

TO: ADMINISTRATIVE RECORD FILE

FROM: ALAN K. LEE, BASE CLOSURE MANAGER
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DN: cn=US, o=US Government,
ou=DoD, ou=PKI, ou=USN,
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Date: 2014.11.18 11:12:00 -08'00'

DATE: November 18, 2014

SUBJECT: Non-Significant (minor) Changes to the Selected Remedies Presented in the Records of Decisions for Parcels B, D-1, G, UC-1, and UC-2, Hunters Point Naval Shipyard, San Francisco, California.

REF: Navy, 2009a. Final Amended Parcel B Record of Decision, Hunters Point Shipyard, San Francisco, California. January 14. DCN- CHAD-3213-0014.

Navy, 2009b. Final Record of Decision for Parcels D-1 and UC-1, Hunters Point Shipyard, San Francisco, California. July 24. DCN- CHAD-3213-0030-0019.

Navy, 2009c. Final Record of Decision for Parcel G, Hunters Point Shipyard, San Francisco, California. February 18. DCN- CHAD-3213-0030-0009.

Navy, 2009d. Final Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California. October 28. DCN- CHAD-3213-0039-0007.

ATTACHMENTS: Attachment 1: Site Location Map
Attachment 2: ARICs for VOC Vapors at Parcel B
Attachment 3: ARICs for VOC Vapors at Parcel D-1
Attachment 4: ARICs for VOC Vapors at Parcel G
Attachment 5: ARICs for VOC Vapors at Parcels UC-1
Attachment 6: ARICs for VOC Vapors at Parcel UC-2

Purpose

The Final RODs for Parcels B, D-1, G, UC-1, and UC-2 were issued pursuant to the United States Department of the Navy's (Navy) authority as the lead federal agency for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for remedy selection at sites at the former Hunters Point Naval Shipyard (HPNS) pursuant to Sections 104 and 120 of CERCLA, Executive Order 12580, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] part 300). The lead regulatory agency for overseeing site cleanup at HPNS is the United States Environmental Protection Agency (USEPA). In addition to the USEPA, state agencies including

the California Regional Water Quality Control Board San Francisco Bay Region and the California Department of Toxic Substances Control oversee the site cleanup at former HPNS pursuant to the Federal Facilities Agreement (FFA).

This memorandum describes and documents change to the remedies described in the Final Records of Decision (ROD) for Parcels B (Navy 2009a), D-1 and UC-1 (Navy 2009b), G (Navy 2009c), and UC-2 (Navy 2009d), Hunters Point Naval Shipyard, San Francisco, California (Attachment 1), and summarizes the human health risk assessment (HHRA) results that led to the modifications to area requiring institutional controls (ARICs) established in these RODs.

The Remedial Action Objectives (RAOs) as set forth in the Parcel B, D-1 and UC-1, G, and UC-2 RODs, include preventing/minimizing exposure to volatile organic compounds (VOC) in soil gas at concentrations that would pose an unacceptable risk via indoor inhalation of vapors. In order to achieve this RAO, the selected remedies for these parcels include institutional controls (ICs) to implement land use restrictions that would limit the exposure of future landowners or users of the property to hazardous substances present on the property, including activity restrictions at specific locations within each parcel due to the presence of VOC vapors. These locations are identified in the RODs as the ARIC for VOC vapors.

The ARIC for VOC vapors include all of Parcel B except Redevelopment Block 4 (Navy 2009a), all of Parcels D-1 and UC-1 (Navy 2009b), all of Parcel G (Navy 2009c), and Redevelopment Block 10 within Parcel UC-2 (Navy 2009d). The RODs provide for modification of the ARICs for VOC vapors by the FFA signatories due to a reduction in risk over time to less than 10^{-6} or in response to further soil, vapor, and groundwater sampling. The Navy has completed post-ROD soil vapor investigations (SVIs) in these parcels with an objective of modifying the ARICs for VOC vapors.

