hill
Shell Station	5821 Redwood Highway	GNRTR	3	Within 1.0 mile of Hospital Hill and POL Hill
Country Club Shell	5821 Nave	LUST/UST	3	Within 1.0 mile of Hospital Hill and POL Hill
Frank's Dry Cleaners	526 Alameda Del Prado	GNRTR	3	Within 1.0 mile of Hospital Hill and POL Hill
Pacific Bell C/O Allen UUC135	350 Alameda Del Prado	GNRTR	5	Within 1.0 mile of Hospital Hill and POL Hill
Pacific Bell (WC-135)	350 Alameda Del Prado	UST	5	Within 1.0 mile of Hospital Hill and POL Hill

[1] See Appendix B
[2] Based on VISTA Report (September 19, 2000)

A summary of the VISTA report for information on HAAF is provided below. Information regarding other sites located within 1 mile of Hospital Hill and POL Hill is provided in Appendix B. A review of the VISTA report indicates that none of the other sites is likely to have an adverse impact on the environmental conditions of Hospital Hill or POL Hill. These sites are not likely to affect Hospital Hill or POL Hill due to either limited nature and extent of contamination at the sites, the general nature of activities at the sites, and/or the distance between these sites and Hospital Hill and POL Hill.

The VISTA report indicated that HAAF was listed on the U.S. Environmental Protection Agency (US EPA) CERCLIS NFRAP list. The CERCLIS database is a comprehensive listing of known or suspected hazardous waste sites. These sites have either been investigated or

are currently being investigated by EPA. Sites on the CERCLIS NFRAP (No Further Remedial Action Planned) list have been removed from the CERCLIS database because no contamination was found, contamination was not serious enough to require federal Superfund action, or the contamination was removed quickly. The VISTA report shows HAAF is not on the National Priorities List (NPL). The report also identifies the presence of Landfill 26, a solid waste disposal facility and lists the landfill status as closed, un-permitted and unlicensed. The VISTA report also shows a spill was reported of possible diesel oil at HAAF in January 1988. The location of the spill was not reported. No other details are available in the report.

Based on the land use surrounding POL Hill, Landfill 26 is the only potential area of concern with respect to the potential presence and migration of contaminants to POL Hill. Landfill 26 was closed in 1995 following a Record of Decision (ROD) signed in August 1989. Based on the ROD and a 1992 Explanation of Significant Differences (ESD) a modified remedy consisting of a RCRA-type landfill cap was designed and constructed. Extensive data are available from Landfill 26 from a broad range of studies and investigations performed since 1995. Groundwater has been monitored at the landfill since 1993 in accordance with RWQCB waste discharge requirements. Concentrations and groundwater elevation trends are well established for the landfill. Contaminant concentrations in groundwater have not varied significantly since 1993. Previous investigations concluded that Landfill 26 had an impact on groundwater and, possibly surface water and sediment, but that these impacts were not found outside the Landfill 26 boundary. (CH2M HILL, 1999). Because the impacts to groundwater and potentially surface water and sediments are limited to the boundary of the landfill, Landfill 26 is not likely to have an adverse impact on POL Hill.

4.4 Disclosure of Non-CERCLA Issues

This section discloses the non-CERCLA environmental hazard and safety issues identified during the records review and / or visual site inspection.

4.4.1 Asbestos

4.4.1.1 Hospital Hill

The presence of asbestos-containing material in the Hospital Hill buildings was identified in asbestos surveys conducted at Buildings 510, 511, 512, 515, 520, 521, and 525 in 1998 and 1991 (Occusafe, 1989 and HLA, 1991a, b). Building 516 was not surveyed; however, there was no visual evidence of asbestos-containing materials (ACM) in this building (HLA, 1991a). The asbestos materials were removed from buildings 510, 511, and 521 as part of the building demolition process (ITSI, 1998) (Table 4-4).

4.4.1.2 POL Hill

In 1989 Occusafe conducted an asbestos survey of building 736, 737 and 738 (Occusafe, 1989). In 1991 Harding Lawson and Associates (HLA) conducted an additional investigation of asbestos at Buildings 736, 737, and 738 (HLA 1991b).

Building 715 was surveyed during UST removal activities conducted by IT Corporation. The asbestos materials were removed from these buildings as part of the building demolition process. No asbestos was identified in Building 737 (Table 4-5). No asbestos is known to be present in the groundwater treatment facility, which was constructed in 1993.

TABLE 4-4
Asbestos Findings at Hospital Hill

Building	Built Prior to 1985	Survey Results	Building Status	Notes
Hospital Hill				
510	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp. (Innovative Technical Solutions, Inc., 1998). Building debris transported to non-hazardous landfill for disposal in Class II asbestos cell (ITSI, 1998).
511	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by New Hamilton Partners.
512	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding, floor tile, hot water tank insulation, fireproof wallboard, and duct tape. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
515	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: pipe and pipe fitting insulation, floor tile, baseboard, and walk-in cooler. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
516	✓	Was not surveyed	Present	No visual evidence of suspect ACM (HLA, 1991a)
520	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding, pipe and pipe fitting insulation, floor tile, cement wallboard, boiler insulation, and cement exhaust flue and spackling. Occusafe reported the condition of ACM found in this building ranged from non-friable to moderately friable.
521	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp. (Innovative Technical Solutions, Inc., 1998). Building debris transported to non-hazardous landfill for disposal in Class II asbestos cell (ITSI, 1998).
525	✓	Contains asbestos	Present	Occusafe and HLA identified the following suspect ACM: exterior cement siding. Occusafe reported the condition of ACM found in this building ranged from non-friable to low friability.

TABLE 4-5
Asbestos Findings at POL Hill

Building	Built Prior to 1985	Survey Results	Building Status	Notes
POL Hill				
715	✓	Contained asbestos	Demolished	Asbestos removed prior to building demolition by IT Corp.
717	✓	Not surveyed	Demolished	Building removed during POL Hill investigation and remediation by IT Corp.
736	✓	Contained asbestos	Demolished	Occusafe and HLA identified suspect ACM including insulation, flooring materials, adhesives, ceiling tile, sheetrock and roofing material. Occusafe reported the condition of ACM in this building ranged from non-friable to moderately friable. Building removed during Landfill 26 treatment plant construction.
737	✓	Did not contain asbestos	Demolished	Building removed during Landfill 26 treatment plant construction.
738	✓	Contained asbestos	Demolished	Occusafe and HLA identified suspect ACM including insulation, flooring materials, adhesives, ceiling tile, sheetrock and roofing material. Occusafe reported the condition of ACM in this building ranged from non-friable to low friability. Building removed during Landfill 26 treatment plant construction.
Landfill 26 Treatment Plant		Not surveyed	Existing	Built in 1993 – No asbestos

The findings of HLAs investigation for Buildings 736-738 are summarized below:

Building 736

Building 736 was a 1,496 square foot one-story cinderblock structure. In 1991, HLA identified suspect asbestos containing material (ACM) including floor tiles, insulation, ceiling tile, roof material, sheetrock etc. (HLA, 1991b). This building was removed during construction of the Landfill 26 groundwater treatment plant.

Building 737

Building 737 was an 800 square foot one story corrugated steel shed. In 1991, HLA observed the building was used to store 55-gallon drums of petroleum products. No suspected ACM was identified in this building by HLA. (HLA, 1991b).

Building 738

Building 738 was a 2,596 square fool one-story cinderblock structure. In 1991, HLA observed this building was a maintenance garage. HLA identified possible ACM including, pipe insulation, floor tile, and tank insulation. (HLA, 1991b).

4.4.2 Lead-Based Paint

No survey for the presence of a lead-based paint has been conducted at Hospital Hill or POL Hill. Based on the Hamilton Army Airfield real property inventory, all the buildings on BRAC property were constructed prior to 1978. For the purposes of this EBS, structures built prior to 1978 are considered to have the potential for the presence of lead-based paint. (Table 4-6). The building age of structures in BRAC property was determined from the Real Estate Inventory and other documents.

TABLE 4-6
Lead-Based Paint Potential

Building	Built Prior to 1978	Building Status	Notes
Hospital Hill			
510	✓	Demolished	Building demolished by IT.
511	✓	Demolished	Building demolished by the New Hamilton Partners.
512	✓	Present	
515	✓	Present	
516	✓	Present	
520	✓	Present	
521	✓	Demolished	Building demolished by IT.
525	✓	Present	
POL Hill			
715	✓	Demolished	All buildings have been demolished
717	✓	Demolished	All buildings have been demolished
736	✓	Demolished	All buildings have been demolished
737	✓	Demolished	All buildings have been demolished
738	✓	Demolished	All buildings have been demolished
LF 26 Treatment Plant		Existing	Constructed in 1993 – no lead-based paint

4.4.3 PCBs

4.4.3.1 Hospital Hill

Until 1995, 16 transformers, nine at building 510 and seven are building 515, were present at Hospital Hill. In 1995 three transformers in Building 515 (G2, G3, and G4) were removed and replaced with new transformers also labeled as G2, G3, and G4 (Richmond, 1994). In 1997, Building 510 was demolished and all transformers were removed (IT,2000). Today, seven transformers remain at Building 515.

During a transformer investigation conducted in 1994, capacities and PCB concentrations were determined for the transformers at Buildings 510 and 515 (Richmond, 1994). These results are summarized in Table 4-7.

TABLE 4-7
Transformers Identified at Hospital Hill

Transformer	Estimated Volume (gallons)	PCB Concentration (ppm)	Date Transformer Removed
Building 510			
E2	14	<2	September 22, 1995
E3	14	<2	September 22, 1995
E4	14	<2	September 22, 1995
E5	35	<2	September 23, 1995
E6	35	<2	1997, building demolition date
E7	35	<2	1997, building demolition date
E8	16	<2	1997, building demolition date
E9	16	<2	1997, building demolition date
F1	16	<2	1997, building demolition date
Building 515			
G2	13	196	September 14, 1995
G3	14	125	September 14, 1995
G4	14	589	September 14, 1995
G2 replacement	Not known	<1	Still present
G3 replacement	Not known	<1	Still present
G4 replacement	Not known	<1	Still present
G5	Not known	<2	Still present
G6	Not known	5.39	Still present
G7	Not known	5.05	Still present
G8	Not known	4	Still present

The 1994 Transformer Investigation also determined whether additional evaluation was required for each transformer based on the following criteria (Richmond, 1994):

a. A PCB concentration of 500 ppm, or greater, remove the transformer.

b. A PCB concentration of 50 ppm, or greater, but less than 500 and the transformer is leaking, remove the transformer.

c. A PCB concentration of 50 ppm, or greater, but less than 500 and the transformer is not leaking, no further action.

d. A PCB concentration less than 50 ppm, whether the transformer is leaking or not, no further action.

Based on these criteria and the scheduled demolition of Building 510, all transformers were removed from Building 510.

The 1994 Investigation indicated the concrete beneath transformers G2, G3, and G4 in Building 515 was stained, showing evidence of past leakage. Based on the above criteria, transformers G2, G3, and G4 were removed. The four remaining transformers required no further action according to criteria "d". Three transformers, G2, G3, and G4, in Building 515 were replaced because this building was still required for use, and it was policy to replace transformers that were showing signs of leakage.

