DEPARTMENT OF THE ARMY
BASE REALIGNMENT AND CLOSURE
ATLANTA FIELD OFFICE
BRAC ENVIRONMENTAL COORDINATOR
HAMILTON ARMY AIRFIELD
1 BURMA ROAD
NOVATO, CALIFORNIA 94949

May 26, 2005

DAIM-BO-A-HA

Subject: Forwarding the draft final *Work Plan Revetments 19, 21, 22, and 26 Remedial Action for Hamilton Army Airfield; Novato, CA.*

Ms. Naomi Feger
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Dear Ms. Feger,

The Army is pleased to provide the draft final *Work Plan Revetments 19, 21, 22, and 26 Remedial Action for Hamilton Army Airfield; Novato, CA* for your review.

This document is submitted in accordance with Board Order No. R2-2003-0076 Site Cleanup Requirements (SCR) – Hamilton Army Airfield. The four revetments included in this sampling effort are being remediated in accordance with Alternative 2 in the *Record of Decision/ Remedial Action Plan, Hamilton Army Airfield* (Army, RWQCB, DTSC, August 2003).

This document is being submitted to the RWQCB in accordance with SCR provision C8. It is also being distributed in accordance with SCR provision C9 for information.

I request your comments by June 23, 2005. If you have any questions, please contact me at (415) 883-6386.

Sincerely,

Edward Keller, P.E.
BRAC Environmental Coordinator
Hamilton Army Airfield

Enclosure

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Hamilton Army Airfield, Novato, CA 94949
May 2005

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DRAFT FINAL WORK PLAN

REVETMENTS 19, 21, 22, and 26

REMEDIAL ACTION
FOR
HAMILTON ARMY AIRFIELD
NOVATO, CALIFORNIA

May 23, 2005

Prepared by:
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Base Realignment and Closure Office

WORK PLAN
REVETMENTS 19, 21, 22, and 26
REMEDIAL ACTION

FOR
HAMILTON ARMY AIRFIELD
NOVATO, CALIFORNIA

Draft Final
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Prepared by:
U.S. Army Corps of Engineers
Sacramento District
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LIST OF ACRONYMS

BRAC	Base Realignment and Closure Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DTSC	Department of Toxic Substances Control
DoD	Department of Defense
HAAF	Hamilton Army Airfield
PAH	Polynuclear Aromatic Hydrocarbons
ROD/RAP	Record Of Decision/Remedial Action Plan
RWQCB	Regional Water Quality Control Board
SCR	Site Cleanup Requirement
SHSP	Site Health and Safety Plan
TPH	Total Petroleum Hydrocarbon
USACE	U.S. Army Corps of Engineers

1.0 INTRODUCTION

The base was operationally closed under the Army's base realignment and closure (BRAC) program in 1994. Revetments 19, 21, 22, and 26 at the former Hamilton Army Airfield (HAAF) require remediation to address elevated levels of contaminants present in soil. The contaminants present at the revetments include total petroleum hydrocarbons (TPHs), polynuclear aromatic hydrocarbons (PAHs), and metals. This work plan presents the project scope, regulatory authorities, project objectives, and remediation work.

1.1 OBJECTIVE

The activities described herein will be performed to advance the environmental closure in accordance with the provisions of the HAAF Main Airfield Parcel Record of Decision/Remedial Action Plan (ROD/RAP) (Army/DTSC/RWQCB 2003). The ROD/RAP was written by and agreed to among the Army, Department of Toxic Substances Control (DTSC), and Regional Water Quality Control Board (RWQCB) in 2003. These activities are specific to environmental and ecological interests and are designed to achieve Alternative 2 – excavation and off-site disposal. The objective is to remove soils with certain contamination levels resulting from former Department of Defense (DoD) activities.

1.2 SCOPE OF WORK

This Work Plan describes the construction related activities required to meet the objective stated above and as defined in the ROD/RAP. The site-specific construction activities are detailed in Section 2.0. Locations and details of the construction activities are shown on Figures 2-1 through 2-6. The schedule is discussed in Section 4.2.

The goals for each of the sites are to remove contamination identified in previous investigations.

The general scope of work for each site includes:

- Site mobilization and preparation including delineating the excavation boundaries, any necessary vegetation clearing, and utility location;
- Removal or relocation of any utilities and/or permanent structures;
- Collection of in place samples for waste characterization;
- Soil excavation and off-site disposal;
- Limited confirmation samples will be collected during excavation;

1.3 SITE BACKGROUND

Hamilton Army Airfield was constructed on reclaimed tidal wetlands by the U.S. Army Air Corps in 1932, and was first used as an airbase for bombers. At a later time it was used for transport and fighter aircraft. HAAF played a major role in World War II as a training field and staging area for Pacific operations. During the mid-1940s, the hospital served as an acute care and rehabilitation facility for thousands of war casualties per month. The airfield was renamed Hamilton Air Force Base in 1947 as a part of the newly created U.S. Air Force. The U.S. Air Force ended military operations at Hamilton in 1976, and the property was declared surplus by the DoD. In 1976, the Army began using the runway and ancillary facilities and several other buildings for regular Army and Army Reserve operations. The Army used portions of the Base (renamed Hamilton Army Airfield) until 1994. The base was declared surplus property under the Base Closure and Realignment Act of 1988.

HAAF is located 25 miles north of San Francisco in the City of Novato, Marin County, California (Figure 1-1). HAAF is bounded by U.S. Highway 101 to the west and San Pablo Bay to the east. The low-lying areas are seven to eight feet below mean sea level and are kept dry by a system of perimeter levees, storm drains, drainage ditches, and water pumps. The project area is currently vegetated by grasses and occasional shrubs, and is subject to inundation during rainy periods.

1.4 GEOLOGY

The Hamilton Field site lies within the San Francisco-Marin structural block of the northern Coastal Range geomorphic province of California. The Coastal Range province is characterized by a series of nearly parallel mountain ranges and alluviated valleys that trend obliquely to the coastline in a northwesterly direction. The geologic units are composed of a heterogeneous mixture of intrusive, extrusive, metamorphic, and sedimentary rock types, which exhibit varying degrees of tectonic deformation.