Background

The Remedial Action Objectives (RAOs) identified for Parcel B (Navy, 2009a), Parcels D-1 and UC-1 (Navy, 2009b), Parcel G (Navy 2009c), and Parcel UC-2 (Navy 2009d) include, “*Prevent [or minimize] exposure to VOCs in soil gas at concentrations that would pose unacceptable risk via indoor inhalation of vapors*”. As part of the remedy to meet this RAO, the RODs require a soil gas survey for the following purposes:

- To evaluate potential vapor intrusion risks,
- To Identify COCs for which risk-based numeric action levels for VOCs in soil gas would be established (based on a cumulative risk of 10^{-6}),
- To identify where the initial Area Requiring Institutional Controls (ARIC) for VOCs would be retained and where they would be released, and
- To evaluate the need for additional remedial action in order to remove ARICs.

The remedy to address risk from indoor inhalation of VOCs also includes institutional controls (ICs) to implement land use restrictions that would limit the exposure of future landowners or users of the property to hazardous substances present on the property, including activity restrictions at specific locations within each parcel due to the presence of VOC vapors. These locations are identified in the RODs as the ARIC for VOC vapors.

In accordance with amended Parcel B ROD (Navy 2009a), *“The ARIC for VOC vapors may be modified by the FFA signatories and CDPH if IR Sites are involved, as the soil contamination areas and groundwater contaminant plumes that are producing unacceptable vapor inhalation risks are reduced over time or in response to further soil, vapor, and groundwater sampling and analysis for VOCs that establishes that areas now included in the ARIC for VOC vapor do not pose an unacceptable potential exposure risk to VOC vapors”*. Similar verbiages regarding modifying the original ARIC boundaries are also included in the Parcels D-1, G, UC-1 and UC-2 RODs.

Soil Vapor Investigations and Modifying the ARIC for VOC Vapors

Following publication of the RODs, between 2010 and 2013, Sealaska Environmental Services (SES, 2013) conducted a soil vapor investigation (SVI) involving HPNS Parcels B, D-1, G, and UC-2. During this study, samples from 110 discrete sampling locations within 89 1-acre grids were assessed. The study included an assessment of risks to human health via the vapor intrusion pathway both for residential and industrial scenarios. The second phase of SVI at HPNS, which involved Parcel UC-1, was conducted by Engineering/Remediation Resource Group (ERRG 2014) between 2013 and 2014. During this study samples from 10 discrete sampling locations within 10 1-acre grids. The SVIs included an assessment of risks to human health via the vapor intrusion pathway both under residential and industrial scenarios. If risk estimates in a given grid were less than residential scenario thresholds, the grid could be excluded from the ARIC for VOC vapors; while if risk thresholds were exceeded in a grid, then the grid must be maintained in the ARIC for VOC vapors.

The SVI investigations conducted at Parcels B, D-1, G, and UC-2 from 2010 to 2013 (SES 2013) did not identify any chemical of potential concern (COPC) exceeding the SGALs in samples from 22 of the 89 grids (4 in Parcel B, 9 in Parcel D-1, 8 in Parcel G, and 1 in Parcel UC-2). These grids were eliminated from further human health risk evaluation. Another 45 grids (17 in Parcel B, 13 in Parcel D-1, 13 in Parcel G, and 2 in Parcel UC-2) contained potentially significant COPC concentrations (but were still below SGALs). The remaining 23 grids (8 in Parcel B, 8 in Parcel D-1, 6 in Parcel G, and 1 in Parcel UC-2) contained COPC concentrations exceeding the SGALs. Locations with potentially significant COPC concentrations and COPC concentrations exceeding the SGALs were further evaluated for human health risks through a Tier 2 chemical and health risk modeling. Based on the Tier 2 modeling, 23 grids exceeded the

de minimis cumulative cancer risk threshold of 1×10^{-6} for residential (unrestricted) land use and will be maintained in the ARIC for VOC vapors. These grids include: D6, G5, I4, I5, I6, J4, J5, and L4 (Parcel B); B2, C7, D1, D2, D3, D6, D7, and E2 (Parcel D-1); A1, A2, B2, G4, H4, and H5 (Parcel G); and K12 (UC-2).

Soil gas investigation conducted at Parcel UC-1 in 2013-2014 (ERRG 2014) did not identify any COPC exceeding the SGALs in samples from 1 of the 10 grids and was eliminated from further human health risk evaluation. The remaining 9 grids were further evaluated for human health risks through a Tier 2 chemical and health risk modeling. Based on the Tier 2 modeling, 2 grids (grids 5 and 9) exceeded the *de minimis* cumulative cancer risk threshold of 1×10^{-6} for residential (unrestricted) land use and will be maintained in the ARIC for VOC vapors (Attachment 5). However, based on other considerations including the conceptual site model (CSM), identified risks in adjacent grids, and the uncertainty analysis, the ARIC for VOC vapors were ultimately retained for grids 5 through 10 (Attachment 6).