All suspected stains on the transformer pads were cleaned and were then tested for PCBs. The results of the pad testing indicated that no further cleaning and/or disposal of the transformer pads was necessary. In addition, no surface work or soil excavation was necessary.

4.4.3.2 POL Hill

Building 737 was reported to contain empty drums labeled PCBs as well as transformers (Corlett Skaer & Devoto, 1992) (HLA, 1991b). Transformers from the soil remediation area at POL Hill were temporarily stored in Building 737 prior to its demolition.

Seven transformers (B7, B8, B9, C1, C2, C3 AND H9) and six electrical switches were removed from the POL Hill area under a Presidio of San Francisco contract prior to the construction of the new waste water treatment plant. The new construction removed "all evidence" of the transformers and switches except for transformer H9. Transformer H9 was located on a concrete slab within a fenced enclosure. There was no evidence of leakage from the transformer (Richmond, 1994).

As part of the VSI for this EBS, visual inspection was conducted to assess the condition of the transformer (H9) located in the fenced area on the ridge to the south of the former tank farm at POL Hill. Three cells that could have been step down transformer banks were visible inside the transformer box. Each cell had windings of cloth. The transformer was observed to be dry (i.e. no cooling oil). The transformer is located on a pad that appeared to be subject footings for a former light standard.

In 1991 Harding Lawson and Associates (HLA) conducted an investigation of PCBs, at Buildings 736, 737, and 738 (HLA 1991). The findings of this investigation are summarized below:

Building 736

In 1991, HLA noted that none of the light ballasts in the building was labeled non-PCB. No other electrical equipment or PCB issues were identified by HLA (HLA, 1991b). This building was removed during construction of the groundwater treatment plant for Landfill 26.

Building 737

No light ballasts or other suspect electrical equipment observed. Forty 55-gallon drums labeled hydraulic oil, waste oil, waste solvent, and other drums not labeled were observed in the building by HLA; all appeared empty. Three cylinder type transformers were observed in the building also. They had been placed in metal or plastic containers. Four 55-gallon drums labeled as containing PCBs were observed. The area in which the

containers were located was bermed with 8-inch concrete berm and 12-inch spill trench. This building was removed during construction of the Landfill 26 groundwater treatment plant. The containers in the building were removed prior to its demolition. There is no documentation to indicate releases of PCBs from this area.

Building 738

In 1991, HLA noted that none of light ballasts in Building 738 were labeled non PCB. HLA noted some may contain PCBs however, none were leaking. No other suspect electrical equipment was identified by HLA. (HLA, 1991b). This building was removed during construction of the Landfill 26 groundwater treatment plant.

4.4.4 Radon

A radon survey has not been conducted on Hamilton Army Airfield BRAC property. The CERFA Report indicates interviews with the Environmental Investigation contractor, a review of applicable environmental documents, and adjacent property radon survey results indicate that radon is not a concern at HAAF (Tetra Tech., 1994). Test data and survey results for the adjacent Navy property (housing) indicated radon below USEPA recommended action levels; information provided by U.S. Geologic Survey representatives indicate that radon is not found in the region due to the geology of the area. Therefore, the CERFA Report concluded radon is not considered to be an environmental concern at Hamilton Army Airfield (Tetra Tech., 1994).

4.4.5 Ordnance

There are no records or evidence of unexploded ordnance at Hospital Hill or POL Hill.

4.4.6 Radionuclides

4.4.6.1 Hospital Hill

Although, Building 515 is currently vacant, medical clinic facilities were formerly located in this building. Clinic personnel used a Kodak RP X-0 Mat Model x-ray machine located in the basement. No radioactive parts are associated with the x-ray machine and it is not considered a radionuclide source.

Records indicate that radioactive commodities were used in Building 515 (basement of the Nuclear Biological and Chemical [NBC] Room and in a safe on the first floor). The commodities were identified as Chemical Agent Alarm Detectors, which contain an americium-241 source, tritium compasses and tritium watches. There is very low potential that radiological contamination resulted from their use and storage. All commodities were transferred with their assigned units (U.S. Army Center for Health Promotion and Preventative Medicine, 1995a).

A survey was conducted at Building 515 to verify whether or not residual radioactivity remained after cessation of activities (i.e. the use and storage of radioactive materials) at the hospital Building 515, and if so, whether that residual is in compliance with the Nuclear Regulatory Commission and the State of California regulations and guidelines for decontamination of facilities prior to release for unrestricted use. A review of the survey results indicated that there were no radiological health hazards identified as a result of the use and storage of radioactive commodities in Building 515. The survey recommended that

Building 515 of Hamilton Army Airfield be released for unrestricted use (U.S. Army Center for Health Promotion and Preventive Medicine, 1995).

4.4.6.2 POL Hill

No activities relating to the storage or use of radionuclides are known to have occurred at POL Hill.

4.4.7 Surface Water and Storm Water Issues

Stormwater pumping facilities at Hamilton Army Airfield are still operating; however, none of the pumping facilities are associated with Hospital Hill. A series of drainage channels, levees, and three stormwater pump stations (located on the east side of Hamilton Army Airfield between Perimeter Road and the east levee) remove runoff and groundwater seepage from Hamilton Army Airfield and discharge the stormwater into San Pablo Bay.

The same system that services the airfield portion of the BRAC property, the POL Area, Hospital Hill, Parcels A2 and A3 BRAC properties also provides drainage for the hangar and building complex on the General Services Administration sale parcel, Landfill 26 on the General Services Administration Sale Property and the U.S. Coast Guard parcel (Earth Tech., 1994).

4.4.7.1 Hospital Hill

The Hospital Hill property is in an area that is hydrogeologically active. Soils in the area are sandy and gravelly loams that tend to have a higher hydraulic conductivity than relatively impermeable Bay Mud. However, the Hospital Hill area is located on a minor topographic high. Surface water flow would follow the local surface topography in the area, subsequently flowing away from Hospital Hill property and flowing downhill toward the east and northeast. Drainage of the Hospital Hill BRAC property is via sheet flow to storm catch basins along the hospital access road and along Escolta Avenue.

There are two drop inlets and a storm water line upstream (on the hill) which connect to a manhole and are currently in use. There are drop inlets at the bottom of the parking lot in front of the former hospital (Building 515). The steep gradient of this line flushes the manhole as observed with the sanitary sewer line (IT, 2000).

4.4.7.2 POL Hill

A drainage ditch just outside the northwestern boundary of POL Hill collects groundwater seepage and runoff water that flows northward across the northern portion of the POL Hill area. The ditch originates from the area immediately to the east of POL Hill and drains westward under Aberdeen Road and into the main HAAF perimeter drainage system (Woodward-Clyde, 1995a).

4.4.8 Sanitary Sewer System

The installation sewage treatment plant was located on the east side of Hamilton Army Airfield between Perimeter Road and the east levee. The outfall pipe from the sewage treatment plant extended approximately 600 feet eastward from the levee into the tidal wetlands. The former sewage treatment plant provided primary and secondary treatment of installation generated sewage in aboveground concrete tanks. The former sewage treatment

plant operated until November 1986, after which time all Hamilton Army Airfield sanitary wastes were pumped to the Novato Sanitation District. The plant was demolished in 1987 (Earth Tech., 1994).

4.4.8.1 Hospital Hill

During a screening-level investigation by PRC Environmental in 1996, one sediment sample from the east sanitary sewer line was collected from material attached to a root ball found along the southeastern perimeter of Hospital Hill, downgradient of Building 520. The sediment was collected and analyzed for metals, polychlorinated biphenyls, and TPH measured as extractable and purgeable. Analytical results identified only metals and indicated that no concentrations exceeded the USEPA residential preliminary remediation goals. No sediment was found in the manholes along the sanitary sewer line on the west side of Hospital Hill (IT 2000).

Minimal sediment accumulates in the manholes due to the steep gradient of the lines coming off the hill. The west line, which serviced the main hospital building, is not currently in use (it has been plugged with concrete at the manhole near the toe of the west hill) and any trace of sediment from Base activities 30 years ago are not present. Therefore, the sanitary sewer lines are not believed to be a source of contamination at Hospital Hill (IT, 2000).

4.4.8.2 POL Hill

No sewer services are present at POL Hill. The groundwater treatment plant for Landfill 26 has a self-contained system.

4.4.9 Waste Management

4.4.9.1 Solid Waste Management

No solid waste management activities are known to have occurred at Hospital Hill or POL Hill. Landfill 26, the former installation sanitary landfill, is located approximately 2,000 feet north west of Hospital Hill, adjacent to the southwest of POL Hill between Ammo Hill and Reservoir Hill. The landfill is located in the General Services Administration Phase II sale parcel. Wastes historically generated at Hamilton Army Airfield and disposed onsite included trash and garbage, and construction debris. The landfill has ceased operation and is currently being monitored by the U.S. Army Corps of Engineers. See Section 4.3.2 for discussion of Landfill 26.

4.4.9.2 Mixed Waste

No information was obtained that would indicate that mixed waste was generated or disposed of at Hospital Hill or POL Hill.

4.4 9.3 Medical/Biological Waste

Medical and dental wastes generated at the Hamilton facilities were properly disposed. There was no medical waste incinerator at the installation. The exact off-site disposal method for medical waste from Hamilton was not identified (Earth Tech., 1994).

4.4.10 RCRA Facilities/SWMUs

Hospital Hill and POL Hill have no existing environmental management plans and practices addressing RCRA Facilities / Solid Waste Management Units (SWMUs), permits, and program elements. Hospital Hill and POL Hill have no RCRA-permitted facilities or SWMUs.

5.0 CERFA Letter Report

5.1 Executive Summary

This letter report presents the results of the Community Environmental Response Facilitation Act (CERFA) investigation conducted for the Hospital Hill and POL Hill portions of the Hamilton Army Airfield (HAAF), a U.S. Government property selected for closure in 1993 by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. Under CERFA (Public Law 102-246), Federal agencies are required to expeditiously identify real property that can be immediately reused and redeveloped. Satisfying this objective requires the identification of real property where no hazardous substances or petroleum products regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) were stored for 1 year or more, or known to have been released or disposed.

Information in this letter report was obtained during the preparation of the Environmental Baseline Survey (EBS) for the Hospital Hill and POL Hill BRAC parcels at HAAF and was current as of December 2000. This information was used to divide the parcels into one of seven categories. These categories, with results of the categorization process are presented in Table 5-1.

TABLE 5-1
DoD Environmental Condition Categories

Category	Definition	BRAC Parcel
1	Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).	
2	Areas where only release or disposal of petroleum products has occurred.	1-Hospital Hill 2-POL Hill
3	Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.	
4	Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.	
BRAC Parcels in the following DoD categories are not currently suitable for transfer:		
5	Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.	
6	Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.	
7	Areas that are not evaluated or require additional evaluation.	

Areas or activities that related to disclosure-related environmental or safety issues, including asbestos, lead-based paint, PCB, UXO, and radon issues, have also been identified within the BRAC Parcels.