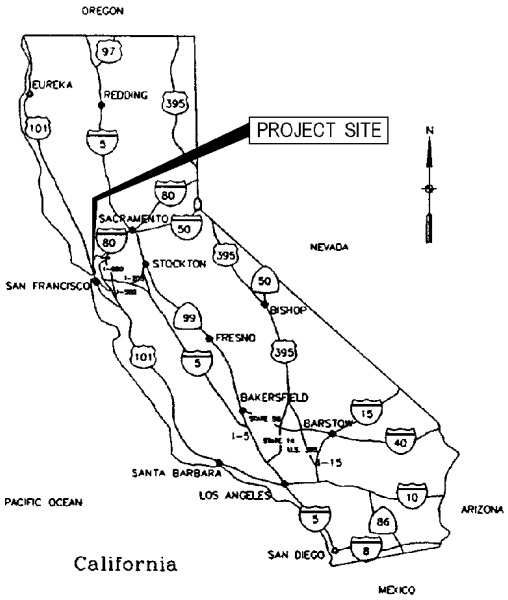


Figure 1-1: Project Location Map

The Hamilton Field site was reclaimed from low-lying tidal marshes adjacent to San Pablo Bay. Site grading at improved areas (building foundations and roadways) produced fills consisting of up to several feet of gravel, gravelly sands, sands, and clays within the airstrip and the levee areas. Beneath the fill are natural, fine-grained, bay and marshland deposits commonly known as Bay Mud.

The Bay Mud typically consists of normally consolidated and lightly overconsolidated, highly plastic clays. Variable amounts of organic material (including interlayers of peat) and numerous small shell fragments are commonly incorporated into the Bay Mud. Stream and channel deposits, occurring as discontinuous lenses of silt and sand containing gravels locally, interfinger with the Bay Mud in areas near the hillsides along the western perimeter of the air field.

The Bay Mud is soft and plastic when wet but tends to shrink, harden, and become brittle when dried. Therefore, the Bay Mud in this area locally can be described as having an upper layer of stiff, desiccated Bay Mud (0 to 5 feet in thickness) and a lower horizon of soft and saturated Bay Mud. These two layers are termed “Bay Mud Crust” and “Bay Mud.” The Bay Mud thickness increases generally to the east across the site towards San Pablo Bay. The thickness of the Bay Mud is highly variable, ranging from a few feet near the northwest part of the property to more than 70 feet in the vicinity of the outboard levee. Thick deposits of very stiff clays underlie the Bay Mud layer. Over most of the site there appears to be a relatively thin layer of very stiff to hard clay that may be of alluvial origin. Below this layer is an extensive deposit of Old Bay Clay (also known as Yerba Buena Mud) of variable thickness. The thickness of the Old Bay Clay increases from west to east towards San Pablo Bay.

The higher relief areas to the west and southwest of the Hamilton Field site are generally underlain by sandstone and shale bedrock from the Franciscan Complex of Jurassic to Cretaceous age. This unit apparently underlies the fill, the Bay Mud, and other geologically young sedimentary deposits beneath the site. A clayey weathering horizon typically develops on the bedrock foundation at the contact with the overlying deposits. Alluvial/Colluvial deposits, composed of sands and silts, are also present in some areas between the Bay Mud and the bedrock. These materials are thought to have been deposited in channels eroded into the bedrock. More recent alluvial deposits interfinger with the Bay Mud along the margins of the intertidal zone.

In the vicinity of the revetments, recent physical analyses of soil around the revetments indicate unimproved areas contain the fine-grained Bay Mud at the surface. Soil in these areas is composed of fines with 99% passing a No. 200 sieve. At each revetment during construction a 12 to 20 inch layer of compacted aggregate base rock was placed before the concrete revetment pads were placed.

1.5 REGULATORY AUTHORITIES

This work is being accomplished following CERCLA guidance and as specified in the ROD/RAP and the RWQCB's site cleanup requirements (SCRs). The San Francisco Bay Area Regional Water Quality Control Board shall administer primary regulatory oversight. The work plan and final report for all activities shall be provided to the RWQCB.

1.6 CHEMICALS OF CONCERN

These revetments were investigated and the results from that effort are documented in *Remedial Investigation Report Revetments 14, 19, 21, 22, 25, and 26, Hamilton Army Airfield, Novato, California*, USACE 2005.The analytical results from that effort which exceeded the action goals of the ROD/RAP are shown on Figures 2-3 through 2-6. The chemicals of concern for this work are as follows.

Revetment	Chemicals of Concern
19	Barium, Cadmium, Copper, Lead, TPH, PAH
21	Copper, Vanadium, TPH
22	TPH
26	Barium, Boron, Manganese, TPH

2.0 DESCRIPTION OF WORK

This section describes the planned approach to the remedial actions. The section consists of Preconstruction Activities, Excavation Activities, and Soil Disposal.

2.1 PRECONSTRUCTION ACTIVITIES

2.1.1 MOBILIZATION AND PREPARATORY WORK

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs. The contractor will have a quality control program to assure errors and deficiencies are minimal.

2.1.2 LOCATION SURVEY

A licensed California land surveyor will survey the horizontal and vertical coordinates of the surface at select locations at each excavation site. The surveyor will use appropriate surveying techniques and the

State Plane, California Zone 3 NAD 83 and NAVD 1988 Datums. The survey data will be presented in the Construction Completion Report.

2.1.3 WASTE MANAGEMENT

No preconstruction waste is anticipated, however, any preconstruction waste soil and decontamination water generated will be stored in Department of Transportation-approved 55-gallon drums. Decontamination water stored in drums will be placed on pallets underlain with a lined and bermed cell to contain any potential spills. The containers will be clearly labeled to indicate specific source, type of material, date of containerization, and project contact. Drums will be stored in a centrally located area on the site to await disposal. Disposal of any hazardous waste soils and decontamination water will occur within 90 days of the date of generation.

Miscellaneous waste, such as polyethylene sheeting and general trash, will be stored in dumpsters or rolloff bins. This material will be disposed of as non-hazardous waste at a generator-approved landfill or off-site recycling facility.

Receiving facility required sampling will be conducted as necessary.

Decontamination water storage is to be segregated by site. The soil sample locations and the approximate volume of water in each drum are to be recorded in daily field logs or project logs.

2.2 EXCAVATION ACTIVITIES

The following sections describe the pre-excavation activities, excavation of sites and site restoration.

2.2.1 PRE-EXCAVATION ACTIVITIES

Pre-excavation activities include obtaining required permits, mobilizing to the site, marking the planned excavation limits, establishing exclusion zones, inspecting for underground utilities, and clearing vegetation from the excavation area. The following sections describe the activities that will be performed in preparation for the excavation work.

2.2.1.1 Permitting and Notification

Permits required for the proposed activities will be obtained prior to the start of field work. The Contractor will provide notification to the Bay Area Air Quality Management District (Regulation 8, Rule 40) that contaminated soil will be excavated. Underground Services Alert will be contacted at least 48 hours prior to excavation activities related to excavation work in order to receive an authorization to proceed. The local Department of Occupational Safety and Health will be notified at least two weeks prior to commencing excavation activities.