It should be noted that the RODs for Parcels UC-1 and UC-2 specify that action levels for soil gas should be based on a cumulative cancer risk range of 10^{-6} . However, the Tier 1 and Tier 2 assessments performed for these parcels evaluated data against the most conservative *de minimis* cancer risk threshold of 1×10^{-6} , in accordance with the accepted methodology for vapor intrusion risk assessments at HPNS.

Attachments 2 thru 7 depict the revised ARICs for VOC vapors at Parcels B, D-1, G, UC-1 and UC-2.

Description of Minor Change to the Remedies

In accordance with NCP Section 300.435(c)(2), and the U.S. Environmental Protection Agency (EPA) guidance document “A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents” (EPA, 1999), post-ROD modifications fit into one of three categories, depending on the extent and scope of the modification: (1) minor changes, (2) significant changes, or (3) fundamental changes. A minor change usually arises during design and construction, when modifications are made to the functional specifications of the remedy to address issues such as performance optimization, new technical information, support agency/community concerns, and/or cost minimization. A minor change does not have a significant impact on the scope, performance, or cost of the remedy.

The change presented in the memorandum to file is considered non-significant (minor) as the modification is a change only to the specifications of the remedy to address new technical information, which for this case is soil gas investigation data. As described below, the change is not likely to have any significant impact on the scope, performance, or cost of the remedy

Scope: The change has altered the physical area of the response as the ARICs have been reduced in size. However, the type of remedy (i.e. ICs) and media (i.e. soil gas) to be addressed has not changed and therefore the impact on scope is considered insignificant.

Performance: The performance of the remedy including remedial goals and long-term reliability of the remedy has not changed and there is no impact to performance.

Cost: The cost remains within the +50 percent to -30 percent accuracy of the cost estimates provided in the RODs. The cost for proprietary controls, restrictive covenants, and other means to restrict land use and prohibited activities may be reduced since the physical area of the ARICs has been reduced. In general, the cost for IC compliance is minimal in comparison to the total remedial costs and impact on cost is considered insignificant.

This non-significant (minor) change remains protective of human health and the environment and continues to comply with applicable or relevant and appropriate requirements (ARARs) identified in the RODs, in accordance with CERCLA Section 121(d) (2), and NCP Section 300.430(f) (1) (ii) (B) (1) and (2). This Memo to File will become part of the Administrative Record files for HPNS Parcels B, D-1, G, UC-1, and UC-2. The revised ARICs for VOC vapors presented in this memorandum will also be documented in the Finding of Suitability to Transfer (FOST) documents for Parcels B, D-1, G, and UC-1/ UC-2.

References

Navy, 2009a. Final Amended Parcel B Record of Decision, Hunters Point Shipyard, San Francisco, California. January 14.

Navy, 2009b. Final Record of Decision for Parcels D-1 and UC-1, Hunters Point Shipyard, San Francisco, California. July 24.

Navy, 2009c. Final Record of Decision for Parcel G, Hunters Point Shipyard, San Francisco, California. February 18.