This letter report contains a figure that summarizes the categorization of the parcels on the basis of the seven DoD categories listed in Table 5-1. This report should be read only in conjunction with the complete EBS report for these parcels. The EBS report provides the relevant environmental history to substantiate the parcel categorization. This report does not address other property transfer requirements that may be applicable under the National Environmental Policy Act (NEPA), nor does it address natural resource considerations such as the threat to plant or animal life.

5.2 Summary of Findings

Property categorization factors are hazardous substances or conditions that, if present, may pose a threat to human health or the environment. These substances or conditions include, but are not limited to, hazardous substances as defined in CERCLA Section 101(14) and petroleum substances. The categorization factors can be classified into three general groups: Storage and Use; Release; and Disposal. In addition to property categorization factors, this document examines facility disclosure factors, also referred to as non-CERCLA issues. Facility disclosure factors are hazardous substances or petroleum substances that do not pose a threat to the well being of the human community and environment if properly managed and maintained. They are not used in determining the DoD Category, but are considered in determining whether a parcel is suitable for transfer or lease. These items include asbestos, lead-based paints, PCBs, UXO, and radon.

The property classifications are illustrated in Figure 5-1, CERFA Map. The basis for the categorization process is presented in Table 5-2, CERFA Map Table. This table provides a brief summary of the key findings for each BRAC Parcel.

5.2.1 CERFA Uncontaminated Parcels

CERFA (CERFA Section 120(h))was enacted to facilitate the rapid return of uncontaminated properties identified during the BRAC process to the local communities. "Uncontaminated property" (as amended by the FY97 Defense Authorization Act) refers to real property where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). This definition includes BRAC parcels that were placed into Category 1.

As presented in Table 5-1, neither BRAC parcels 1 or 2 (Hospital Hill or POL Hill) are considered to satisfy these CERFA requirements for uncontaminated parcels.

5.2.2 Non-CERFA Parcels

Parcels within categories 1 through 4 are considered suitable for transfer by deed. Parcels in categories 5 through 7 can be transferred to another federal entity, but are not considered to be suitable for transfer by deed. Leases would be considered on a case-by-case basis for properties within all seven categories. Both Hospital Hill and POL Hill were assigned Category 2 and are considered suitable for transfer by deed. The acreages for each of the DoD categories are provided in Table 5-3, Acreage Summary Table. The non-CERFA uncontaminated parcels total approximately 11.25 acres.

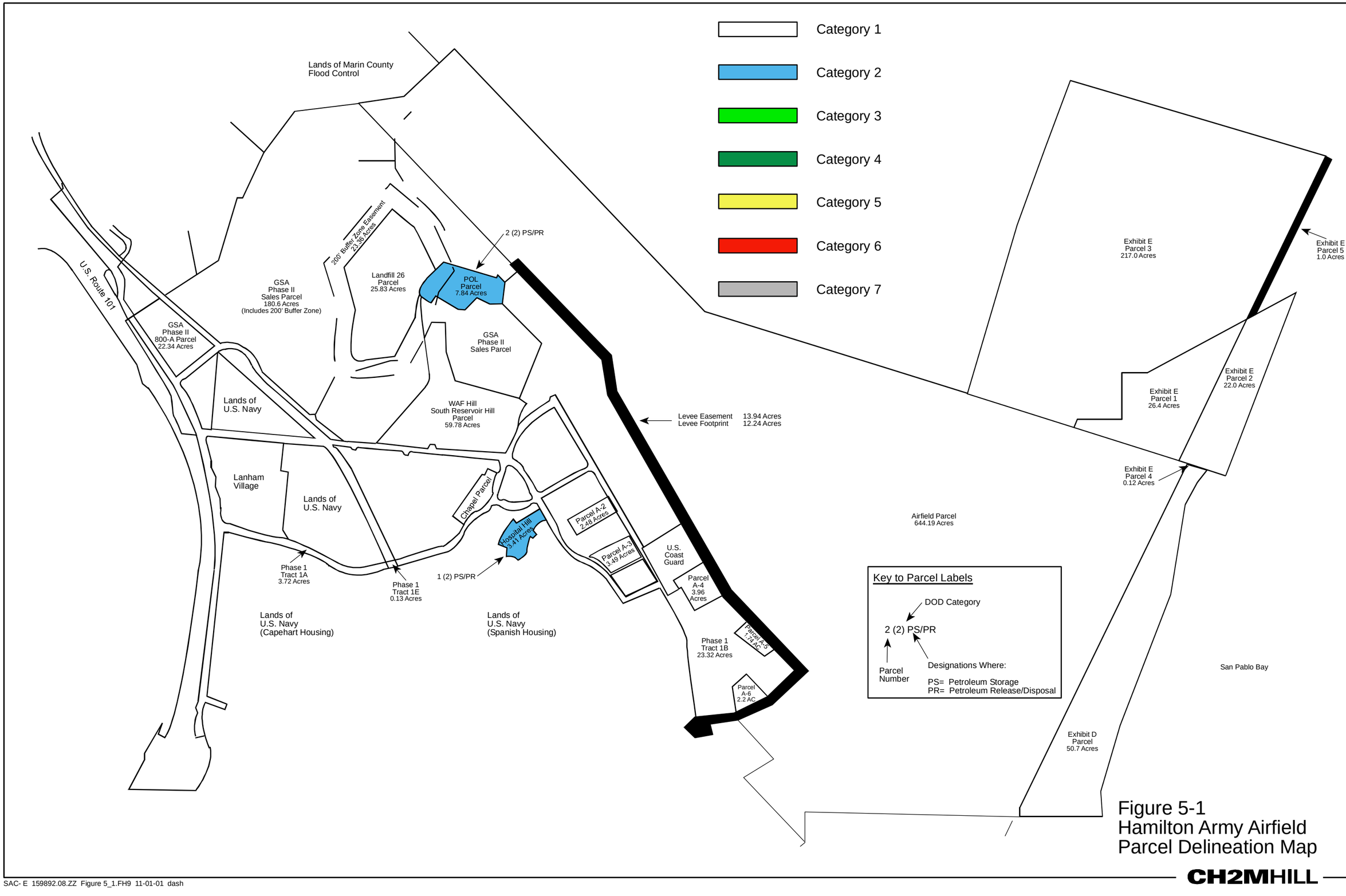

Figure 5-1
Hamilton Army Airfield
Parcel Delineation Map

CH2MHILL

TABLE 5-2
CERFA Map Summary

BRAC Parcel	Location	Parcel Size	DoD Category	Basis (Including Source Of Evidence And Reference)	EBS Source of Evidence	Remediation or Mitigation
1	Hospital Hill	3.41 acres	2	Building 510 and 521 were utilized as a medical/dental clinic and a dental prosthetic laboratory, respectively. Two 750-gallon diesel fuel USTs were identified, one at each building location. The UST at Building 510 was removed in April 1997, and the UST at Building 521 was removed in January 1997. Following removal activities, investigations indicated the presence of TPH in soils beneath each UST. Additional studies showed groundwater was not adversely impacted by TPH.	RWQCB, August 18, 2000 Woodward-Clyde, 1995b	Tanks and TPH contaminated soil have been removed. Approximately 960 cubic yards of TPH contaminated soil was removed at each UST location. No additional sampling or remediation is required. RWQCB has approved closure.
2	POL Hill	7.84 acres	2	POL Hill was used as the base fuel center from 1942 until some time prior to 1986. Numerous above ground and below ground storage tanks were formerly located in this area including: – One 750-gallon UST (contents not known) – Twenty 25,000-gallon JP-4 ASTs – One 840,000-gallon JP-4 AST – One 20,000-gallon JP-4 AST – One 25,000-gallon Mogas & JP-4 AST – One 600-gallon AST (diesel) – One 2,500-gallon AST (diesel) Investigations indicated the presence of TPH contamination in soil and groundwater. Some soil contamination remains; however, it is not physically possible to remove the contamination. Groundwater contamination is present beneath the former location of the 840,000-gallon JP-4 AST.	ESI, 1993 HLA, 1991 IT, 1987 IT, 1999a,b IT, 1997a,b Woodward-Clyde, 1995a	All of the ASTs, USTs and associated piping, pump stations, structures and equipment were removed between 1986 and 1993. To the extent physically possible, soil contaminated with TPH in excess of 100 ppm has been removed. The extent of TPH contamination in soil and groundwater is well characterized. No additional sampling is required. Groundwater monitoring allowing natural attenuation of TPH contaminants is the selected remedy for this location.

5.2.3 Disclosure Factors

As stated above, the disclosure factors are not used in categorizing the property. They are, however, important in determining whether or not reuse of a parcel would pose an adverse risk to human health or the environment. Therefore, these factors are important when considering whether the property is suitable for transfer or lease and the restrictions that might apply. Table 5-3 presents a summary of the presence (or absence) of these factors for Hospital Hill and POL Hill. In some cases, studies have not been performed addressing the factor. For example, comprehensive lead-based paint studies have not been performed. However, assumptions can be made as to the likely presence of these substances based on the age of the buildings. The use of lead-based paint was discontinued in 1977 so buildings constructed prior to 1978 are generally assumed to contain lead-based paint. When the factor is assumed to occur, it is so indicated in the table.

5.3 Data Gaps

Readily available information on the environmental condition of HAAF has been considered and documented in this EBS.

TABLE 5-3
Summary of Disclosure Factors

BRAC Parcel	DoD Category	Asbestos	Lead-based Paint	PCB	Radon	UXO	Radio-nuclides
1 (Hospital Hill)	2	/	P	/			/
2 (POL Hill)	2	/	P	/			

✓ material is, or has been, present
P presence is likely or was likely prior to building demolition
Radon is not present at HAAF
UXO is not present at Hospital Hill nor POL Hill