2.2.1.2 Mobilization and Site Set-up

Personnel, equipment, materials, and temporary facilities necessary to execute the project will be mobilized as needed to HAAF. Receipt and inspection of equipment and material will be documented on daily project logs.

2.2.1.3 Temporary Facilities and Site Security

Decontamination and waste storage areas will be set up.

Site control requires the establishment of regulated areas and site security. Site controls will be established to protect the public from construction hazards (i.e., heavy equipment and open excavations). Traffic control devices, such as barricades, cones, delineators, and signage, will be employed as necessary to manage pedestrian and vehicular traffic. Truck traffic between work areas will be set up as one-way looped haul roads. Haul routes are shown in Figure 2-2.

2.2.1.4 Marking Planned Excavation Limits

Planned excavation limits will be marked prior to the mobilization of the construction crew and equipment. The areas of excavation will be field-located using appropriate surveying techniques. The proposed excavation limits for the remedial action sites are shown on Figures 2-3 through 2-6. Survey activities will be recorded in the Field Activity Daily Log.

2.2.1.5 Identification of Underground Structures and Utilities

The location of utilities and other underground structures within and around the planned excavation areas will be determined.

2.2.2 WASTE CHARACTERIZATION

The contaminated material will be sampled in place for waste characterization. Potholes will be dug to the appropriate depths at the respective revetments. Pothole material will be collected in the field and combined into four point composite samples at the frequency required by the disposal facility. The samples will be analyzed for the analytes and parameters and by the methods required by the disposal facility. Copies of analytical test results will be provided to the disposal facility as required to obtain disposal acceptance. When the material is approved for disposal, excavation equipment will be mobilized and the material will be dug and placed into trucks to be transported to and disposed at an off-site facility permitted to receive the material.

2.2.3 EXCAVATION

Prior to excavation, the ground surface at the location of the planned excavation at each site will be cleared of any vegetation, debris, asphalt, and concrete. The proposed dispositions of known utilities and structures within the excavations are discussed in Section 2.2.4.

The soil will be excavated using an excavator, backhoe, and front-end loader based on the size and configuration of the excavation. The excavation areas, volumes, and depths are included in Table 2-1. Excavated soil will be transferred directly into trucks for transport off-site. During excavation activities, engineering controls such as water mist spray will be used for dust control as needed. The sidewalls of the excavations will be sloped or benched as described in below to minimize sloughing and ensure personnel safety. Safety warning signs will be posted.

The total estimated area and volume of the excavations for each site is as follows:

Table 2-1. Revetment Site Planned Excavations

	Revetment 19	Revetment 21	Revetment 22	Revetment 26
Area[1] (ft^2)	3682	3650	150	1143
Excavation Depth (inches)	12	20	12	20
Excavation Volume (cy)	137	225	5.6	71
Hotspot Area (ft^2)	---	100	---	---
Additional Excavation Depth for Hotspot (inches)	---	10	---	---
Hotspot Excavation Volume (cy)	---	3	---	---
Total Excavation Volume[2] (cy)	137	228	5.6	71

ft^2 = square feet
cy = cubic yards

1 Dimensions may vary in accordance with findings of predesign investigation sampling activities.
2 20% excavation tolerance

The excavation will continue at each site until the designed extent of the excavation is reached. In no case will critical structures be disturbed during excavation. Excavation will be conducted as close as possible to permanent structures while maintaining no less than a 1:1 slope. Personnel and equipment will not enter the excavation or within the zone delineated by a 1.5:1 slope without approval of the Site Safety and Health Officer. Critical structures include roads, pipelines, some utilities, buildings, and poles for overhead power and telephone lines.

2.2.3.1 Revetment 19

At Revetment 19 PAHs drove the step out sampling. Metals results did not indicate a problem at this revetment. Out of 10 samples the values for barium and lead each had one exceedance of the action goals. The average concentrations of these metals are well below the action goals, 130 mg/kg versus 190 mg/kg and 23 mg/kg versus 46.7 mg/kg, respectfully. The results of the TPH sampling at this site indicated a very small impact at this site. The excavation boundary shown in Figure 2-3 is based on results from the PAH sampling. The excavation is bounded by samples HAAF-R19-S-35-1841-0, HAAF-R19-W-25-1856-0, HAAF-R19-N-35-1846-0 and the asphalt taxiway leading to the revetment. The results for these samples were all below the action goals. The depth of the excavation was set at 12 inches based on the fact that all sample results for all COCs were below the action goals at a depth of 12 inches.

2.2.3.2 Revetment 21

At Revetment 21 all the values for metals were below the action goals. The TPH results drove the sampling at this revetment. During sampling a stained soil layer was noted at about 3 to 9 inches below grade. For that reason the surface sampling was relocated to the 6-inch depth to capture this stained soil

layer. The excavation boundary shown in Figure 2-4 is based on TPH results from the sampling. The excavation is bounded by samples HAAF-R21-E23S35-1861-0.5, HAAF-R21-S-30-1815-0.5, HAAF-R21-W25S25-1860-0.5, HAAF-R21-W-38-1812-0.5, HAAF-R21-W24N24-1862-0.5, HAAF-R21-N-24-1813-0.5 and the asphalt taxiway leading to the revetment. The results for these samples were all below the action goals.

At this revetment a black rock layer was encountered at about 20 inches below grade. The Army believes that this is a degraded previous asphalt pavement. The presence of JP4 under this layer indicates that the fuel may have degraded the asphalt and has penetrated it. In areas of intact asphalt it is not expected that any fuel has penetrated the asphalt. Sampling at Revetment 26 supports this assumption. The initial depth of this excavation will be to the top of the asphalt layer. At that point the asphalt will be inspected and any areas of degradation will continue to be excavated until all stained soils are removed. Confirmation samples will ensure complete removal at this location. Four sidewall and one bottom sample are planned.

2.2.3.3 Revetment 22

At Revetment 22 TPH was the only COC. All of the initial samples were below the action goal except for the 10-foot step out to the east, sample number HAAF-R22-E-10-1819-0. Three 5-foot step-out samples were collected around this point to the north, south and east. A step down sample was collected at this location at one foot depth. All of the step out and step down samples were below the action goal. The excavation boundary shown in Figure 2-5 is based on results from the TPH sampling. The excavation is bounded by samples HAAF-R22-O-C-1816-0, HAAF-R22-E10N5-1837-0, HAAF-R22-E-15-1836-0 and HAAF-R22-E10S5-1838-0. The results for these samples were all below the action goals. The depth of the excavation was set at 12 inches based on sample results for HAAF-R22-E-10-1819-1.0 being below the action goals at a depth of 12 inches.

