

REPORT

*Nationwide Permit 38 Modification Request
(ACOE File No. 26417S) Western Stege
Marsh Remediation and Restoration Project
at Richmond Field Station,
Richmond, California*

US Army Corps of Engineers,
Regulatory Branch

June 2003

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June 2003



June 24, 2003

Molly Martindale
US Army Corps of Engineers, Regulatory Branch
333 Market Street, 8th Floor
San Francisco, CA 94105-2197

**Subject: Nationwide Permit 38 Modification Request (ACOE File No. 26417S)
Western Stege Marsh Remediation and Restoration Project at
Richmond Field Station, Richmond, California**

Dear Ms. Martindale:

Blasland, Bouck & Lee (BBL) and URS Corporation (URS), on behalf of the University of California, Berkeley (UC Berkeley) and Zeneca Inc. (Zeneca) is requesting a modification to the existing Nationwide Permit No. 38 (File Number 26417S) issued to Zeneca and UC Berkeley for a portion of Subunit 2 of Meade Street Operable Unit Remediation program as required by the Regional Water Quality Control Board (RWQCB) Orders No. 01-101 and 01-102. The Meade Street Operable Unit (MSOU) as designated by the RWQCB, consists of the UC Berkeley Richmond Field Station (RFS) and the adjacent property to the east. The location of the RFS is shown on Figure 1.

The MSOU was divided under the Orders into Subunits 1 and 2. The location and boundaries of the subunits are shown on Figure 2. Subunit 1 encompasses the former Zeneca property (which was purchased in 2002 by Cherokee Simeon Ventures (CSV)) including Eastern Stege Marsh. Subunit 2 encompasses the RFS and Western Stege Marsh. Subunit 2 was further divided into Subunit 2A and 2B as shown on Figure 3. Zeneca is responsible for Subunit 1, UC Berkeley is responsible for Subunit 2B, and both Zeneca and UC Berkeley are co-responsible for Subunit 2A.

Two separate orders were issued for Subunits 1 and 2. Order No. 01-101 which covers the activities for Subunit 1, divided the work into two phases. The goal of the first phase performed during 2002 was to remediate the source areas within the upland areas to prevent further migration of contaminants from entering the marsh. The second phase includes the removal of contaminated materials from Eastern Stege Marsh.

Order No. 01-102 which was issued for Subunit 2, also divided the remedial activities into two phases. The first phase, to be conducted in 2002, required the cleanup of

Subunit 2A and the additional characterization of Subunit 2B to delineate the extent of contaminants within both the upland and marsh portions of Subunit 2B. The work has been separated into additional phases due to the extensive distribution of the contaminants found in both the Subunit 2A and 2B portions of Western Stege Marsh during the Phase 1 work, the limited construction season due to the presence of the California Clapper rail (*Rallus longirostris obsoletus*) and the onset of the rainy season, limited funding available to UC Berkeley due to the State budget crises, and ongoing negotiations with the RWQCB regarding appropriate cleanup levels and extent of areas requiring cleanup. Figure 4 shows the areas to be completed under these phases. The Phase 2 work to be conducted in the fall of 2003, is planned to include the remediation of the remainder of Subunit 2A and a small portion of Subunit 2B at the RFS Site.

In preparation for Phase 1 work in 2002, the wetland areas were delineated by Levine Fricke in 2001 on behalf of Zeneca, to establish the boundary between the upland and wetland portions for Subunit 1 and Subunit 2A. The survey established the 5-foot NGVD contour as the boundary between wetland/waters of the U.S. and upland areas. A Joint Aquatic Resource Permit Application (JARPA) was submitted by LFR on September 11, 2001 which covered the remedial activities for the upland portion of Subunit 1 and a portion of Subunit 2A as shown on Figure 5. After the submittal of the JARPA application by LFR, UC Berkeley and Zeneca began working together on Subunit 2A. Additional characterization by UC Berkeley within Subunit 2A discovered elevated levels of metals outside the area covered in the JARPA application by LFR. Based on the results of this additional investigation, a modified excavation boundary for the Subunit 2A portion of Western Stege Marsh was established. A revision to the work area and addition of UC Berkeley as a co-permittee was requested in a supplemental report provided to the ACOE and USFWS entitled Meade Street Operable Unit Subunits 1 and 2A ACOE (File Number 26417S) submitted on June 5, 2002. Figure 6 displays the results of this investigation as well as the revised excavation boundaries. A photo showing the pre-excavation condition of the Subunit 2A is shown on Figures 7.

Two onsite meetings were held with USFWS representative David Wooten to discuss the results of the Clapper rail surveys conducted during February 2002 by LFR and to establish a safe buffer zone for the work requested in the modified permit application. It was agreed during the onsite meetings that the work should move forward to remediate the marsh as quickly as possible due the impacts of the elevated levels of contaminants on the marsh wildlife. Furthermore, the work would be performed outside the area where the Clapper rails had been sighted in the Western and outer portions of Western Stege Marsh. To protect the rails during their breeding season, it was agreed that no work would be performed within the habitat area or a 150-foot buffer zone. Therefore, all

work within the marsh would be performed after September 1st, the end of the breeding season. A Nationwide 38 permit was issued with these conditions by the ACOE on September 17, 2002.