6.0 References

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APPENDIX A

List of Documents Reviewed

APPENDIX A

List of Documents Reviewed

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APPENDIX B

Summary of VISTA Report

Custom

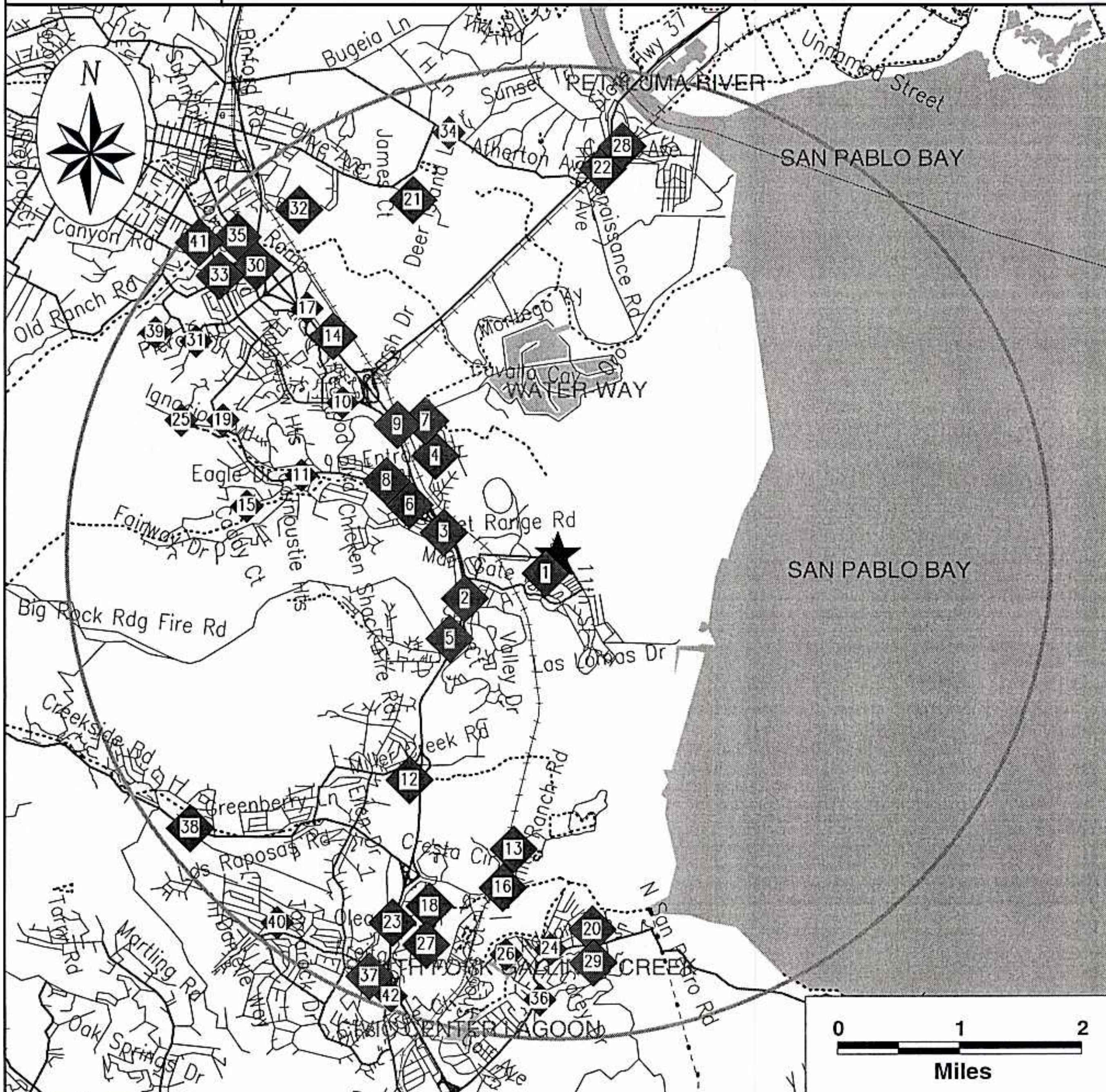
PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: Hamilton Army A State Access AND Hang* Novato, CA Latitude/Longitude: (38.059588, 122.515293)	Karen Parker 2485 Natomas Park Drive #600 Sacramento, CA 95833

Site Distribution Summary

Agency / Database - Type of Records			within 4 miles
A) Databases searched to 4 miles:			
US EPA	NPL	National Priority List	0
US EPA	CORRACTS	RCRA Corrective Actions	1
US EPA	RCRA-TSD	RCRA permitted treatment, storage, disposal facilities	0
STATE	SPL	State equivalent priority list	0
STATE	SCL	State equivalent CERCLIS list	4
US EPA	CERCLIS/ NFRAP	Sites under review by US EPA	4
STATE/ REG/CO	LUST	Leaking Underground Storage Tanks	63
STATE/ REG/CO	SWLF	Solid waste landfills, incinerators, or transfer stations	4
STATE/ CO	UST	Registered underground storage tanks	53
STATE	AST	Registered aboveground storage tanks	4
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	54
US EPA/ STATE	SPILLS	ERNS and state spills lists	19

Custom

Map of Sites within 4 miles



Subject Site ★

Category: A

Single Sites ◆

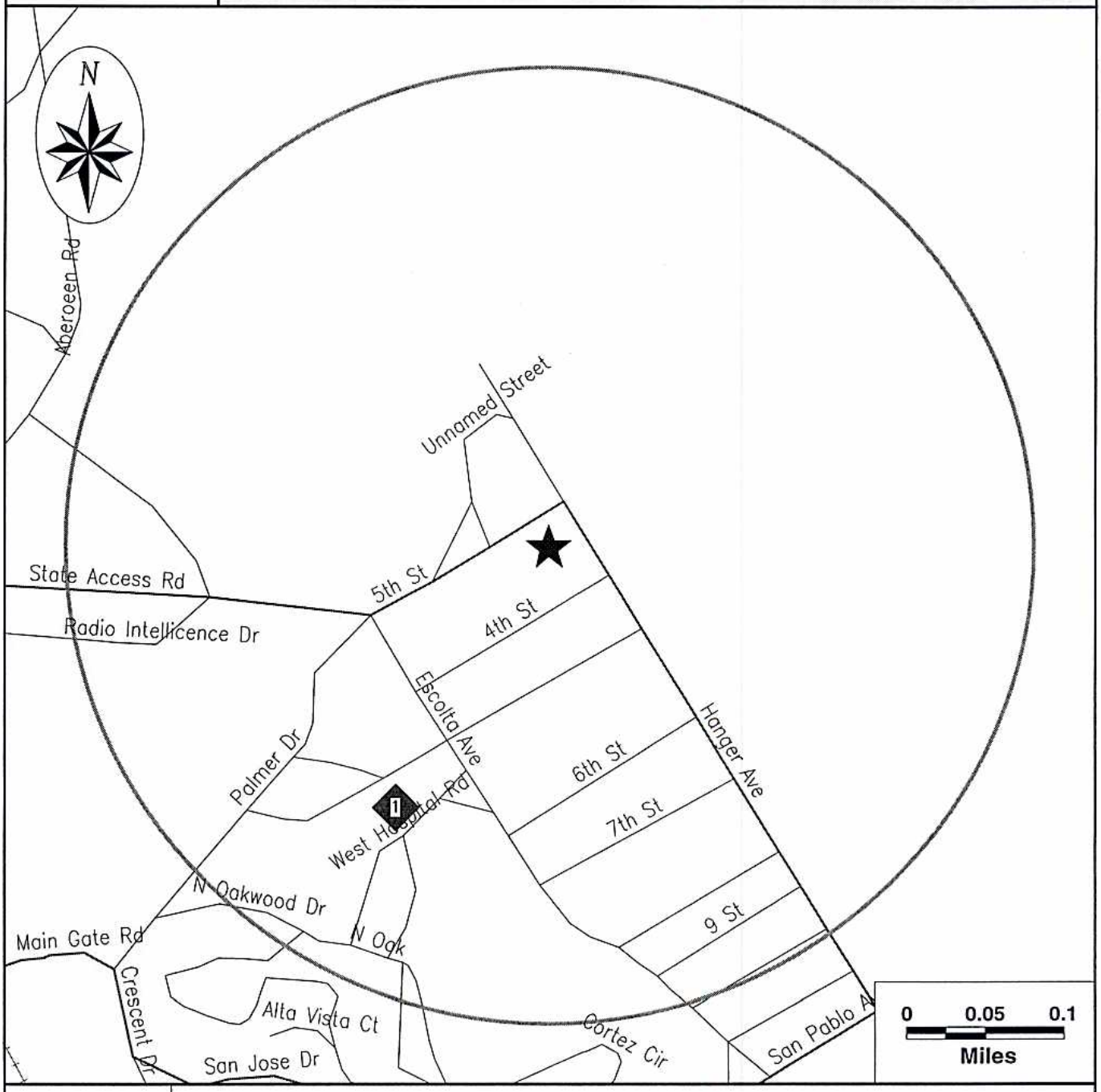
Multiple Sites ◆

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

Categories correspond to database searches described in the Site Distribution Summary, beginning on Page #1.

Custom

Map of Sites within 1/4 miles



Subject Site

Category: A

Single Sites

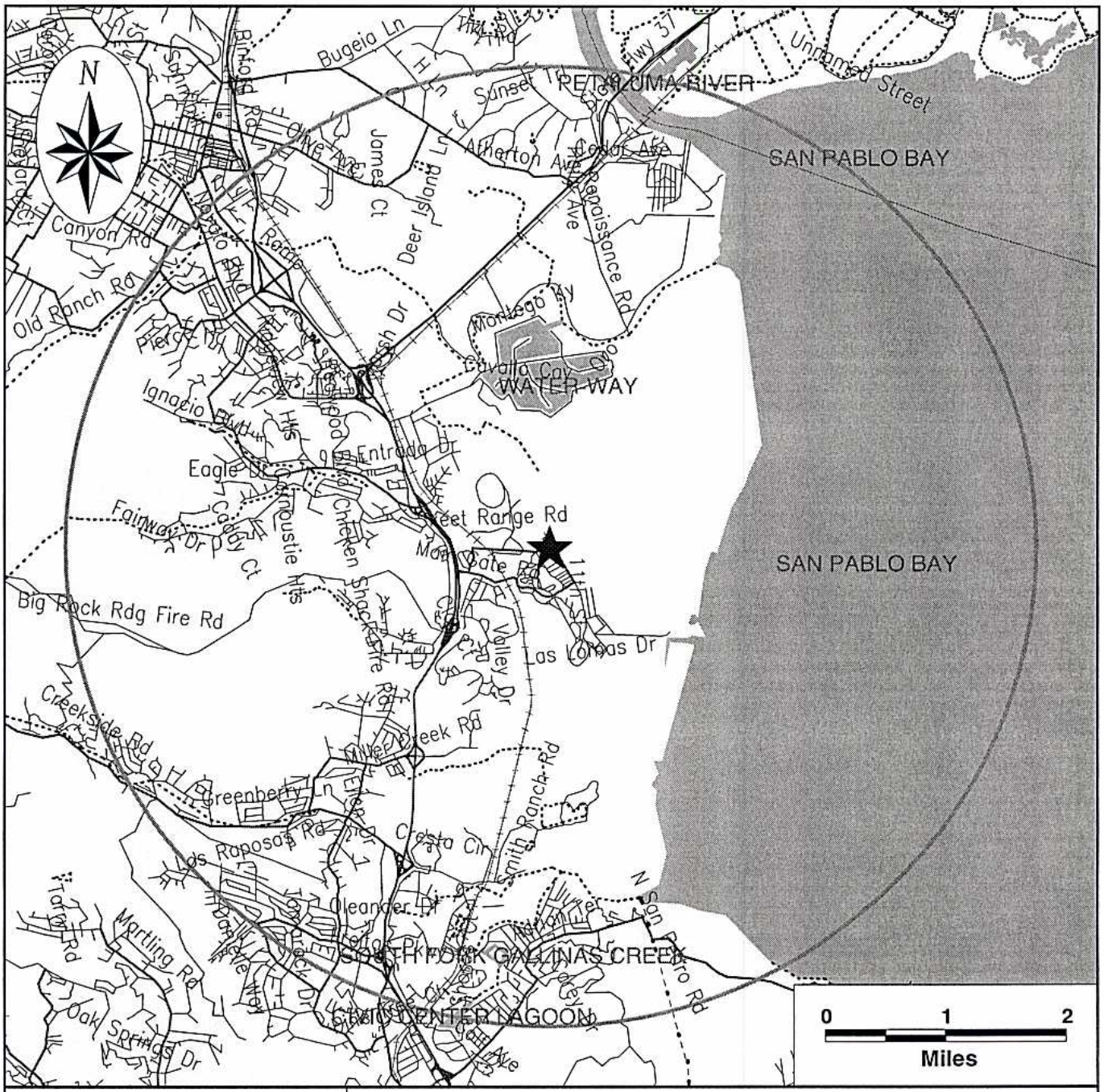
Multiple Sites

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

Categories correspond to database searches described in the Site Distribution Summary, beginning on Page #1.