2.2.3.4 Revetment 26

At Revetment 26 TPH drove the step out sampling. Metals results did not indicate a problem at this revetment. Out of 7 samples there were no exceedances of the action goals for metals. The initial samples were moved to step outs of 30 and 40 feet to the west due to visual observations of stained soils. The surface samples were moved to the 6-inch depth, which is the depth of the stained soils. The only exceedances of the action goals were at the previous center location and at the step out sample 30 feet to the west. At the center location samples were collected at three depths. While collecting the samples an intact asphalt layer was encountered at about 20 inches below grade. The two samples collected above the asphalt layer both had JP4 while the sample collected below the intact asphalt pavement did not have JP4. In addition to the JP4 the sample collected just above the asphalt pavement had a marginal exceedance of TPH in the diesel range and the one collected below the asphalt pavement had a marginal exceedance of TPH in the motor oil range. The detection of motor oil below the asphalt pavement is not unexpected since standard practice is to apply oil before laying asphalt pavement.

At this site it does not appear that the fuel degraded or penetrated the asphalt layer. The excavation boundary shown in Figure 2-6 is based on results from the TPH sampling. The excavation is bounded by samples HAAF-R26-N-10-1828-0.5, HAAF-R26-E-10-1829-0.5, HAAF-R26-S-10-1830-0.5, HAAF-R26-W30S10-1859-0.5, HAAF-R26-W-40-1831-0 and HAAF-R26-W30N15-1858-0.5. The results for these samples were all below the action goals. The depth of the excavation was set at the asphalt layer (about 20 inches) based on the fact that there appears to be fuel down to the asphalt but it has not penetrated it.

2.2.4 DISPOSITION OF UTILITIES AND STRUCTURES

If utilities or structures other than those discussed in this Work Plan are encountered during excavation work, HAAF representatives will be consulted to determine if the utility is currently in service or if future use is planned. In general, if a utility is in service or planned for service, it will be braced and protected or relocated during excavation activities. If a utility is out of service, it may be removed, or abandoned, at the discretion of the Army.

2.2.5 DECONTAMINATION AFTER REMEDIAL ACTION

A decontamination area for heavy equipment will be set up. The decontamination area will include a polypropylene lined, bermed cell with a sump for water collection.

Heavy equipment, including backhoes, excavators, and front-end loaders, will be decontaminated prior to demobilizing off the site. The tires, or tracks, of equipment that have traveled on contaminated soil will be cleaned.

A small decontamination area will be set up prior to the start of any waste profile sampling event. Reusable sampling equipment that will come in direct contact with soil, including trowels and bowls, will be thoroughly decontaminated. Personnel decontamination areas may be established at work areas as required in the SHSP.

Wastes collected during decontamination activities will be properly disposed. At the end of each workday, wastes from decontamination activities will be stored in the designated storage areas until final disposal.

2.2.6 POST-EXCAVATION SURVEY

Survey data will be provided as part of the Construction Completion Report. A final survey will verify the limits and depth of each excavation. Excavation depths will be documented by the on-site construction representative.

2.2.7 SITE RESTORATION

Site conditions after remedial action of the revetments will be as follows:

- The excavations will not be backfilled, yet excavation edges will graded;
- Sample and grading stakes will remain;
- As-built documentation of excavations will be based on a survey to be performed by a licensed surveyor and a complete set of survey data will be provided as part of the as-built documentation in the construction completion report.

When field activities are completed, the decontamination areas will be removed, and the area will be restored as much as possible to the original conditions. Any waste generated during the project will be disposed of properly.

2.2.8 WASTE MANAGEMENT, CHARACTERIZATION, AND DISPOSAL

2.2.8.1 Soil

All soils will be characterized for disposal before excavation begins. Bulk carriers will transport the soil off-site to the licensed disposal facility. The carriers will be owned and operated by a transporter that is licensed and permitted to transport the waste soil. The waste soil will be transported under bill-of-lading or Uniform Hazardous Waste Manifest, if required.

2.2.8.2 Liquids

Liquid wastes generated during the soil removal activities may include decontamination rinse water. These liquids will be collected and stored in drums or portable tanks and transferred directly to a vacuum truck or trailer for transport to a disposal facility.

Samples will be collected, as required by the disposal facility, and the water will be characterized for disposal. Previously obtained analytical results will be used to the extent possible in characterizing the wastes. Once acceptance has been received from the disposal facility and the generator, the water will be transported under bill-of-lading or Uniform Hazardous Waste Manifest, if required.

2.2.8.3 Debris and Miscellaneous Waste

Debris consisting of non-hazardous combustible and non-combustible wastes resulting from demolition and clearing and grubbing waste will be disposed of off-site according to applicable Federal, State, and local requirements.

Miscellaneous waste such as construction debris, polyethylene sheeting, and general trash, will be transported under bill-of-lading or Uniform Hazardous Waste Manifest, if required.

2.2.8.4 Concrete

Concrete debris that is free of associated soils will be placed in the current concrete debris disposal area.

2.3 DUST CONTROL

Dust control will be implemented as needed during the field activities associated with the project. If needed, dust control during surface soil excavation will be achieved through application of water. Structures and land surfaces will be treated with water dispensed from a water truck or trailer or by water sprayed from a pressurized hose. The source of water will be the hydrant on the northeast side of Building 82. Excavation areas subject to dust control will be treated with water dispensed from a pressurized hose. The objectives associated with the application of water for dust control are to minimize any saturation, and to mitigate negative impacts to human health, and the environment. Water will be fogged or sprayed into the dust around the waste and waste surface in minimal volumes to provide dust suppression only. Water will not be introduced into the waste in volumes that exceed disposal facility acceptance criteria.

2.4 DEMOBILIZATION

Demobilization will consist of the decontamination and removal of heavy equipment, tools, and supplies; and evacuation of the temporary office space. Temporary fence, traffic control devices, signs, storage containers, and refuse containers will be removed from the site. Debris will be properly disposed and

work areas will be cleaned and left in condition similar to or better than their condition before commencement of the project activities.

2.5 PHOTO DOCUMENTATION

Photographs will be taken to document the work activities at each site.

3.0 POST CONSTRUCTION DOCUMENTATION

A summary report will be prepared and submitted. Tables will supplement the as-built report, and will include documentation of removed and/or demolished features, analytical test results, waste manifests, disposal records, survey data, and soil quantities excavated. Materials, equipment and procedures used, requests for information, and problems encountered will also be provided in the summary report. Photographs documenting work activities will be provided in an appendix.