Completed Work

Under the original authorization, excavation and remediation of the upland portion of Subunit 1 was completed by Zeneca's contractors along with a portion of Subunit 2A in the fall of 2002. The boundary of the areas completed during the first phase is shown on Figure 7. The completed portions of Subunit 2A include Areas 1 and 3 and part of Area 2. Approximately 19,120 cubic yards of sediment were removed from approximately 2.2 acres within ACOE jurisdiction. Due to the restricted work schedule, the full extent of work authorized under the permit was not able to be completed.

Proposed Work

The following work is planned for 2003 (Phase 2) under the requested modification to the existing Nationwide 38 Permit. The remainder of Subunit 2A is proposed for remediation in 2003 as required by UC Berkeley's agreement with Zeneca. In addition to previously authorized work in Subunit 2A, two additional areas in Subunit 2B, M1a and M3, are proposed for remediation in 2003. Area M3 which is located directly adjacent to Subunit 2A is proposed for remediation due to the elevated concentrations of metals (arsenic up to 1,800 mg/kg) and mercury (up to 1,800 mg/kg) in the sediment, and the similarity of the required treatment technology to stabilize the chemicals of concern (COCs). Area M1a which encompasses an area of approximately 40 feet by 45 feet is proposed for completion in 2003 as a source control measure. The sediments within M1a contain elevated levels of PCBs, (up to 61,000 mg/kg) that pose an ecological risk. Due to its proximity to the western storm drain outfall, the potential for the storm water discharge into this area could cause migration of PCBs into Meeker Slough is an immediate concern. The four areas proposed for remediation, along with the related treatment facilities are shown on Figure 8.

In preparation of the Phase 2 work, California clapper rail protocol level monitoring conducted under the direction of URS was performed in Western Stege Marsh in February 2003. This survey identified rails in Western Stege Marsh both inboard and outboard of the East Bay Regional Park District's (EBRPD) Bay Trail in the western portion of Western Stege Marsh near Meeker Slough (Jules Evens personal communication). We propose continuing the special conditions stipulated in the original permit to minimize impacts to the rails, as follows:

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- Remediation of upland portions of the 2003 work outside a 150-foot buffer prior to September 1; and
- Work within the marsh and the 150-foot buffer between September 1 and February 1.

We request a deviation from the 150-foot buffer for one pre-remediation activity within Area 4. We request you consider allowing the installation of an asphalt treatment pad across the 150-foot buffer line. As shown on Figure 8, a small portion of the treatment pad does fall within the 150-foot buffer. It is anticipated that the work will begin in August 2003. The installation of the asphalt pad will be performed in August near the end of the Clapper rail breeding season. It should be stressed that no work will occur in the marsh prior to September 1st. The work will include excavating a small hot spot area under the pad, installation of the portion of the new sewer line that will be under the pad, installation of the asphalt base, and paving of the treatment pad. The work is expected to be completed in approximately one to two weeks, but must be completed prior to excavating and treating contaminated material from Area 4 outside the 150-foot buffer.

Once the treatment pad is installed, the excavation of the upland portion of Subunit 2A outside of the 150-foot buffer zone (Figure 8) will begin. All work will be performed in accordance with USFWS recommendations from last year. This work includes the following:

- Excavation of a portion of Area 4;
- Replacement of the western portion of the sanitary sewer line; and
- Construction of the asphalt treatment pad.

Work in the marsh, scheduled to begin after September 1, 2003, will include the remainder of Area 2, M1a, and M3. The areas and volumes comprising the 2003 remedial action are summarized in Table 1 below. The total volume proposed for removal is approximately 14,700 cubic yards and the total area is approximately 1.3 acres.

Table 1 Areas and Volumes Proposed for Remedial Work in 2003, within Corps Jurisdiction

Remedial Unit	Volume (cubic yards)	Area (square feet)
2A	7,100	40,100

M3	7,300	16,900
M1a	300	1,800
Total	14,700	58,800

As stated above, the remedial program in the marsh portion Subunit 2B is anticipated to take three more fall construction seasons to complete. The schedule of the phased program is shown on Figure 9. Since the extent of areas requiring removal has not been established by the RWQCB, it is not possible to identify the total number of acres that will be disturbed and remediated at this time. We are working closely with the RWQCB to develop cleanup levels and identify the areas of concern that will require removal. Once this has been established with the RWQCB staff, a final mitigation plan can be developed.

In the interim, we have prepared a conceptual marsh restoration design shown on Figure 9. We anticipate that the final cleanup levels and areas requiring remedial action will be resolved by this fall. We will then prepare a final permit application for the entire Richmond Field Station Remediation Project encompassing all phases outlined in the CEQA Initial Study currently in public and agency review. We will be working closely with the RWQCB, ACOE, USFWS, and BCDC to develop a final marsh design and habitat mitigation and monitoring plan for Western Stege Marsh.

Therefore, to continue the cleanup of this high-priority toxic hot spot, we respectfully request this permit modification to allow for the completion of previously permitted work (remainder of Subunit 2A) and the addition of the areas in Subunit 2B (Areas M3 and M1a) as described above.

We appreciate your consideration of this request. Please call me at (925) 274-1100 if you have any questions.