Custom

Street Map

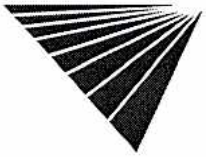


Custom

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A											
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
1	USAF HAMILTON AFB HAMILTON FLD NOVATO, CA 94949	185569 0.14 MI SW						X						
1	HAMILTON AFB LANDFILL #26 24 MI N OF GOLDEN GATE BR OFF SAN PA NOVATO, CA 94949	3890641 0.14 MI SW								X				
1	HAMILTON AFB NOVATO, CA 94949	8556332 0.14 MI SW												X
2	MORRISON IMPORTS 5498 REDWOOD HWY NOVATO, CA 94949	64608898 0.78 MI W							X					
2	CAL TRANS MATERIALS LAB DIST 4 5440 REDWOOD HWY NOVATO, CA 94949	73734 0.82 MI SW											X	
3	SUPER 7 5778 REDWOOD HWY NOVATO, CA 94949	932585 0.78 MI W							X					
3	CHEVRON 5810 REDWOOD NOVATO, CA 94949	932586 0.91 MI W							X					
3	SHELL STATION #204-3646-0107 5821 REDWOOD HWY NOVATO, CA 94949	377242 0.91 MI W											X	
3	COUNTRY CLUB SHELL 5821 NAVE NOVATO, CA 94949	1595141 0.94 MI W							X		X			
3	FRANKS DRY CLEANERS 526 ALAMEDA DEL PRADO NOVATO, CA 94949	159092 0.96 MI W											X	
4	GCX CORPORATION 32 PAMARON WAY NOVATO, CA 94949	8589868 1.05 MI NW												X
4	COMPUTER CNETER 5 COMMERCIAL NOVATO, CA 94949	4022814 1.13 MI NW									X			
4	WESTAMEICA 5 COMMERCIAL BLVD NOVATO, CA 94949	64601284 1.13 MI NW							X					

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
4	PACIFIC COLORS 31 G COMMERCIAL BLVD NOVATO, CA 94949	3196151 1.13 MI NW											X	
4	ESSEX POLYTECH INC 15-17 COMMERCIAL BLVD NOVATO, CA 94949	142690 1.13 MI NW											X	
4	14 COMMERCIAL BLVD. 14 COMMERCIAL BLVD. NOVATO, CA 94949	3867335 1.14 MI NW												X
4	BORSTING LABORATORIES INC 14 COMMERCIAL BLVD SUITE #105 NOVATO, CA 94949	54497 1.14 MI NW											X	
4	MARIN HUMANE SOCIETY 171 BEL MARIN KEYS NOVATO, CA 94949	1243591 1.16 MI NW							X		X			
4	LOGO PARIS 35 LEVERONI CT NOVATO, CA 94949	248534 1.20 MI NW											X	
4	INDUSTRIAL DEVICES CORP 73 DIGITAL DR NOVATO, CA 94949	3194590 1.22 MI NW											X	
4	MILLIGEN BIOSEARCH 81 DIGITAL DRIVE NOVATO, CA 94949	275625 1.22 MI NW											X	
4	COCA COLA NOVATO 265 BEL MARIN KEYS BLVD NOVATO, CA 94949	92296 1.23 MI NW							X				X	
4	UNKNOWN 46 DIGITAL NOVATO, CA 94949	8575686 1.23 MI NW												X
4	NORTH BAY DISTRIBUTION FACILIT 265 BEL MARIN KEYS NOVATO, CA 94949	3192596 1.23 MI NW									X			
4	WESCO LABORATORIES 14 GALLI DR SUITE A NOVATO, CA 94949	463997 1.24 MI NW											X	
4	COMPLETE AUTO BODY 14 GALLI DR SUITE 11 NOVATO, CA 94949	96481 1.24 MI NW											X	
4	COMMAIR MECHANICAL SERVICES CO 20 GALLI DR SUITE E NOVATO, CA 94949	1268833 1.25 MI NW											X	
4	KEN POTTER DATSUN REPAIR 19 R DIGITAL DR NOVATO, CA 94949	226639 1.25 MI NW						X						



MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
4	TRANSTECH ENTERPRISES 19 DIGITAL DRIVE SUITE M NOVATO, CA 94949	1600789 1.25 MI NW											X	
4	COOPER BROS INC 15 G DIGITAL DR NOVATO, CA 94949	101479 1.25 MI NW											X	
4	GORDON GRAPHICS 15 DIGITAL DR NOVATO, CA 94949	3194589 1.25 MI NW											X	
4	PACE LABORATORIES INC 11 DIGITAL DRIVE NOVATO, CA 94949	316338 1.25 MI NW											X	
4	TEGAL CORPORATION 11 DIGITAL DR NOVATO, CA 94949	419016 1.25 MI NW											X	
4	HARRIS DIGITAL TELEPHONE SYS 300 BEL MARIN KEYS BLVD NOVATO, CA 94949	188325 1.26 MI NW											X	
4	EUROPEAN PERFORMANCE 32 GALLI DR STE 6 AND 7 NOVATO, CA 94949	6509112 1.28 MI NW											X	
4	TILE WEST, INC. 11 HAMILTON NOVATO, CA 94949	1221002 1.32 MI NW							X		X			
4	UNKNOWN 19 HAMILTON DR NOVATO, CA 94949	2238960 1.34 MI NW												X
4	ROCK ISLAND FOODS 32A HAMILTON DR NOVATO, CA 94949	358119 1.35 MI NW											X	
4	DALES CARRIAGE WORKS 32D HAMILTON DR NOVATO, CA 94949	112396 1.35 MI NW											X	
4	JACKSON INDUSTRIES INC 49 HAMILTON DR NOVATO, CA 94949	213787 1.39 MI NW											X	
4	ROB'S AUTO BODY PAINT 74H HAMILTON DRIVE NOVATO, CA 94949	357540 1.43 MI NW											X	
4	EXCELSIOR AUTO 86F HAMILTON DR NOVATO, CA 94949	3196945 1.45 MI NW											X	
5	PACIFIC BELL C/O ALLEN UUC135 350 ALAMEDA DEL PRADO NOVATO, CA 94949	316107 1.09 MI SW											X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
5	PACIFIC BELL (WC-135) 350 ALAMEDA DEL PRADO NOVATO, CA 94949	1251981 1.09 MI SW									X			
6	CAR CARE CENTER 400 ENFRENTE NOVATO, CA 94949	4824653 1.17 MI W							X					
6	SHELL MINI MART 401 ENERENTE NOVATO, CA 94949	1261908 1.17 MI W									X			
6	SP OPER 401 ENFRENTE NOVATO, CA 94949	1260768 1.22 MI W									X			
6	SERVICE STATION UNOCAL 375 IGNACIO NOVATO, CA 94949	4030114 1.26 MI W									X			
6	JACK AND GREGS MOBIL 375 IGNACIO BLVD NOVATO, CA 94949	213354 1.26 MI W											X	X
6	UNOCAL 375 IGNACIO BLVD NOVATO, CA 94949	6848516 1.26 MI W							X					
6	NOVATO FIRE STATION #5 319 ENFRENTE NOVATO, CA 94947	5354434 1.28 MI W							X					
7	SUN-FLEX CO INC 20 PIMENTER CT NOVATO, CA 94947	405597 1.45 MI NW											X	
7	CHEMICAL DEVICES INC. #20 A PIMENTAL COURT NOVATO, CA 94947	78832 1.45 MI NW												X
7	OMNIGLOW CORP. 20-C PIMENTEL CT. NOVATO, CA 94949	4244408 1.46 MI NW					X						X	
7	CALIFORNIA SERVICE CENTER 13 PIMENTEL CT NOVATO, CA 94949	73403 1.47 MI NW											X	
7	396 BEL MARIN KEYS BLVD NOVATO, CA 94949	8571502 1.54 MI NW												X
7	ARA-TEX SERVICES 396 BEL MARIN KEYES NOVATO, CA 94947	4019802 1.55 MI NW									X			
7	IGNACIO TREATMENT PLANT 445 BEL MARIN KEYS NOVATO, CA 94949	1223393 1.56 MI NW									X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A											
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
8	PACIFIC BELL 405 ENTRADA DRIVE NOVATO, CA 94949	315327 1.47 MI W											X	
8	EXXON SERVICE STATION #7-92529 490 IGNACIO NOVATO, CA 94949	1223022 1.50 MI W							X		X			
9	MARIN PRODUCTS COMPANY INC 55 FROSTY LN NOVATO, CA 94947	12639674 1.64 MI NW							X					
9	MARIN PRODUCTS COMPANY INC 55 FROSTY LN IGNACIO, CA	5354675 1.65 MI NW							X					
9	MARIN PRODUCTS CO. INC. 55 FROSTY NOVATO, CA 94949	1219286 1.65 MI NW									X			
10	NOVATO FIRE STATION #2 999 NOVATO NOVATO, CA 94947	5356458 2.12 MI NW							X					
11	PACIFIC GAS ELECTRIC 980 IGNACIO BLVD NOVATO, CA 94949	2132423 2.16 MI W												X
12	CHEVRON #6922 100 MARINOOD SAN RAFAEL, CA 94903	1252444 2.19 MI SW							X		X			
12	UNOCAL 101 MARINWOOD AVE SAN RAFAEL, CA 94903	1176317 2.20 MI SW							X					
12	UNOCAL SERVICE STATION 101 MARINWOOD SAN RAFAEL, CA 94903	4034705 2.20 MI SW									X			
12	UNION OIL SS#4712 101 MARINWOOD SAN RAFAEL, CA 94903	1227682 2.20 MI SW									X			
13	LYLE REED STRIPING INC MARIN CO AIRPORT 379 SMITH RANCH RD SAN RAFAEL, CA 94903	11635231 2.38 MI S											X	
13	MCINNIS GOLF COURSE 350 SMITH RANCH RD SAN RAFAEL, CA 94903	5357895 2.50 MI S							X					
14	SHELL 125 VINTAGE WY NOVATO, CA 94945	64600355 2.46 MI NW							X					
14	TARGET STORE 200 VINTAGE WAY NOVATO, CA 94945	8598342 2.62 MI NW												X