4.0 PROJECT ORGANIZATION AND SCHEDULE

4.1 PROJECT ORGANIZATION

4.1.1 Project Manager - Mr. Raymond Zimny

4.1.2 Team Member – Technical Lead - Mr. James Lukasko

4.1.3 Team Chemist - Ms. Pam Amie

4.1.4 Database Manager – Chemistry Quality Control Manager (CQCM) - Mr. Carleton Fong

4.1.5 Contract Laboratory
Labs report to the Project Chemist or the CQCM and are responsible for implementing their quality management plan and providing analytical and related services in accordance with the approved project work plan and referenced procedures.

4.1.6 Program Safety and Health Officer - Ms. Donna Maxey

4.1.7 Contractor Quality Control System Manager - Mr. Thomas Purbaugh is the Cerrudo Services PM

4.1.9 BRAC Environmental Coordinator - Mr. Ed Keller

4.2 PROJECT SCHEDULE

Excavation activities will be performed during May through July 2005. These activities include the preparation, submittal, review, and approval of the project plans. Field activities will begin with mobilization in May 2005 and are scheduled to be completed by July 2005. Reporting is to be completed by September 2005.

5.0 REFERENCES

Army (U.S. Department of the Army), DTSC (California State Department of Toxic Substances Control), RWQCB (California Regional Water Quality Control Board) 2003. *Main Airfield Parcel Record of Decision/Remedial Action Plan, Hamilton Army Airfield*, Final, August 2003.

Foster Wheeler Environmental Corporation, 2000. *Remedial Design Investigation Final Data Report, BRAC Property, Hamilton Army Airfield*, February 2000.

IT Corporation, 1999. *Comprehensive Remedial Investigation Report, BRAC Property, Hamilton Army Airfield*, April 1999.

USACE 2004. Work Plan, Miscellaneous Site Investigations, Hamilton Army Airfield, Final, January 2004.

USACE 2005. *Remedial Investigation Report Revetments 14, 19, 21, 22, 25, and 26, Hamilton Army Airfield, Novato, California*.

FIGURES

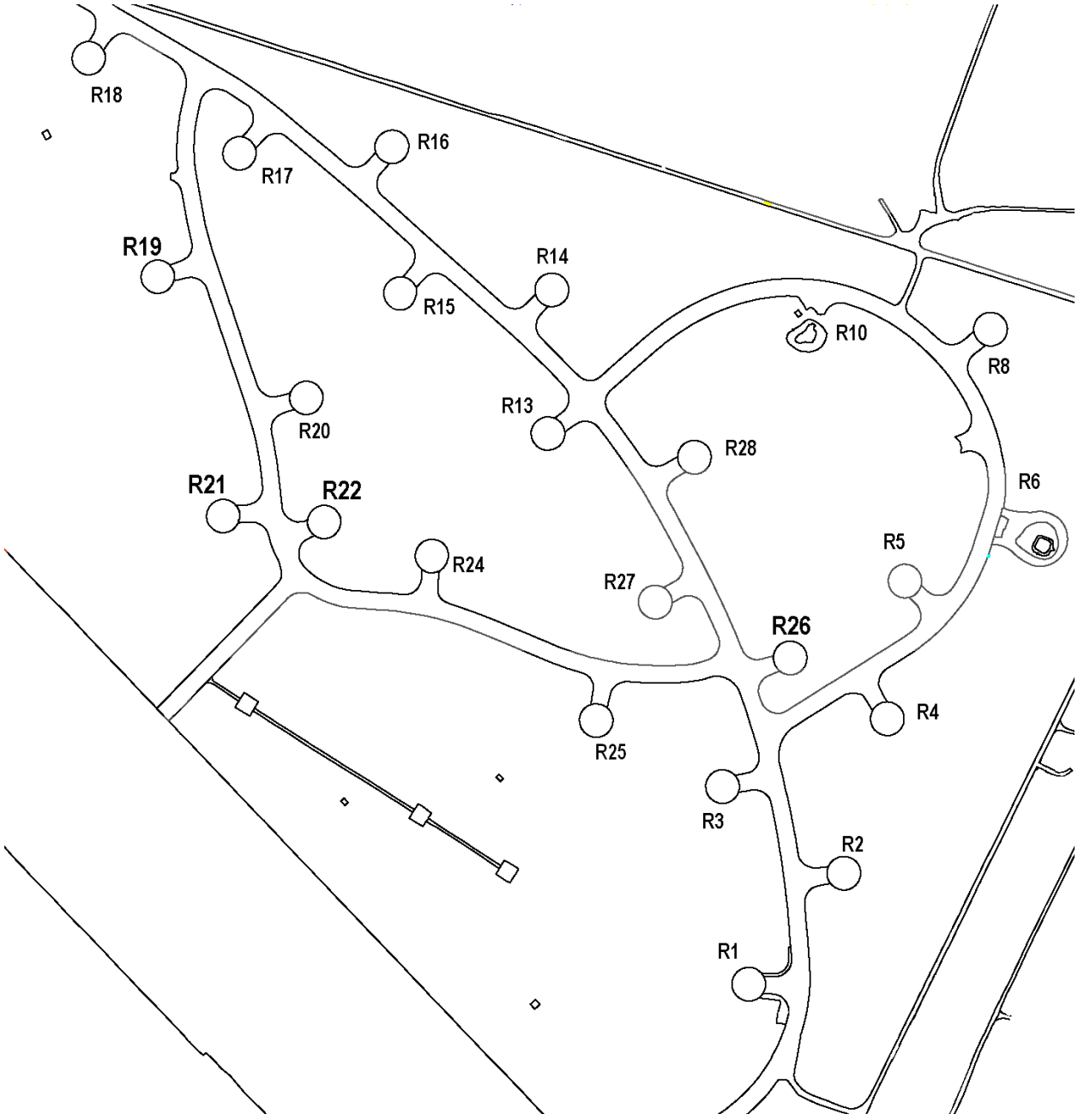
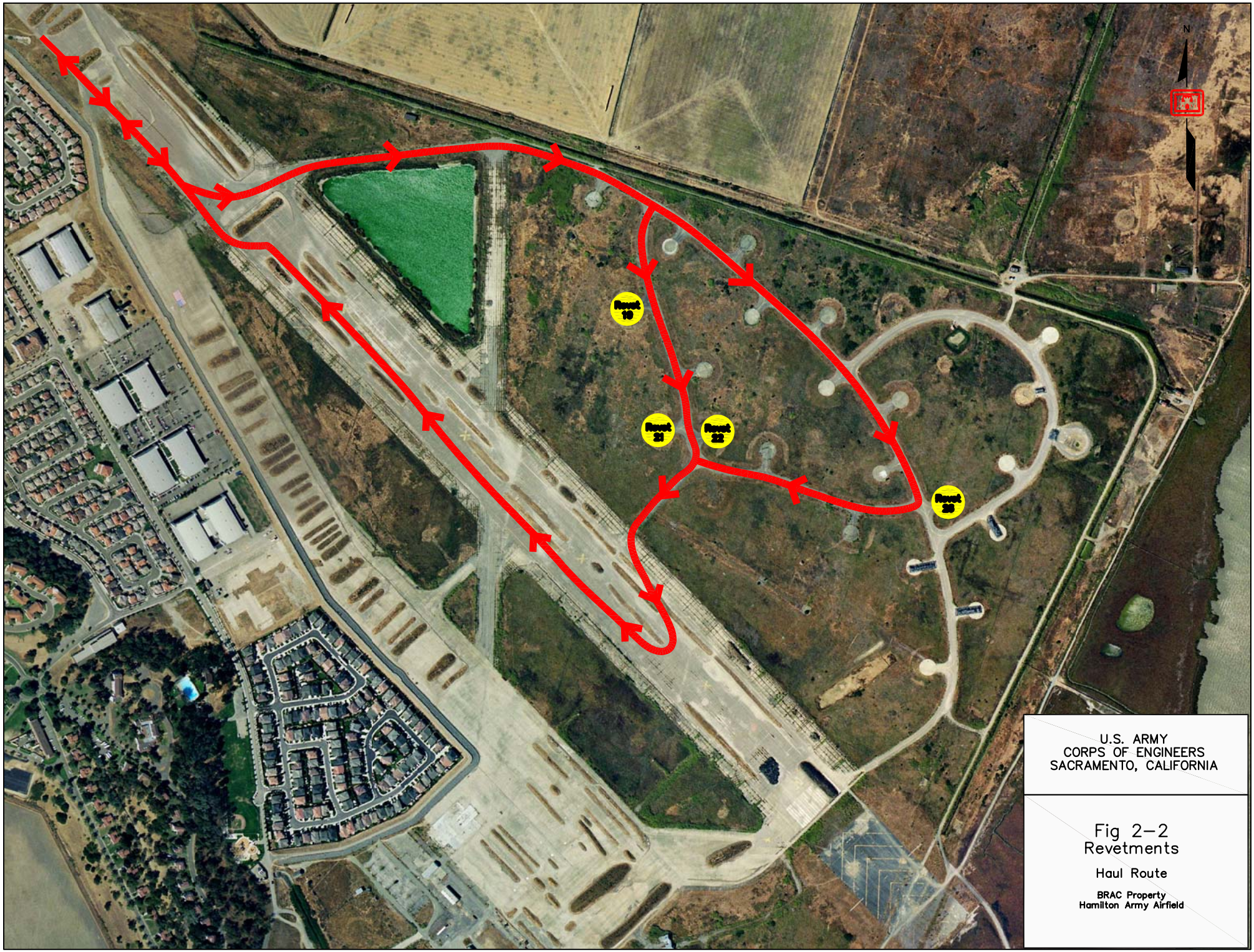