Sincerely,



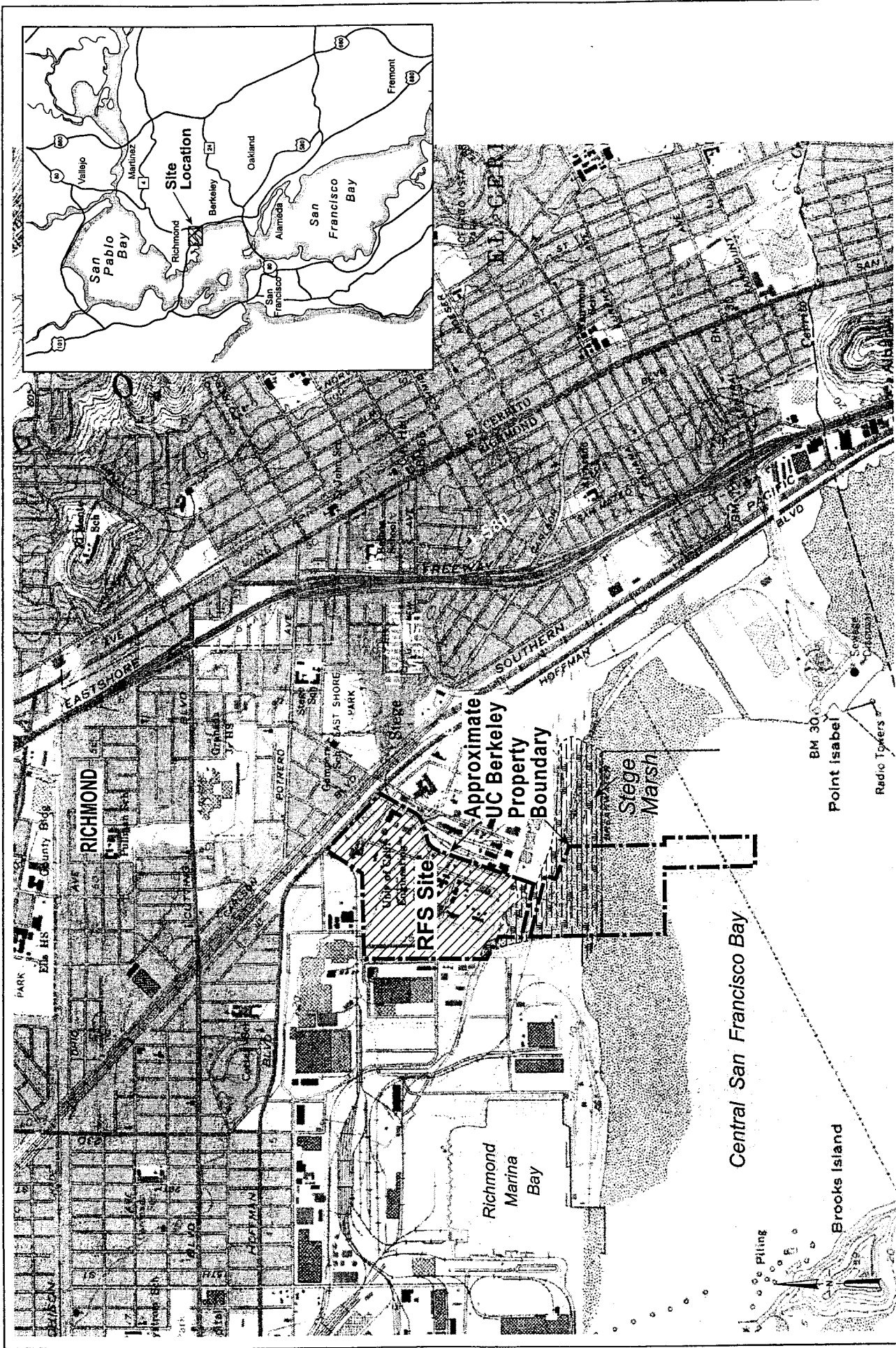
Diane K. Mims
Associate/Sr. Engineer

Attachments:
Figures

Cc: Mike Hryciw, Capital Projects, University of California Berkeley
Mark Frieberg, , Environment, Health, and Safety, UC Berkeley
Karl Hans, Environment, Health, and Safety, UC Berkeley
Anna Moore, Environment, Health, and Safety, UC Berkeley
Pat Schlesinger, University Counsel, University of California General Counsel
Mary Esper, URS Corporation
Jane Anderson, Zeneca Inc.
Bill Carson, LFR
Cecil Felix, Regional Water Quality Control Board
Dan Bufford, USFWS
Bob Batha, BCDC
File

Reference

Jules Evens. Personal Communication February 27 and March 11, 2003. Ornithologist,
Avocet Research Associates, report in progress.