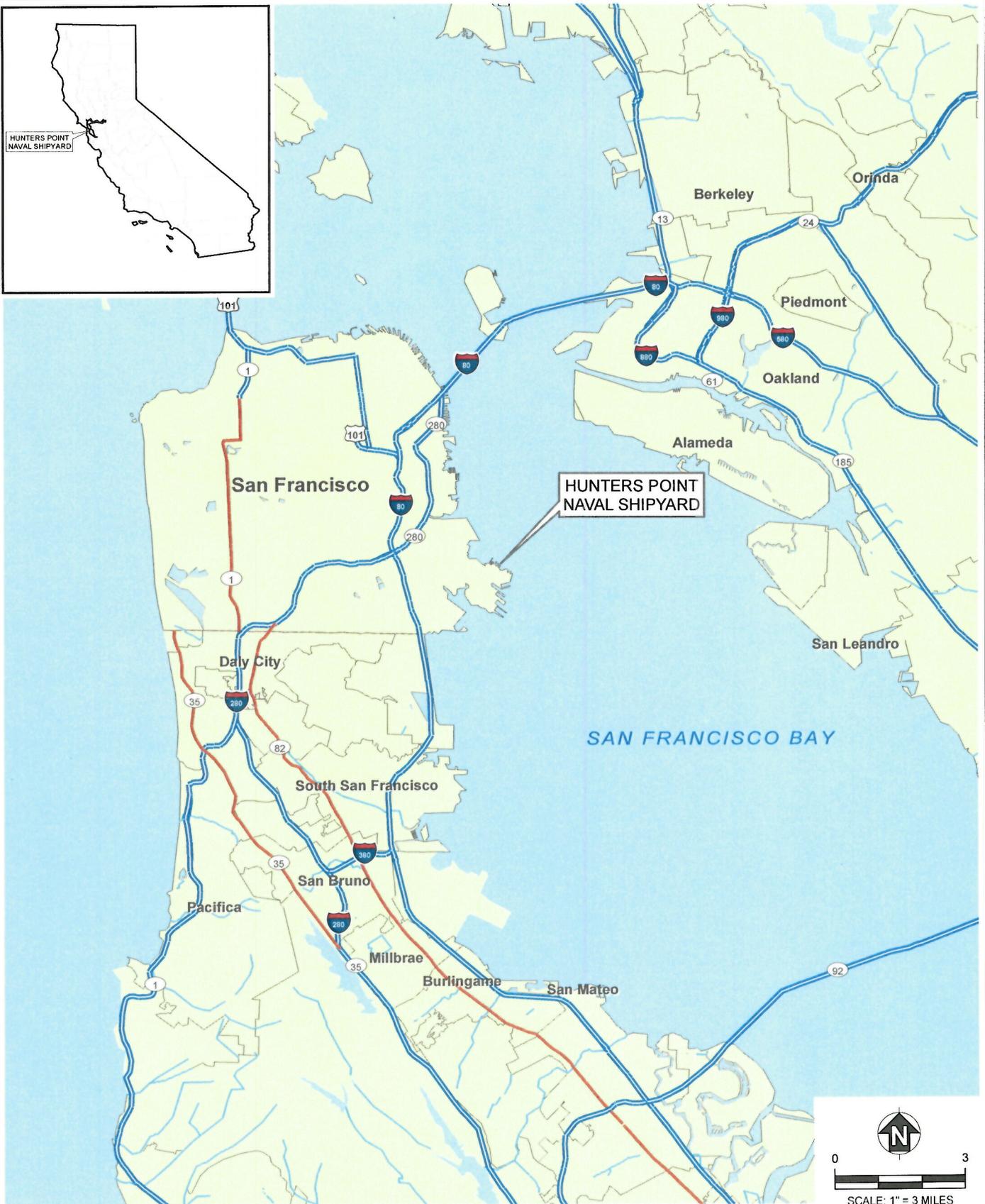
Navy, 2009d. Final Record of Decision for Parcel UC-2, Hunters Point Shipyard, San Francisco, California. October 28.

ERRG (Engineering/Remediation Resources Group, Inc.), 2014. Draft Technical Memorandum, Soil Vapor Investigation in Support of Vapor Intrusion Assessment at Parcel UC-1, Hunters Point Naval Shipyard, San Francisco, California. July.

SES (Sealaska Environmental Services, LLC), 2013. Final Technical Memorandum for Soil Vapor Intrusion at Parcels B, D-1, G, and UC-2, Hunters Point Naval Shipyard, San Francisco, California. March.

U.S. Environmental Protection Agency (EPA), 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. EPA 540-R-98-031. Office of Solid Waste and Emergency Response Directive 9200.1-23P, PB98-963241. July.

ATTACHMENT 1



SOURCE: ESRI WORLD STREET MAP DATA

W:\2011\2011-147-Navy-HPNS UC-1_UC-2\RA\GIS\Site Location Map.mxd Last updated: 2/21/2014 at 11:52:25 AM