Figure 2-1. Revetments Map


N
Revet 19
Revet 21
Revet 22
Revet 23
U.S. ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA
Fig 2-2
Revetments
Haul Route
BRAC Property
Hamilton Army Airfield

Excavation Boundary Coordinates		
Location	Northing	Easting
R19EX-A	2214407	5984721
1846	2214407	5984746
R19EX-B	2214407	5984761
R19EX-C	2214337	5984765
1841	2214337	5984746
R19EX-D	2214337	5984721
1856	2214372	5984721

R19-N35-1846 0′

R19-N10-1808 0′
Total PAHs= 13 mg/kg
Lead= 64.4 mg/kg
R19-N10-1808 1.0′

R19-N25-1857 0′
Total PAHs= 5.9 mg/kg

R19-0-C-1806 0′
Total PAHs= 21 mg/kg
R19-0-C-1806 1′

R19EX-A

R19EX-B

R19-N15-1839 0′
Total PAHs= 66 mg/kg
R19-N15-1839 1.0′

Excavation depth shall be to 12 inches.

R19-E10-1809 0′
Total PAHs= 7.4 mg/kg
TPH-□= 147 J
R19-E10-1809 1.0′

R19-E15-1833 0′
Total PAHs= 5.6 mg/kg
R19-E15-1833 1.0′

R19-W35-1849 0′

R19-E25-1854 0′
Total PAHs= 5.4 mg/kg

R19-S10-1810 0′
Total PAHs= 6.6 mg/kg
Barium = 280 mg/kg
R19-S10-1810 1.0′

R19-W25-1856 0′

R19-S15-1840 0′
Total PAHs= 220 mg/kg
R19-S15-1840 1.0′

R19-W15-1832 0′
Total PAHs= 19 mg/kg
R19-W15-1832 1.0′

R19EX-C

R19EX-D

R19-S25-1853 0′
Total PAHs= 11 mg/kg

R19-W10-1807 0′
Total PAHs= 34 mg/kg
TPH-D= 180 mg/kg
TPH-□= 184 J
R19-W10-1807 1.0′

HB-99-S□-19d

R19-S35-1841 0′

Contaminant of Concern	Action Goal (mg/kg)
TPH-G	12
TPH-JP4	12
TPH-D	144
TPH-□	144
Total PAHs	4.022
Barium	190
Cadmium	1.2
Copper	68.1
Lead	46.7