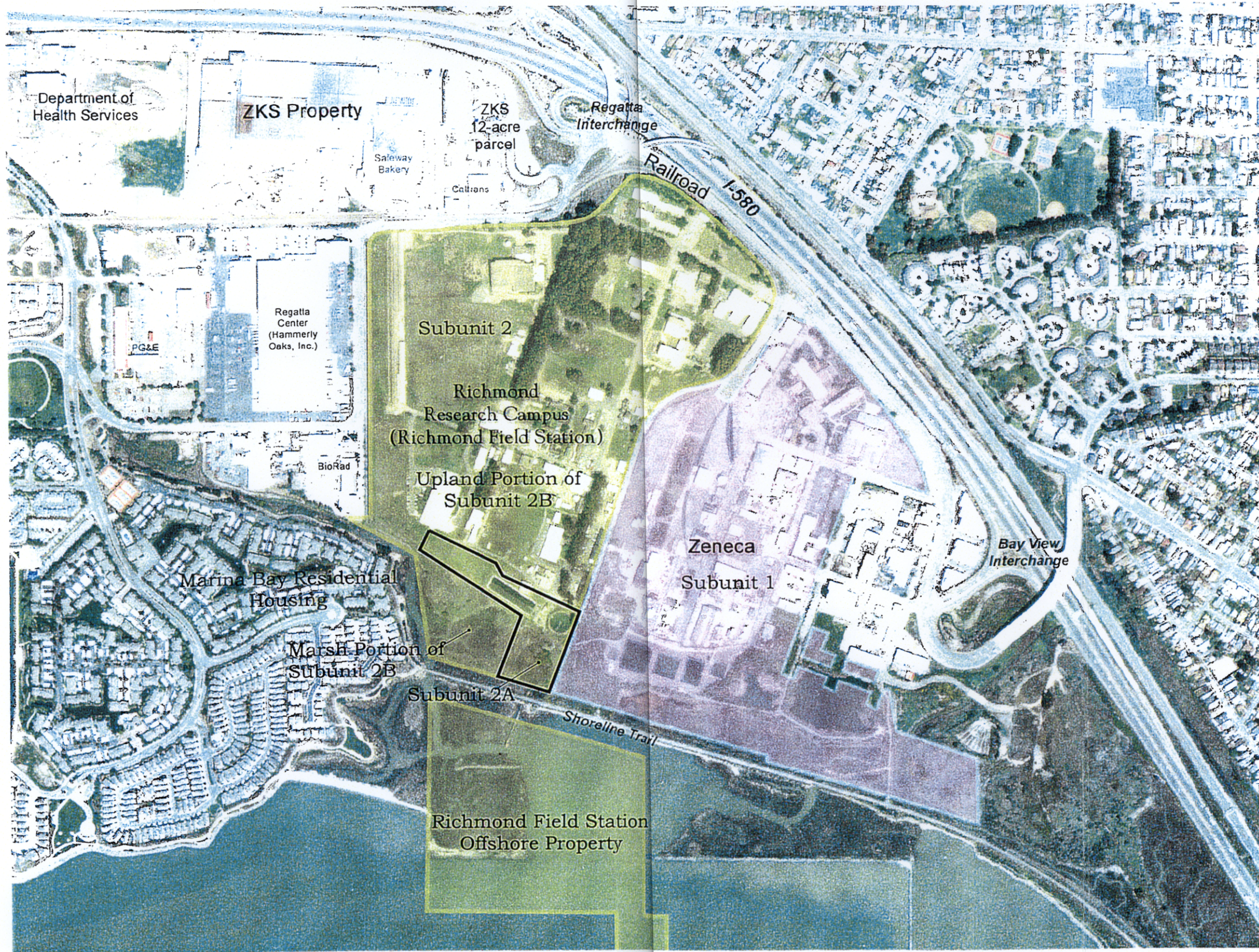
UNIVERSITY OF CALIFORNIA,
 BERKELEY
 RICHMOND FIELD STATION
 SITE LOCATION MAP

Project No. 26814100
 UC Berkeley
 Richmond Field Station



0 3000 feet
 Map Source: USGS, 7.5 min. Quadrangle map,
 Richmond, California, 1980 revised

Figure
 1



LEGEND

- Zeneca Property (Subunit 1)
- Richmond Field Station Property (Subunit 2 & Offshore Property)



Note: Offshore property located south of the EBRPD Bay Trail is not included within Subunit 2. The boundary of Subunit 2a is approximate.

Project No.
26814100

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University of California, Berkeley
Richmond Field Station