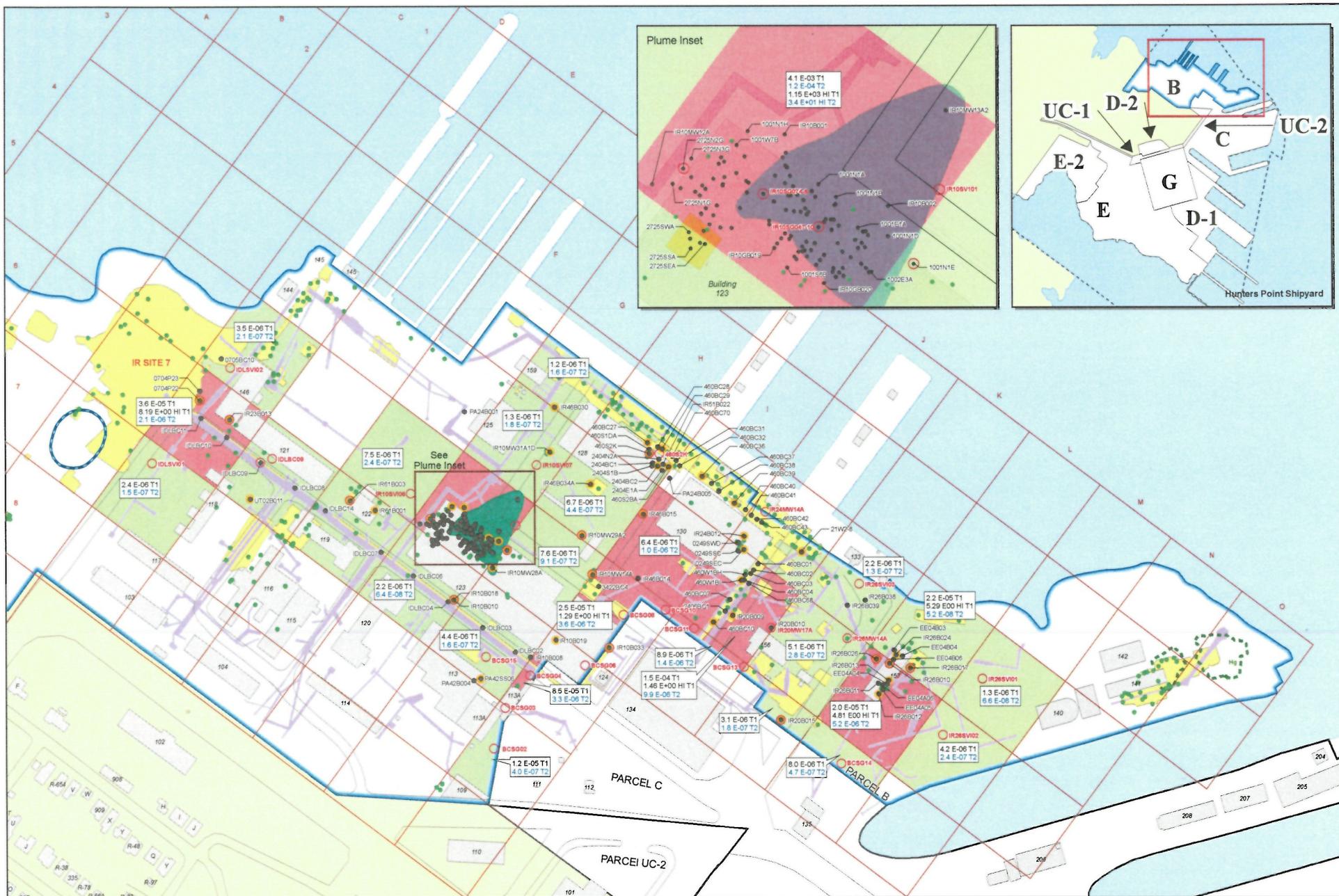


Engineering/Remediation Resources Group, Inc.
 115 Sansome Street, Suite 200
 San Francisco, California 94104
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CLIENT	DEPARTMENT OF THE NAVY BRAC PMO WEST
LOCATION	HUNTERS POINT NAVAL SHIPYARD SAN FRANCISCO, CALIFORNIA

SITE LOCATION MAP			
DRAWN BY	CHECKED BY	PROJECT NO	FIG NO
JJC 02/08/13	JS 02/08/13	2011-147	1

ATTACHMENT 2



- Volatile Detection in Prior Soil Sample
- No Volatile Detection in Prior Soil Sample
- Sampled SVI Probe Location - VOCs
- Final Tier Risk from VOCs Less Than 1.0 E-06
- Final Tier Risk from VOCs Greater Than 1.0 E-06