0 10 20 40

N

Note: □nly sample resutls exceeding action goals are shown

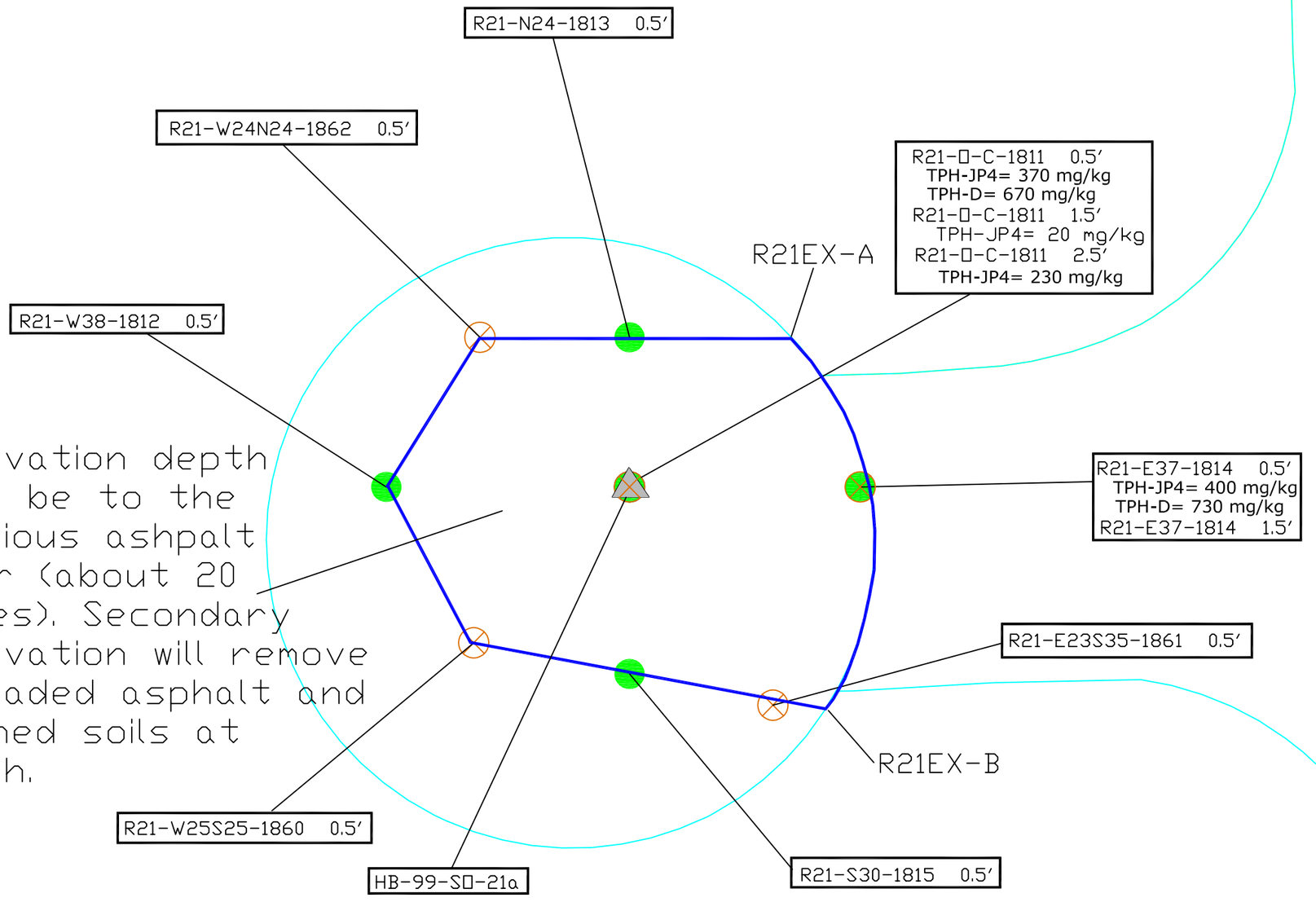
LEGEND

- Sample Locations
- "Step-out" and "Step-down" Sample Locations
- Historical Sample Locations
- J Estimated Concentration
- Excavation Boundary

U.S Army Corps of Engineers
Sacramento District

Figure 2-3
Revetment 19
Excavation

Hamilton Army Airfield



Excavation depth shall be to the previous ashpalt layer (about 20 inches). Secondary excavation will remove degraded asphalt and stained soils at depth.

Excavation Boundary Coordinates		
Location	Northing	Easting
1862	2213710	5984903
1813	2213710	5984927
R21EX-A	2213710	5984953
R21EX-B	2213650	5984958
1861	2213651	5984950
1815	2213656	5984927
1860	2213661	5984902
1812	2213686	5986889

LEGEND

- Sample Locations
- "Step-out" and "Step-down" Sample Locations
- Historical Sample Locations
- J Estimated Concentration
- Excavation Boundary

Contaminant of Concern	Action Goal (mg/kg)
TPH-G	12
TPH-JP4	12
TPH-D	144
TPH-□	144
Copper	68.1
Vanadium	118