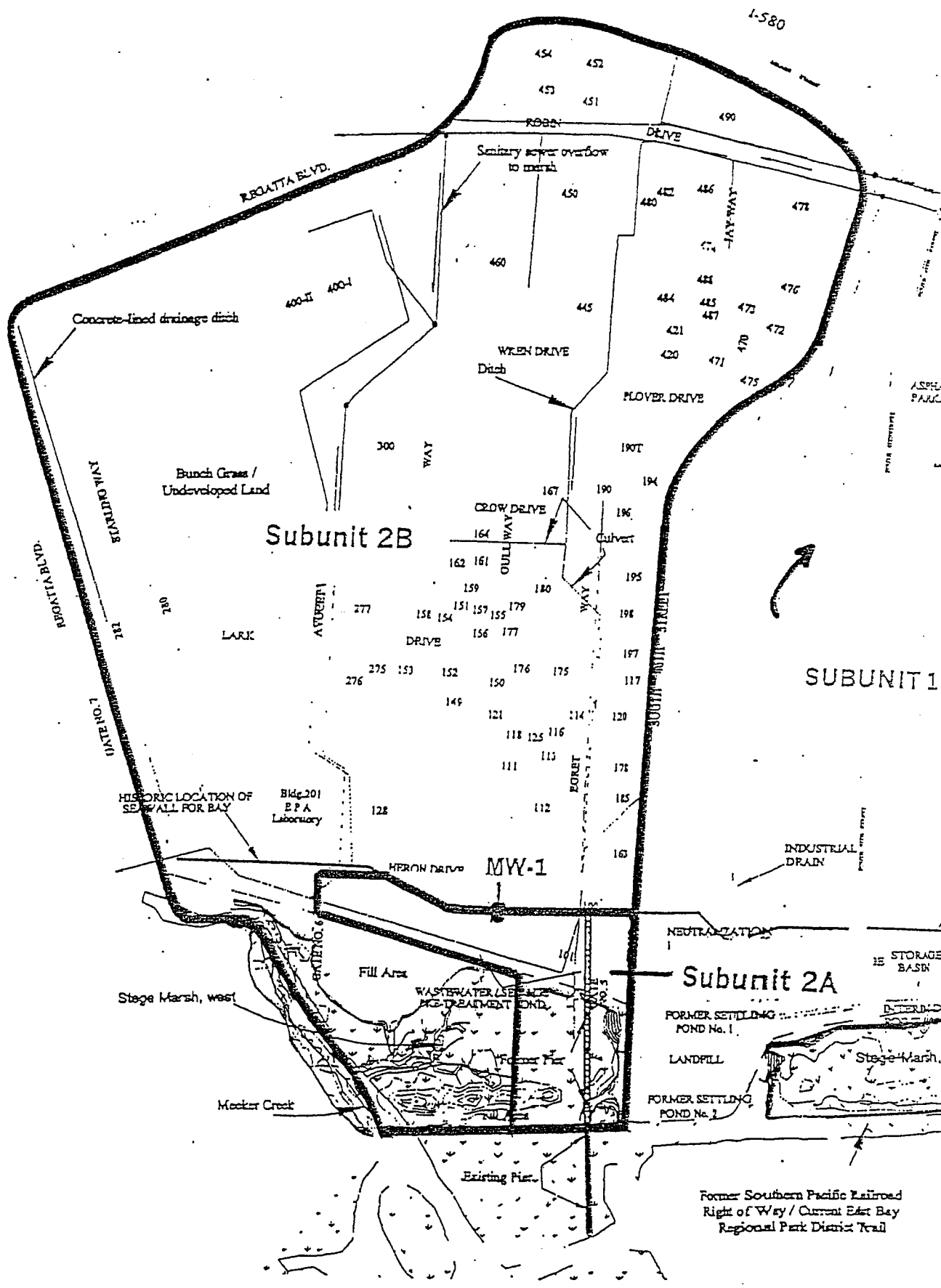
URS

**Subunits 2A and 2B
Locations and Boundaries**

March 2003

not to scale

Figure 2



Subunits 2A and 2B
Locations and Boundaries

Figure 3



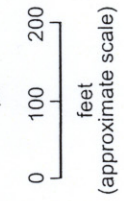
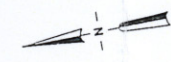
LEGEND

Remediation Schedule

Phase 1	2002 (UCB FY 2002/2003)
Phase 2	2003 (UCB FY 2003/2004)
Phase 3	2004 (UCB FY 2004/2005)
Phase 4	2005 (UCB FY 2005/2006)
Phase 5	2006 (UCB FY 2006/2007)

Area 1 = Subunit 2A Area 1
U1 = Subunit 3B Upland AOC 1
M1 = Subunit Marsh AOC 1

Subunit 2A Boundary
Property Boundary



Notes:

1. Areas are approximate and will be refined based upon 2003 additional characterization results and CAL EPA approval.
2. Shaded areas indicate boundary of area to be addressed during the identified remedial phase. Remedial activities being considered for each area include excavation, capping, in-place management or a combination of these activities.