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
15	MARIN GOLF COUNTRY CLUB 500 COUNTRY CLUB NOVATO, CA 94949	4023143 2.55 MI W									X			
16	LAS GALLINAS VALLEY 300 SMITH RANCH RD SAN RAFAEL, CA 94903	1596149 2.67 MI S							X					
16	LAS GALLINAS VLY SANITARY DIST 300 SMITH RANCH SAN RAFAEL, CA 94903	238756 2.67 MI S									X	X		X
16	SMITH RANCH ROAD LANDFILL (CLOSED) 280 SMITH RANCH ROAD SAN RAFAEL, CA 94903	1588206 2.78 MI S								X				
16	SMITH RANCH AIRPORT GAS SMITH RANCH RD. SAN RAFAEL, CA 94903	64507085 2.78 MI S										X		
16	CAPTAINS COVE SMITH RANCH RD GALLINA CREEK SAN RAFAEL, CA 94901	69362 2.86 MI S						X						
16	CAPTAINS COVE HOUSING DEVELOPMENT SMITH RANCH ROAD GALLINAS CREEK SAN RAFAEL, CA 94903	1593652 2.86 MI S					X			X				
17	COSTCO NO 141 300 VINTAGE WY NOVATO, CA 94945	5719433 2.86 MI NW											X	
18	ST. VINCENT'S SCHOOL 4900 REDWOOD HIGHWAY, SAN RAFAEL SAN RAFAEL, CA	6832077 2.90 MI SW								X				
18	UNKNOWN 53 WHARF CIRCLE SAN RAFAEL, CA 94903	2235617 2.98 MI S												X
18	MCLACHLIN PROPERTY 40 PAUL DR SAN RAFAEL, CA 94903	12640009 3.02 MI SW							X					
18	NORTHGATE AUTO BODY 40 PAUL DRIVE SAN RAFAEL, CA 94903	300612 3.02 MI SW											X	
18	MCLACHLIN PROPERTY 40 PAUL DR SAN RAFAEL, CA 94903	5431997 3.02 MI SW							X					
18	MULTI-TENANT WAREHOUSE 128 CARLOS SAN RAFAEL, CA 94903	4023449 3.04 MI SW									X			
18	JANET WILLIAMS TRUST 128 CARLOS DR SAN RAFAEL, CA 94903	3781274 3.04 MI SW							X					

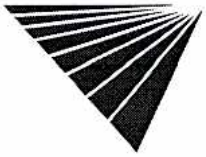
MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
18	RICH ELECTRIC 110 CARLOS DR SAN RAFAEL, CA 94903	12639574 3.05 MI SW							X					
18	RICH ELECTRIC 110 CARLOS DR SAN RAFAEL, CA 94903	3981960 3.05 MI SW							X					
18	MARINER DISTRIBUTING COMPANY 79 MITCHELL SAN RAFAEL, CA 94903	4035106 3.07 MI SW									X			
18	CHEVRON 69 MITCHELL BLVD SAN RAFAEL, CA 94903	932635 3.07 MI SW							X					
18	PARAGRAPHICS 131 MITCHELL BLVD SAN RAFAEL, CA 94903	319298 3.07 MI SW											X	
18	MEGACYCLE CAMS 90 MITCHELL BLVD SAN RAFAEL, CA 94903	3199850 3.07 MI SW											X	
18	ACME ALARM CO. INC. 128 MITCHELL SAN RAFAEL, CA 94903	3199851 3.09 MI SW							X		X			
18	MARINER DISTRIBUTING 110 PAUL DRIVE SAN RAFAEL, CA 94903	64604808 3.12 MI SW							X					
18	MARINER DISTRIBUTING 110 PAUL DR SAN RAFAEL, CA 94903	3200814 3.12 MI SW							X					
18	PACIFIC BELL 135 PAUL DR SAN RAFAEL, CA 94903	314892 3.14 MI SW											X	
18	MONTEREY IMPORT COMPANY 158 PAUL SAN RAFAEL, CA 94903	7433857 3.15 MI SW							X					
18	MONTEREY IMPORT COMPANY 158 PAUL DR SAN RAFAEL, CA 94903	4988530 3.15 MI SW							X					
18	BAY HISTOLOGY SERV INC 92 MARK DR SAN RAFAEL, CA 94903	40145 3.16 MI SW											X	
18	PACIFIC BELL 23 MARK DR SAN RAFAEL, CA 94903	315106 3.17 MI SW							X		X		X	
19	1644 MERRITT DRIVE NOVATO, CA 94949	11634838 2.93 MI W												X

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
20	MCPHAIL PUMP STATION 1580 VENDOLA SAN RAFAEL, CA 94903	1597088 3.05 MI S							X					
20	UNKNOWN 1050 ADRIAN WAY SAN RAFAEL, CA 94903	2124886 3.14 MI S												X
21	C.R. FEDRICK INC. (YARD) 320 DEER ISLAND NOVATO, CA 94945	4024442 3.11 MI NW									X			
21	CR FEDRICK INC 320 DEER ISLAND LN NOVATO, CA 94945	1257978 3.13 MI NW							X					
22	HOUSE OF DANIELS 12 HARBOR NOVATO, CA 94945	4012790 3.17 MI N									X			
22	HOUSE OF DANIELS 12 HARBOR DR NOVATO, CA 94947	1219205 3.17 MI N							X					
23	FIREMANS FUND INSURANCE CO 1600 LOS GAMOS SAN RAFAEL, CA 94903	151888 3.24 MI SW									X			
23	MARIN TECHNOLOGY SENTER 1600 LOS GAMOS DR SAN RAFAEL, CA 94903	64598764 3.24 MI SW							X					
23	MARIN TECHNOLOGY CENTER 1600 LOS GAMOS SAN RAFAEL, CA 94903	11647598 3.24 MI SW									X			
23	FAIRCHILD CAMERA INSTRUMENT 4300 REDWOOD HWY SAN RAFAEL, CA 94903	147438 3.34 MI SW		X			X	X					X	X
23	FAIRCHILD SEMICONDUCTOR 4300 REDWOOD RD SAN RAFAEL, CA 94903	64595947 3.34 MI SW							X					
23	TESTA PLUMBING, INC 4244 REDWOOD SAN RAFAEL, CA 94903	3201517 3.37 MI SW							X		X			
23	MARIN DIRT BUSTERS 4140 REDWOOD HWY SAN RAFAEL, CA 94903	258238 3.45 MI SW											X	
24	ADRIAN PUMP STATION 605 ADRIAN SAN RAFAEL, CA 94903	1591827 3.24 MI S							X					
25	INDIAN VALLEY COLLEGES 1800 IGNACIO NOVATO, CA 94949	1231611 3.25 MI W							X		X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A											
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
26	SANTA VENETIA PUMP STATION #3 79 VENDOLA (NEXT TO) SAN RAFAEL, CA 94903	4045432 3.32 MI S									X			
27	PACIFIC BELL W3053 7 PROFESSIONAL PARKWAY SAN RAFAEL, CA	12714231 3.36 MI SW									X			
27	PACIFIC BELL 7 PROFESSIONAL SAN RAFAEL, CA	7433922 3.36 MI SW							X					
27	PACIFIC BELL 7 PROFESSIONAL CENTER PARKWAY SAN RAFAEL, CA 94903	315506 3.43 MI SW							X		X		X	
28	KELLEHER LUMBER 10 GRANDVIEW NOVATO, CA 94945	4028487 3.37 MI N									X			
28	KELLEHER CORP 10 GRANDVIEW DR NOVATO, CA 94945	1262573 3.37 MI N							X					
28	SOUTHERN PACIFIC BLACK POINT BRIDGE UNKNOWN GRANDVIEW HARBOR NOVATO, CA 94945	64597642 3.37 MI N							X					
28	SOUTHERN PACIFIC BLACK POINT B UNKNOWN GRANDVIEW HARBOR NOVATO, CA 94947	64545241 3.37 MI N							X					
29	PACIFIC BELL W3084 2000 BAYHILLS SAN RAFAEL, CA 94903	12714047 3.37 MI S									X			
29	PACIFIC BELL 2000 BAYHILLS DRIVE SAN RAFAEL, CA 94903	315049 3.37 MI S									X		X	
30	IGNACIO SERV 5778 REDWOOD NOVATO, CA 94949	4039423 3.40 MI NW									X			
30	COUNTRY CLUBSHELL 5821 REDWOOD NOVATO, CA 94949	1215140 3.41 MI NW									X			
31	CHEVRON USA INC 22 ROWLAND NOVATO, CA 94947	4040682 3.42 MI NW									X			
32	GENERAL TELEPHONE 501 DAVIDSON NOVATO, CA 94945	3194862 3.48 MI NW									X			
32	GTE NOVATO PLANT YARD 501 DAVIDSON ST NOVATO, CA 94945	182333 3.48 MI NW							X					

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
32	NOVATO TREATMENT PLANT 500 DAVIDSON NOVATO, CA 94945	*1223392* *3.49 MI* *NW*									X			
32	NOVATO SANITARY DISTRICT 500 DAVIDSON STREET NOVATO, CA 94945	*302715* *3.49 MI* *NW*							X					
32	NOVATO CITY CORPORATION YARD 550 DAVIDSON STREET NOVATO, CA 94945	*302709* *3.60 MI* *NW*					X							
32	CITY OF NOVATO/MAINTENANCE DIV 550 DAVIDSON ST. NOVATO, CA 94945	*1252603* *3.60 MI* *NW*										X		
33	NOVATO SERVICE STATION SHELL 1390 S NOVATO NOVATO, CA 94947	*1176434* *3.49 MI* *NW*							X		X			
33	SEVEN TO SEVEN CLEANERS 1400 1432 NOVATO BLVD S NOVATO, CA 94947	*62430533* *3.58 MI* *NW*												X
33	MOBIL 1400 NOVATO NOVATO, CA 94947	*932609* *3.58 MI* *NW*							X					
33	NOVATO PROPERTIES 1432 S NOVATO BLVD NOVATO, CA 94947	*5264393* *3.65 MI* *NW*											X	
34	NOVATO FIRE DISTRICT TRAINING 450 ATHERTON NOVATO, CA 94945	*1240592* *3.56 MI* *N*									X			
35	NAVATO FORD 6995 REDWOOD BLVD NOVATO, CA 94945	*1215657* *3.58 MI* *NW*							X		X		X	
35	CIAMPI DISTRIBUTING 90 HILL RD NOVATO, CA 94947	*1229156* *3.61 MI* *NW*							X					
35	CIAMPI DISTRIBUTING COMPANY 90 HILL NOVATO, CA 94947	*4012816* *3.61 MI* *NW*									X			
35	CLOUDBURST CAR WASH 6981 REDWOOD NOVATO, CA 94945	*88863* *3.64 MI* *NW*							X		X			
35	NOVATO FIRE PROTECTION DIST 7025 REDWOOD BLVD NOVATO, CA 94947	*5356963* *3.75 MI* *NW*							X					
35	UNKNOWN 14 LAUREN AVE NOVATO, CA 94947	*8582302* *3.79 MI* *NW*												X

MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
35	MAC'S CLOTHING 7049 REDWOOD BLVD NOVATO, CA 94945	8591517 3.82 MI NW												X
36	SANTA VENETIA SERVICE 296 N SAN PEDRO SAN RAFAEL, CA 94903	3202990 3.67 MI S									X			
37	GATEWAY GAS 1005 NORTHGATE SAN RAFAEL, CA 94903	11647650 3.72 MI SW									X			
37	ARTS AUTO CARE 1005 NORTHGATE SAN RAFAEL, CA 94903	4036181 3.72 MI SW							X		X			
37	ART'S AUTO CARE 1005 NORTHGATE DR SAN RAFAEL, CA 94903	7858048 3.72 MI SW							X					
37	HOLIDAY INN 1010 NORTHGATE DR SAN RAFAEL, CA 94901	7291742 3.72 MI SW												X
37	NORTHGATE SHELL 950 DEL PRESIDIO SAN RAFAEL, CA 94903	377355 3.75 MI SW							X		X			
37	93553 CHEVRON 949 DEL PRESIDIO SAN RAFAEL, CA 94903	932624 3.75 MI SW							X		X			
37	EXXON SERVICE STATION 7-7067 930 DEL PRESIDIO SAN RAFAEL, CA 94903	1583911 3.76 MI SW							X		X			
37	UNOCAL 929 DEL PRESIDIO BLVD SAN RAFAEL, CA 94903	12639603 3.76 MI SW							X					
37	UNION OIL SS# 4774 929 DEL PRESIDIO SAN RAFAEL, CA 94903	1253585 3.76 MI SW									X			
37	UNOCAL 929 DEL PRESIDIO BLVD SAN RAFAEL, CA 94903	2745802 3.76 MI SW							X					
37	UNOCAL #4774 921 DEL PRESIDIO BLVD SAN RAFAEL, CA 94903	12714069 3.77 MI SW									X			
37	PAUL O SATHER RADIOLOGY OFFICE 750 LAS GALLINAS NO 101 SAN RAFAEL, CA 94903	3198457 3.79 MI SW											X	
37	PACIFIC BELL 820 LAS GALLINAS AVENUE SAN RAFAEL, CA 94903	315567 3.80 MI SW											X	



MAP ID	PROPERTY AND THE ADJACENT AREA (within 4 miles)	VISTA ID DISTANCE DIRECTION	A												
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	UST	AST	GNRTR	SPILLS
37	EXPRESSLY PORTRAITS INC 5600 NORTHGATE MALL SAN RAFAEL, CA 94903	*4062708* *3.89 MI* *SW*											X	
37	NORTHGATE MALL 5800 NORTHGATE MALL SAN RAFAEL, CA 94903	*300623* *3.89 MI* *SW*											X	
37	RITE AID CORP NO 5958 1500 NORTHGATE MALL SAN RAFAEL, CA 94903	*5356395* *3.89 MI* *SW*											X	
37	SEARS ROEBUCK CO 9000 NORTHGATE SAN RAFAEL, CA 94903	*1601171* *3.99 MI* *SW*											X	
37	JIFFY LUBE #1590 9000 NORTHGATE MALL SAN RAFAEL, CA 94903	*7240597* *3.99 MI* *SW*										X		
38	NUNES PROPERTY 1475 LUCAS VALLEY RD SAN RAFAEL, CA 94903	*64596848* *3.73 MI* *SW*							X					
38	EXXON SERVICE STATION NO 7-3015 1500 LUCAS VALLEY RD/MT LASSEN SAN RAFAEL, CA 94903	*1268004* *3.77 MI* *SW*											X	
39	VAILLANCOURT PAINTING 1 JACKSON COURT NOVATO, CA 94947	*12705909* *3.75 MI* *NW*											X	
40	CAVALERI COLLINGWOODS AUTOM 625 DEL GANADO SAN RAFAEL, CA 94903	*4024196* *3.80 MI* *SW*									X			
41	1521 HILL ROAD TULELAKE, CA 96134	*10824617* *3.89 MI* *NW*							X					
41	GTE CALIFORNIA INC 1500 NOVATO BLVD NOVATO, CA 94947	*64596591* *3.89 MI* *NW*							X					
42	KERNS WALKER CLEANERS 412 GALLINS AVE SAN RAFAEL, CA 94903	*227291* *3.89 MI* *SW*											X	

APPENDIX C

Real Estate Map HAAF 1948

Responses to Comments

Responses to Comments on the
POL Hill and Hospital Hill EBS and FOST, Hamilton Army Airfield
(January 2001)

No.	Comments	Responses
DTSC Comments June 26, 2001		
1.	EBS Section 1.1, *Background*, indicates "The Army has proposed no further action, allowing for natural attenuation of residual contamination at POL Hill." The text should be revised to clarify that natural attenuation is not the same as "no further action." Monitoring would also be needed in order to determine whether natural attenuation is successful.	The EBS has been revised to indicate the Army is in the process of preparing a closure report specifically for the tank farm area of POL Hill. Based on site conditions, the closure report will recommend no further action for the tank farm area. The EBS has also been revised to indicate the Army is in the process of preparing a Corrective Action Plan for the AST 2 area of POL Hill. Based on site conditions and available information, the Corrective Action plan will recommend natural attenuation and monitoring as the selected remedy for the AST 2 area.
2.	In January 2000, the Army submitted the Closure Report for POL Hill. On June 5, 2000, the RWQCB commented on the Closure Report, indicating quarterly sampling of the monitoring wells was needed to confirm whether natural attenuation is taking place. On February 15, 2001, the Army replied that no further monitoring was needed to determine whether natural attenuation was taking place, but that annual monitoring of the wells near AST-2 would be conducted. However, samples have not been collected from the wells since September 1998, suggesting that up-to-date information on the quality of the groundwater is lacking.	The Army and the RWQCB agree that the current information available is sufficient to demonstrate that monitored natural attenuation is a viable option at this site. The Army and the RWQCB have agreed on the monitoring requirements necessary to support this effort. No additional data collection beyond the agreed upon monitoring is anticipated for this site. The required monitoring will be documented in the Corrective Action Plan.
3.	Closure Report Figure 5-1 provides the results of monitoring for methane. The highest concentration of methane detected is 2.8 mg/L. This concentration could present a hazard in the event methane gas were to leave the groundwater and enter a structure. It is recommended gas control and monitoring systems be included in any structures on the site or adjacent properties that might be affected. Soil gas monitoring, including using a combustible gas indicator (CGI), should be conducted. California Code of Regulations, Title 8,	This highest concentration represents an extremely small total mass of methane. The concentrations drop off by orders of magnitude within 100 feet of this sample location and the methane is present in groundwater, which at this site is only located in the bedrock fractures. The Army believes that there is not sufficient total mass of methane to make the suggested scenario plausible. As the petroleum at this site degrades the methane concentrations will decline making this scenario even

No.	Comments	Responses
	Section 5416, *Flammable Vapors*, provides for ventilation of buildings and other enclosed spaces so that concentrations of flammable vapors do not exceed 25% of the lower explosive limit (LEL). Similarly, DTSC's standard health and safety protocol requires its employees to withdraw from areas containing concentrations greater than 10% of the LEL. It is recommended remedial action be implemented whenever the concentration of flammable vapors exceeds 10% of the LEL.	more unlikely in the future. DTSC's health and safety protocols are relevant to employee health and safety on the job. These standards are not promulgated as cleanup levels or thresholds for the initiation of remedial action. CCR Title 8 applies to proper ventilation of buildings; requirements for monitoring are not provided in this section. The groundwater treatment plant is the only existing building at POL Hill. This building is ventilated. It is assumed that any potential future buildings that may be constructed at POL Hill by future landowners would require building permits and would also be required to meet the ventilation provisions of this title.
4.	Knowledge of the geology and extent of contamination (both lateral and vertical) are key elements in determining whether natural attenuation is taking place. Information on these elements is incomplete.	The Army and the RWQCB agree that the current information available is sufficient to demonstrate that monitored natural attenuation is a viable option at this site. The Army and the RWQCB have agreed on the monitoring requirements necessary to support this effort. No additional data collection beyond the agreed upon monitoring is anticipated for this site. The required monitoring will be documented in the Corrective Action Plan.
5.	EBS Section 2.3, *Aerial Photographs*, indicates aerial photographs were not reviewed as part of the investigation, since aerial photographs were reviewed as part of the 1994 CERFA report. During a March 28, 2001 site visit, it appeared the recent housing construction activities may have encroached on the POL Hill property. Review of aerial photographs and comparison of the residential area land survey results to the POL Hill property boundaries is recommended.	The property boundaries were surveyed before the new housing construction activities began. The housing and construction activities adjacent to POL Hill do not encroach onto POL Hill property.
6.	EBS Figure 3-2, *Site Map: Hospital Hill*, includes a dashed line showing the Hospital Hill Parcel Boundary. This boundary line does not coincide with the *Boundary Plot, Hospital Parcel*, May 1996, contained in	The dashed line representing the Hospital Hill parcel boundary in Figure 3-2 has been removed. A more accurate

No.	Comments	Responses
	FOST Appendix A. Please revise EBS Figure 3-2 to include the survey information contained in FOST Appendix A.	line representing the approximate boundary of Hospital Hill has been inserted. The legal description and accompanying figure depicting the actual parcel boundary is included in the FOST.
7.	EBS Table 3-2, *List of Past and Present Structures at Hospital Hill*, lists buildings at Hospital Hill, their historical uses, and their current status. During a site visit on March 28, 2001, it was noted Building 525 was used for x-rays, based on the sign above the threshold to the northern room in Building 525. As previously discussed, the results of the investigation of this area for releases associated with this activity should be provided. It should also be noted Building 525 was not locked, and the doors to Buildings 512 and 520 were open. In addition, access to Building 515 could be obtained through an open window adjacent to an outdoor stairway on the south side of the building. As previously discussed, these buildings should be secured and monitored, as access presents a danger due to asbestos and other physical hazards. EBS Table 3-2 should be also revised to incorporate the above information.	Building 525 was not used for x-ray operations as assumed during DTSC's site visit. The signs located above the doorway thresholds in each room of this building are labeled as follows: a – "alpha", e- "echo", c- "charlie" and x- "x-ray". These are phonetic alphabet names and are not related to activities conducted in the rooms. It should be further noted that x-ray operations are not usually a radiological concern since radiological source material is not normally used. No change to the document is necessary.
8.	EBS Figure 3-3, *Site Map - POL Hill*, shows the property lines not closing, and not coinciding with the fence. This boundary line also does not coincide with the POL Hill property bounds shown in *Ammo Hill Parcel and 800-B Parcel Boundary Plot,* September 21, 1999, contained in FOST Appendix A. Please revise EBS Figure 3-3 to include the survey information included in FOST Appendix A. The property lines need to close, and the relationship of the property boundaries to the site fence should be clarified. The relationship of POL Hill to adjacent property features (roads, buildings, homes, etc), and EBS Figure 3-4, *POL Hill Tank Farm Area*, should also be provided in EBS Figure 3-3.	For the purposes of this EBS, the POL Hill parcel is defined to include land that is within the buffer zone of Landfill 26. However, the portion of land within the buffer zone will not be transferred as a part of POL Hill. The portion of POL Hill within the buffer zone will be retained by the Army until it can be transferred with the landfill at a later date. The legal boundaries for the impending transfer of POL Hill have been revised to exclude the land within the buffer zone. EBS Figure 3-3 has been revised to show both the approximate area of POL Hill included and evaluated in this EBS as well as the approximate boundaries of the portion of POL Hill proposed for transfer in the FOST. Also, EBS Figure 3-3, *Site Map – POL Hill* has been revised to close the boundary of POL Hill. However, please note that the fence line does not represent and has no correlation with the property boundary.