0 10 20 40

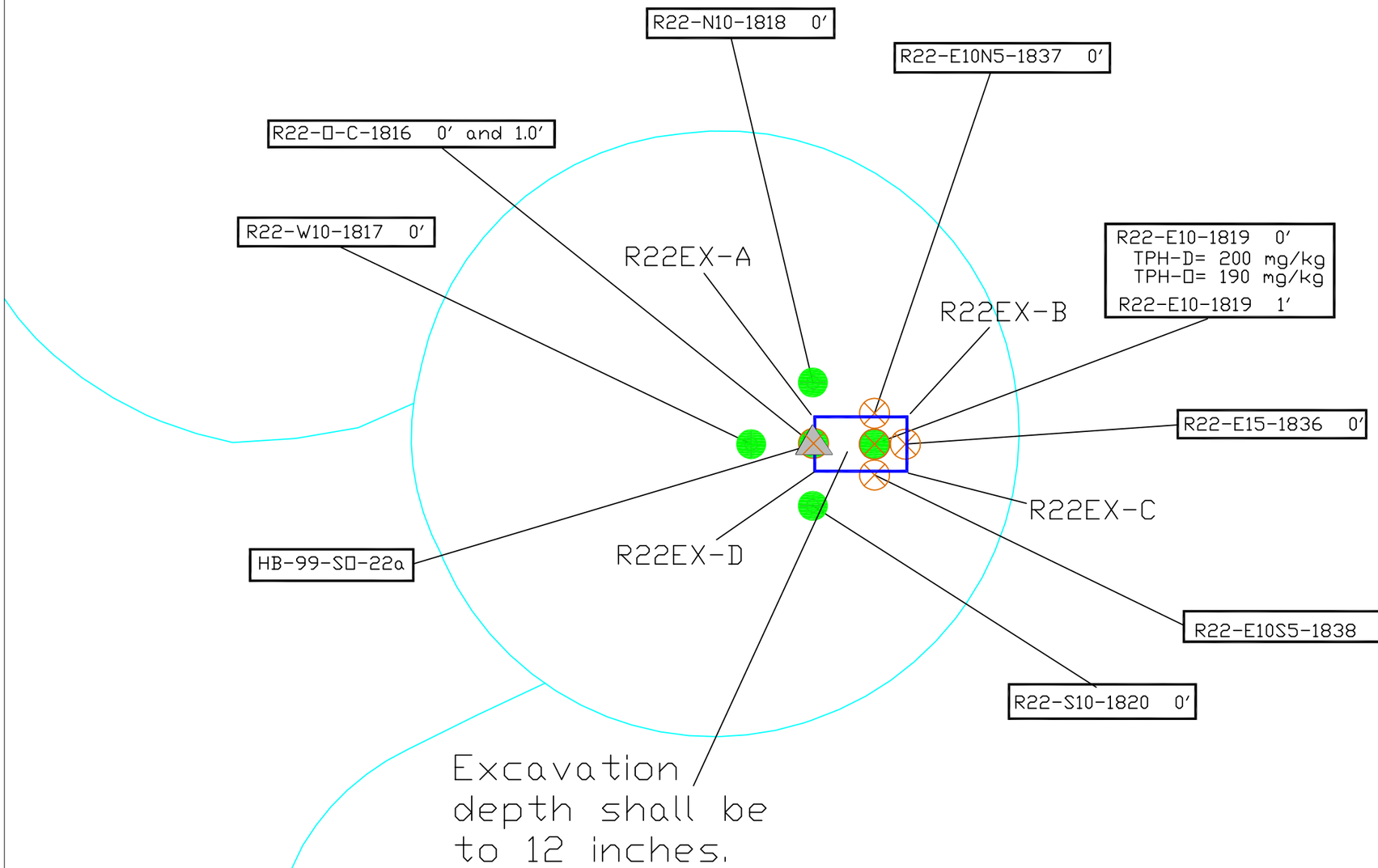
N

Note: □nly sample resutls exceeding action goals are shown

U.S Army Corps of Engineers
Sacramento District

Figure 2-4
Revetment 21
Excavation

Hamilton Army Airfield



Excavation Boundary Coordinates		
Location	Northing	Easting
R22EX-A	2213661	5985229
1837	2213661	5985239
R22EX-B	2213661	5985244
1836	2213656	5985244
R22EX-C	2213651	5985244
1838	2213651	5985239
R22EX-D	2213651	5985229
1816	2213656	5985229

LEGEND

- Sample Locations
- "Step-out" and "Step-down" Sample Locations
- Historical Sample Locations
- J Estimated Concentration
- Excavation Boundary

Contaminant of Concern	Action Goal (mg/kg)
TPH-G	12
TPH-JP4	12
TPH-D	144
TPH-□	144

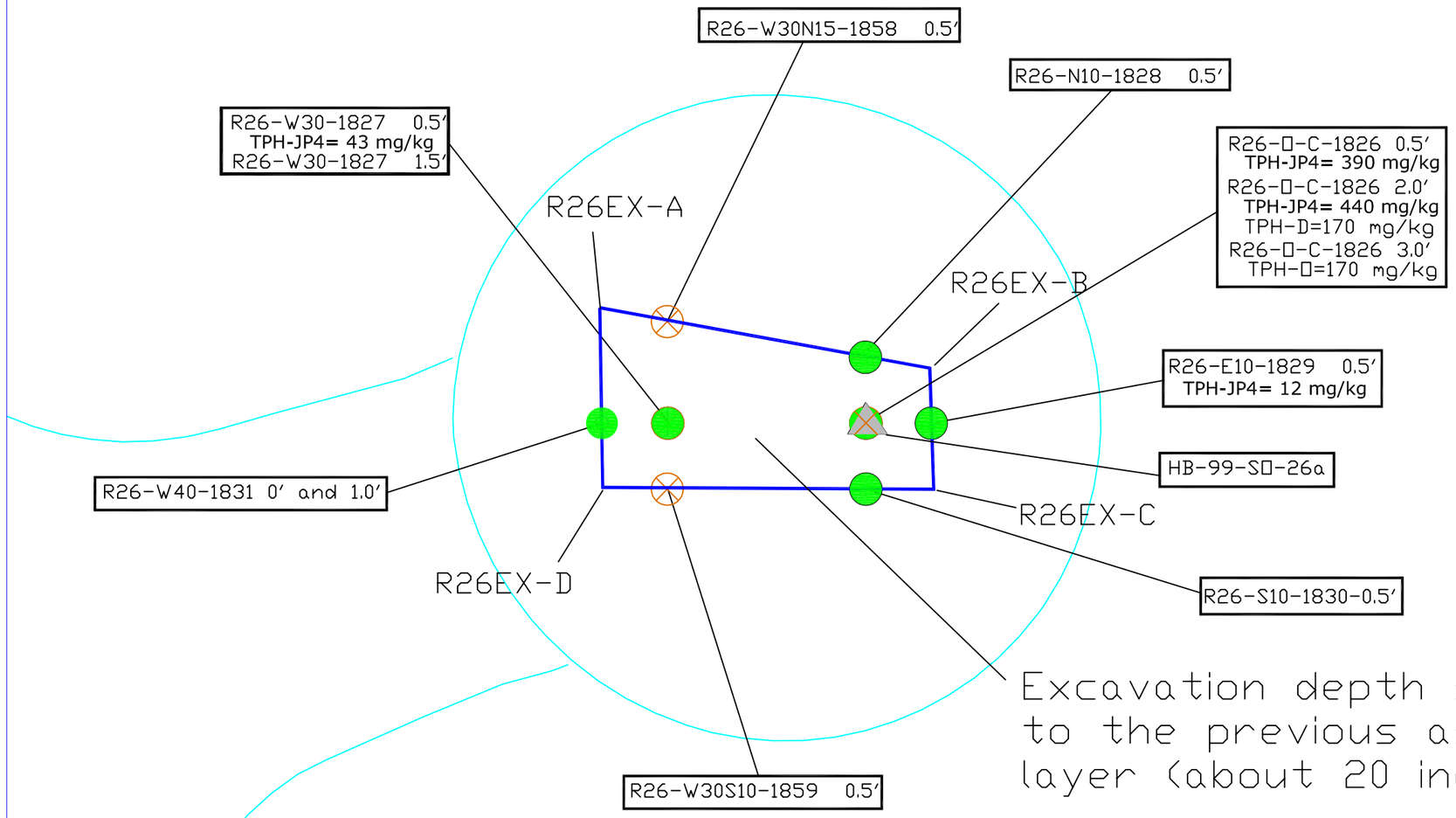
Note: □nly sample resutls exceeding action goals are shown

U.S Army Corps of Engineers
Sacramento District

Figure 2-5
Revetment 22

Excavation

Hamilton Army Airfield



Excavation Boundary Coordinates		
Location	Northing	Easting
R26EX-A	2213275	5986546
1858	2213273	5986556
1828	2213268	5986586
R26EX-B	2213267	5986596
1829	2213258	5986596
R26EX-C	2213248	5986596
1830	2213248	5986586
1859	2213248	5986556
R26EX-D	2213248	5986546
1831	2213258	5986546

Excavation depth shall be to the previous ashpalt layer (about 20 inches)

LEGEND

- Sample Locations
- "Step-out" and "Step-down" Sample Locations
- Historical Sample Locations
- J Estimated Concentration
- Excavation Boundary

Contaminant of Concern	Action Goal (mg/kg)
TPH-G	12
TPH-JP4	12
TPH-D	144
TPH-□	144
Barium	190
Boron	36.9
Manganese	943

0 10 20 40

N

Note: □nly sample resutls exceeding action goals are shown

U.S Army Corps of Engineers
Sacramento District

Figure 2-6
Revetment 26
Excavation

Hamilton Army Airfield