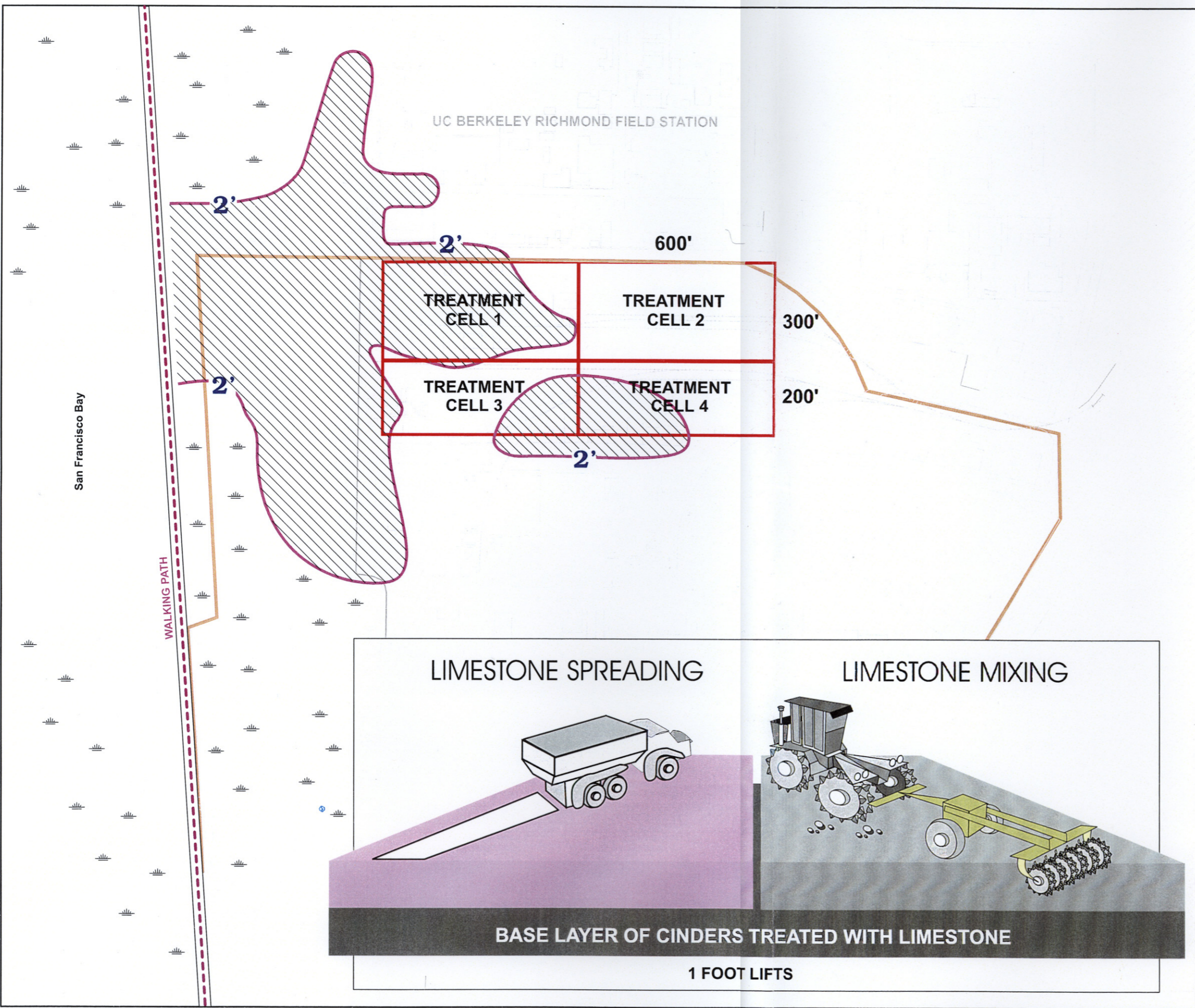


Project No. 26814100
 UC Berkeley
 Richmond Field Station

**PROPOSED PHASED
 REMEDIATION SCHEDULE**

**Figure
 4**

UNSATURATED CINDER.CDR 081400

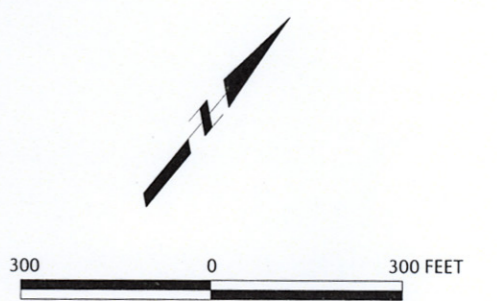


LEGEND

- Approximate Zeneca Richmond Facility property boundary
- Estimated thickness of cinder (feet); Depiction of cinders on UC Berkeley Richmond Field Station is based on information provided by UC Berkeley
- Area where greater than 2 feet of cinders were encountered; unsaturated zone cinders will be excavated for on-site treatment
- Treatment cells where excavated cinder will be treated with limestone
- Wetland areas

CELL		APPROX. CAPACITY
1	600' x 300' x 1' =	6500 cy
2	600' x 300' x 1' =	6500 cy
3	600' x 200' x 1' =	4500 cy
4	600' x 200' x 1' =	4500 cy

Notes:
Treated cinder material will be placed on site beneath the cap.