No.	Comments	Responses
9.	FOST Section 2, *Property Description*, indicates Buildings 737 and 738 were historically used as maintenance buildings. The nature of the maintenance, including the types of materials used in the buildings, the potential for releases, and other relevant information should be included in the FOST.	This information was available in the combined POL Hill and Hospital Hill FOST. The FOST followed the outline specified in guidance documents for preparing a FOST. The January 2001 FOST has subsequently been revised to separate POL/Hospital Hill parcels. The requested information will be presented in the FOST for POL Hill in accordance with guidance documents.
10.	FOST Section 2, *Property Description*, indicates the Army proposes to transfer the Landfill 26 Treatment Plant to the City of Novato. It is recommended that the Landfill 26 Treatment Plant, related facilities, and adjacent property remain with the Army, and use restricted to the purpose for which it is intended.	The portion of POL Hill that overlaps the Landfill 26 buffer zone is included in the EBS but will not be included in the transfer of POL Hill. The groundwater treatment plant is located entirely within the buffer zone. Therefore, the groundwater treatment plant will be transferred at a later date along with Landfill 26. The POL Hill FOST has been separated from the Hospital Hill FOST. This comment will be included by the Army into the final FOST for POL Hill.
11.	FOST Section 3.3.1, *Petroleum and Petroleum Products, Underground and Above-Ground Storage Tanks, POL Hill*, indicates TPH-contaminated soils up to 100 ppm were removed to the extent possible (down to bedrock) from the area of the former AST 2, and near former Buildings 736, 737, and 738. Comparison of this information to the monitoring results presented in FOST Exhibit B, Figure 2, *Monitoring Well Locations and TPH Concentrations in Groundwater*, January 1999, and EBS Figure 3-3 indicates no monitoring is taking place near former Buildings 736, 737, and 738. There is also no monitoring to the south of AST 2. A full understanding of the condition of the groundwater or soils can not be ascertained from the information provided.	There is no current monitoring in the area of Buildings 736, 737 and 738 since previous groundwater samples indicated no impacts. The Army and the RWQCB agree that the current information available for the AST-2 area is sufficient to demonstrate that monitored natural attenuation is a viable option at this site. The Army and the RWQCB have agreed on the monitoring requirements necessary to support this effort. No additional data collection beyond the agreed upon monitoring is anticipated for this site. The POL Hill FOST has been separated from the Hospital Hill FOST. This comment will be included by the Army into the final FOST for POL Hill.
12.	FOST Section 3.4, *Polychlorinated Biphenyls (PCB) Equipment*, indicates Building 737 contained forty 55-gallon drums labeled as containing hydraulic oil, waste oil, waste solvent, and other unlabeled drums. There were also four 55-gallon drums labeled as containing PCBs, and three transformers stored in metal or plastic containers. This information suggests the site was used for storage of hazardous	As stated in the FOST and EBS, the proper storage of hazardous materials was identified at this location. The materials were stored within the bermed area of the building. There are no reported spills or releases to the environment. Also, the July 3, 1998 letter from DTSC stated that only certain

No.	Comments	Responses
	wastes. Results of investigation for releases of these types of wastes should be incorporated into the FOST, and additional investigation conducted if necessary.	petroleum issues were a concern at POL Hill. The POL Hill FOST has been separated from the Hospital Hill FOST. This comment will be included by the Army into the final FOST for POL Hill.
13.	FOST Section 4.1, *Remediation: Hospital Hill*, refers to the RWQCB's August 18, 2000 letter as stating all remediation activities on the property have been taken. This overstates the content of the August 18 letter, which only pertains to the removal of the USTs and associated contamination.	The text has been revised to indicate that there were no CERCLA issues at the site and that the petroleum issues at the site that required remediation have been appropriately addressed. Per the DTSC July 3, 1998 letter regarding Hospital Hill – "…the only contamination found at this site was related to a leaking underground fuel tank." The letter goes on to state that "As petroleum hydrocarbons are not regulated as hazardous substances in the California Health and Safety Code, Division 20, Chapter 6.8, additional evaluation of this site should be conducted by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB)." Since the only contamination found on the site was petroleum hydrocarbons, the RWQCB closure of petroleum issues indicates that all remedial actions have been taken. The Hospital Hill FOST has been separated from the POL Hill FOST. These comments will be included by the Army into the final FOST for Hospital Hill.
14.	FOST Section 4.2, *Remediation: POL Hill*, indicates the chosen remedy is monitored natural attenuation (MNA). The data discussed in FOST Sections 3.3.1 and 4.2, and presented in FOST Exhibit B, Figure 2, *Monitoring Well Locations and TPH Concentrations in Groundwater*, January 1999, suggests the extent of contamination is unknown, and that the monitoring well network is not adequate to track the movement or occurrence of contamination. It is necessary to have a good understanding of this information in order to determine the viability and subsequent effectiveness of MNA. It would also be helpful if the report could be revised to consistently indicate the concentrations of TPH encountered in the groundwater. The text	The Army and the RWQCB agree that the existing monitoring wells are adequate and the current information available is sufficient to demonstrate that monitored natural attenuation is a viable option at this site. The Army and the RWQCB have agreed on the monitoring requirements necessary to support this effort. No additional data collection beyond the agreed upon monitoring is anticipated for this site. The required monitoring will be documented in the Corrective Action Plan. Figure 2 is correct in reporting concentrations in micrograms per liter (ug/L). The text will be corrected to report

No.	Comments	Responses
	indicates concentrations up to 9,700 ppm (parts per million) are present, while Figure 2 indicates concentrations up to 9,700 ug/L (parts per billion) are present. Discussion should be provided on the extent of contamination, its fate and transport, action levels, points of compliance, and contingency plans in the event MNA is found to be ineffective in order to support a MNA approach to site remediation.	micrograms per liter (ppb) and not ppm. The POL Hill FOST has been separated from the Hospital Hill FOST. This comment will be included by the Army into the final FOST for POL Hill. Discussion on TPH extent of contamination, fate and transport, action levels, points of compliance, and a contingency plan is not within the scope of a FOST. Only remedies that will be effective will be selected; therefore, there is no need for contingency plans. The items mentioned above will be addressed in the Corrective Action Plan for AST 2 currently being prepared by the Army.
15.	FOST Enclosure 2, *Description of Property*, indicates Hospital Hill is classified as CERFA Category 2. The PCB data in Enclosure 4 suggests there were PCB spills, which would classify Hospital Hill as CERFA Category 3, 4, 5, 6, or 7, depending on the severity and extent of contamination.	As stated in the PCB Transformer Closure Report and summarized in Enclosure 6 to the FOST: "Any PCB contamination spills related to such equipment [at Hospital Hill] has been properly remediated prior to conveyance (i.e., transformer pads were cleaned but did not require disposal) and no surface remediation/excavation was necessary. The PCB equipment does not currently pose a threat to human health or the environment." The recorded spills of PCBs at Hospital Hill were totally contained within the building and have been fully remediated. The spills did not result in releases to the environment. The Category 2 designation is appropriate at Hospital Hill since the only issues at the site are petroleum issues. The Hospital Hill FOST has been separated from the POL Hill FOST. These comments will be included by the Army into the final FOST for Hospital Hill.

No.	Comments	Responses
16.	FOST Enclosure 2, *Description of Property*, indicates POL Hill is classified as CERFA Category 2. As discussed above, FOST Section 3.4, *Polychlorinated Biphenyls (PCB) Equipment*, indicates Building 737 contained forty 55-gallon drums labeled as containing hydraulic oil, waste oil, waste solvent, and other unlabeled drums. There were also four 55-gallon drums labeled as containing PCBs, and three transformers stored in metal or plastic containers. This information suggests the site was used for storage of hazardous wastes, resulting in POL Hill being classified as CERFA Category 3, 4, 5, 6, or 7, depending on the severity and extent of contamination, if any.	As indicated in the FOST and EBS, the proper storage of hazardous materials was identified at this location. There were no reports of any PCB releases because the spills occurred within the building and did not result in a release to the environment; therefore it is not appropriate to classify POL Hill as a category 3, 4, 5, 6, or 7 because these categories require a release to the environment. Also, the July 3, 1998 letter from DTSC did not identify any releases other than petroleum, which is not defined as a hazardous substance. The POL Hill FOST has been separated from the Hospital Hill FOST. This comment will be included by the Army into the final FOST for POL Hill.
17.	FOST Enclosure 6, Section 9, *Notice of UXO Clearance*, indicates a file review was conducted to look for ordnance issues. The Army is currently conducting an Ordnance Archive Search Report for the entire installation, as outlined in DTSC's March 2, 2001 letter. The FOST and EBS should be revised to include this information.	The Army is not currently conducting an Ordnance Archive Search Report (ASR) for the entire installation as outlined in a DTSC letter to the FUDS program. The Army has conducted an ASR for BRAC property in response to the letter from a concerned citizen (Archives Search Report Findings Hamilton Army Airfield, September 2001). The ASR found no UXO issues at POL Hill or Hospital Hill. This is consistent with information that has already been reported. The Hospital Hill FOST has been separated from the POL Hill FOST. These comments will be included by the Army into the final FOST for Hospital Hill.
18.	FOST Enclosure 8, *POL Hill Groundwater Covenant*, contains the agreement to be executed between the Army, the RWQCB, and the DTSC. 1. Article I, Statement of Facts, Paragraph 2 of Section 1.02, makes reference to a remediation plan to implement MNA and an O&M plan which have not been provided to or	1. The Army is working with the RWQCB to implement a Monitored Natural Attenuation (MNA) remedy for POL Hill. The current plan was submitted to the RWQCB for review and concurrence. The first set of samples were collected in September 2001. On completion in 2002, the

No.	Comments	Responses
	approved by the RWQCB or DTSC. These are key components of the covenant, which would need to be prepared and approved prior to concurrence with the covenant. 2. Article I, Statement of Facts, Section 1.03: The first sentence of this section is unclear. 3. Article IV, Restrictions, Section 4.01(b): Construction dewatering of groundwater should be prohibited. 4. Article IV, Restrictions, Section 4.01(f and g): These provisions should be extended to a distance of 1000 feet from Landfill 26.	Army and RWQCB will determine what additional monitoring if any is required. 2. The first sentence has been clarified by correcting a typo. The word "were" was changed to "where". 3. Section 1.02 has been modified to indicate construction dewatering would have to be coordinated with the appropriate agencies. However, the Army does not believe construction dewatering should be prohibited; therefore, no change to Section 4.01 is necessary. 4. The provisions stated in Article IV are explicit to the landfill buffer zone. They are derived from the Closure Post Closure Monitoring Plan for the landfill and are not related to concerns at POL Hill. Because the property to be transferred for POL Hill now excludes the buffer zone for Landfill 26, restrictions "f" and "g" in Section 4.01 have been removed from the FOST. The POL Hill FOST has been separated from the Hospital Hill FOST. These comments will be included by the Army into the final FOST for POL Hill.