- Approximate Extent of VOC Plume, September 2009
- Previous Mercury TCRA Excavation
- Previous Pipeline Excavation
- Previous Radiological Excavation
- Previous Other Excavation
- Previous Methane TCRA Excavation

- Parcel B Boundary
- Other Parcel Boundary
- One-Acre Grid Square
- Non-Navy Property
- San Francisco Bay
- Building
- Road Edge

Notes

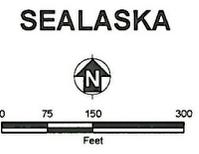
Vapor Intrusion (VI) Residential Exposure Estimates:

- Estimate from Tier 1 Risk Assessment shown in BLACK
- Estimate from Tier 2 Risk Assessment shown in BLUE

Green grid squares without VI Residential Exposure Estimates shown indicate that the T1 VI estimate fell below the action level.

Non-colored grid squares were not sampled.

HHRA Human Health Risk Assessment
 SVI Soil Vapor Intrusion
 TCRA Time-Critical Removal Action
 VOC Volatile Organic Compound

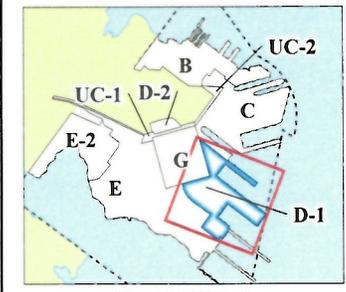
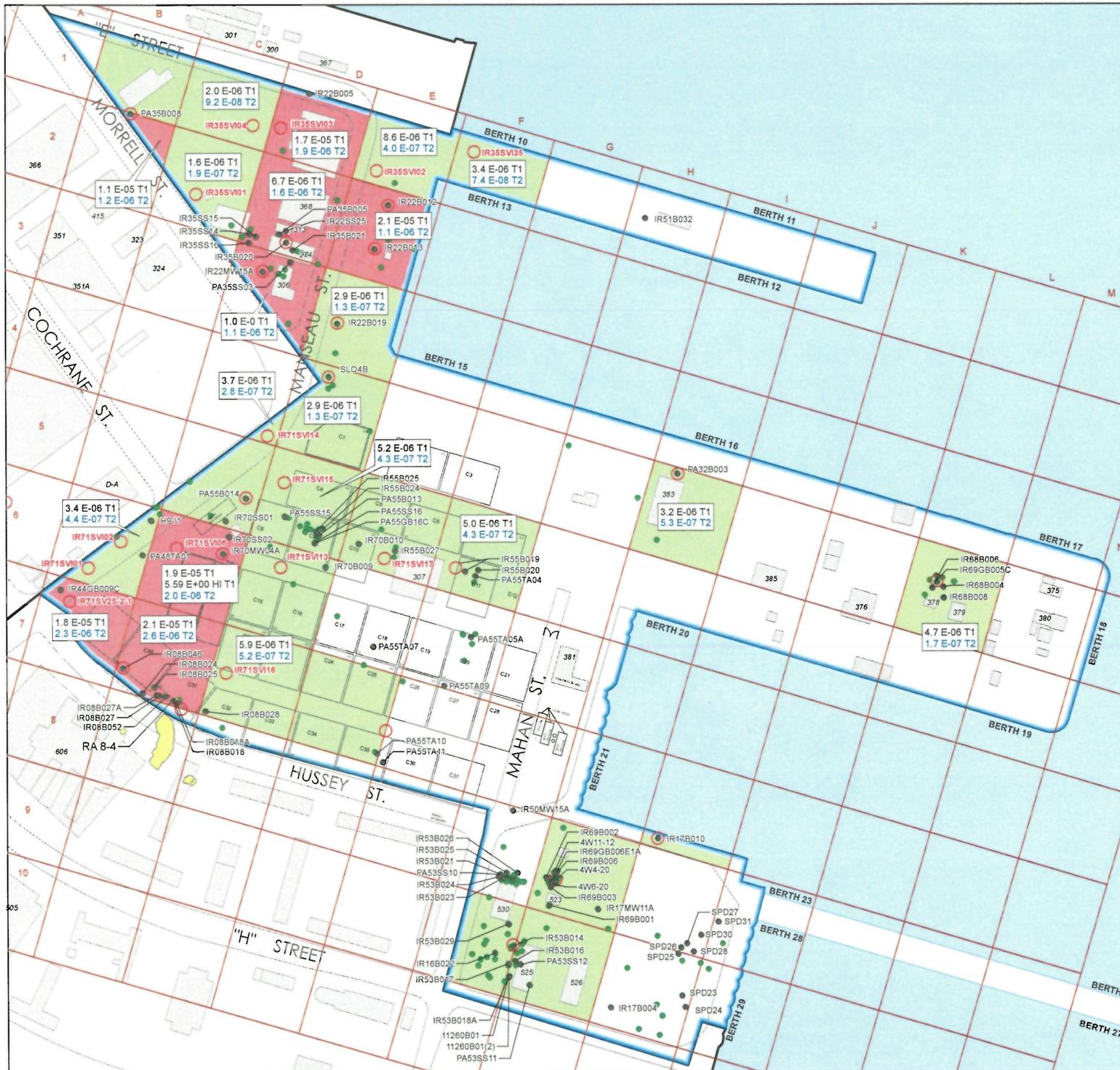