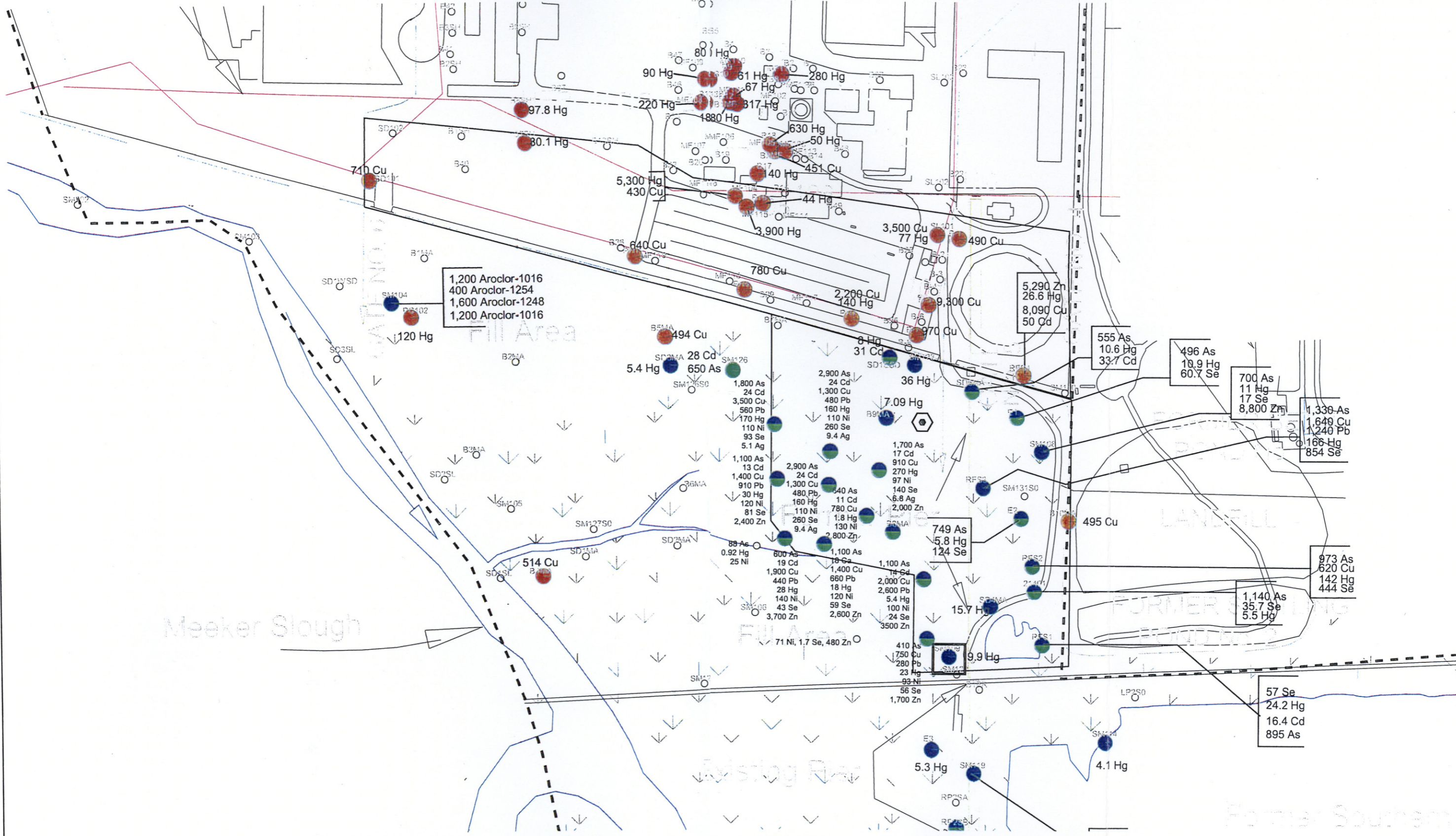


**Unsaturated Zone Neutralization
Conceptual Implementation Plan**

Zeneca Richmond Facility, Richmond, California



Figure 5



LEGEND

Ecological Receptors

- Red-tailed Hawk
- Salt Marsh Harvest Mouse
- California Clapper Rail



Euhaustorius (Solid Phase) - 0% survival



Benthic Community Survey (No benthic organisms observed)



NOTES :

Project No.
51-09967067.00

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Richmond Field Station

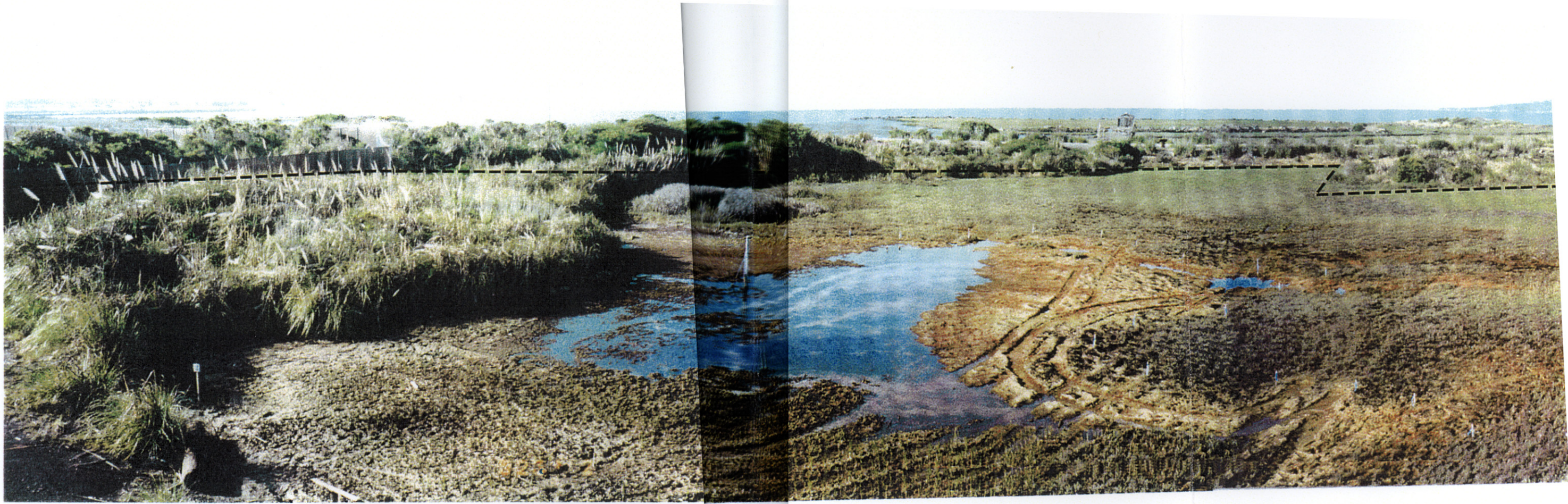


Tier 2 Evaluation of Effects to Wildlife
(E-SSTL Exceedances)

May 2002

Scale 1" = 125'

Figure 6



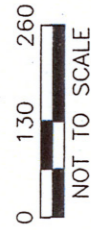
Pre-existing Conditions
Figure 7



LEGEND

- MARSH 150' BUFFER ZONE
- SILT SCREEN
- EXISTING SOIL BERM
- EXISTING CLAY BERM
- TEMPORARY FENCE
- EXISTING TEMPORARY FENCE
- FENCE GATE (ALL FENCES)
- PROPOSED HAUL ROUTES
- TREATMENT PAD
- STOCKPILE AND WORK AREAS
- CLEAN STOCKPILE
- APPROX. AOC BOUNDARY
- 12 KV OVERHEAD WIRES
- SD - STORM DRAIN
- TP - TREATMENT PAD
- SANITARY SEWER
- EASTERN STORM DRAIN OUTFALL
- PROJECT AREA BOUNDARY
- PROPERTY LINE

*NOTE: REMEDIAL ACTIVITIES FOR PHASE 1 HAVE BEEN COMPLETED AND THE RESTORATION DESIGN IS CURRENTLY BEING DEVELOPED AND NEGOTIATED WITH THE APPROPRIATE STATE AND FEDERAL AGENCIES



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Richmond Field Station

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



PROJECT AREA,
AOC LOCATIONS, AND
ASSOCIATED REMEDIAL
DESIGN ACTIVITIES

Figure
8

LEGEND

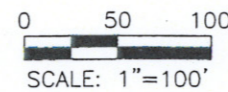
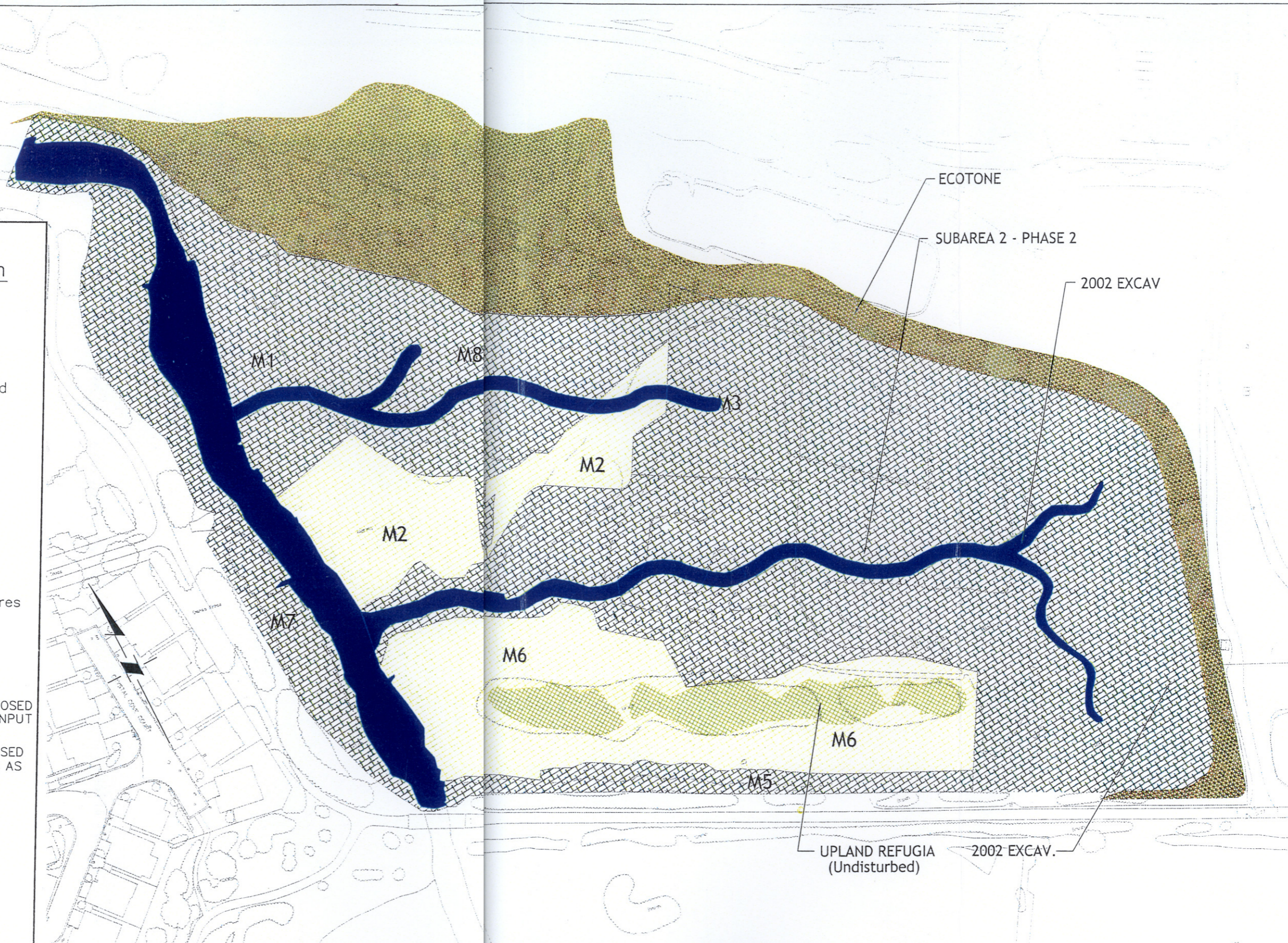
Approximate Post Mitigation Acreages

Acres Created

-  Wetland Acreage Created
-  Waters Created
-  Ecotone Created
-  Areas M6 and M2 Undisturbed Areas

Total Lost = Approx. 7.1 Acres
 Total Created = Approx. 11.8 Acres
 Ratio = 1.66:1

- 1) ACREAGES ARE APPROXIMATE
- 2) HABITAT TYPES FOR PROPOSED RESTORATION AREAS WILL BE PROPOSED DURING DESIGN PHASE BASED ON INPUT FROM AGENCIES
- 3) BOUNDARY OF MITIGATION AREA BASED ON RWQCB SUBUNIT 2 BOUNDARIES AS DESIGNATED IN ORDER 01-102



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Western Stege Marsh
 Post Remediation
 Mitigation Areas

Figure
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