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Technical Memorandum
 Soil Vapor Investigation, Parcels B, D-1, G, UC-2

FIGURE 8-2
TIER 2 HHRA RESIDENTIAL EXPOSURE
CANCER RISK ESTIMATES FROM
VAPOR INTRUSION EVALUATION OF VOCs
PARCEL B

ATTACHMENT 3



- Hunters Point Shipyard
- Volatile Detection in Prior Soil Sample
 - No Volatile Detection in Prior Soil Sample
 - Sampled SVI Probe Location - VOCs
 - Final Tier Risk from VOCs Less Than 1.0 E-06
 - Final Tier Risk from VOCs Greater Than 1.0 E-06
 - Radiological Screening Pad/Building
 - Previous Removal Action Excavation
 - ▭ Parcel D-1 Boundary
 - ▭ Other Parcel Boundary
 - One-Acre Grid Square
 - Non-Navy Property
 - San Francisco Bay
 - ▭ Building
 - Road Edge

Notes:

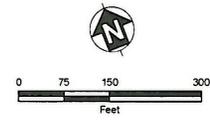
Vapor Intrusion (VI) Residential Exposure Estimates:

- Estimate from Tier 1 Risk Assessment shown in BLACK
- Estimate from Tier 2 Risk Assessment shown in BLUE

Green grid squares without VI Residential Exposure Estimates shown indicate that the T1 VI estimate fell below the action level.

Non-colored grid squares were not sampled.

HHRA Human Health Risk Assessment
 SVI Soil Vapor Intrusion
 VOC Volatile Organic Compound

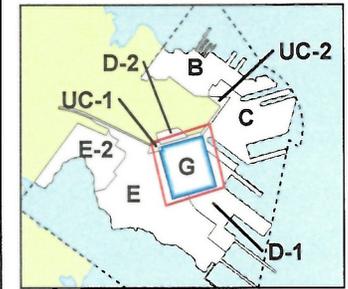


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FIGURE 8-3 TIER 2 HHRA RESIDENTIAL EXPOSURE CANCER RISK ESTIMATES FROM VAPOR INTRUSION EVALUATION OF VOCs PARCEL D-1

ATTACHMENT 4



Hunters Point Shipyard

- Volatile Detection in Prior Soil Sample
- No Volatile Detection in Prior Soil Sample
- Sampled SVI Probe Location - VOCs
- Final Tier Risk from VOCs Less Than 1.0 E-06
- Final Tier Risk from VOCs Greater Than 1.0 E-06
- Previous Removal Action Excavation
- Previous Radiological Excavation
- Parcel G Boundary
- Other Parcel Boundary
- One-Acre Grid Square
- Non-Navy Property
- San Francisco Bay
- Building
- Road Edge

Notes:

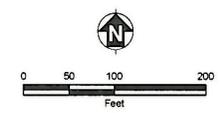
Vapor Intrusion (VI) Residential Exposure Estimates

- Estimate from Tier 1 Risk Assessment shown in BLACK
- Estimate from Tier 2 Risk Assessment shown in BLUE

Green grid squares without VI Residential Exposure Estimates shown indicate that the T1 VI estimate fell below the action level.

Non-colored grid squares were not sampled.

HHRA Human Health Risk Assessment
 SVI Soil Vapor Intrusion
 TCRA Time-Critical Removal Action
 VOC Volatile Organic Compound



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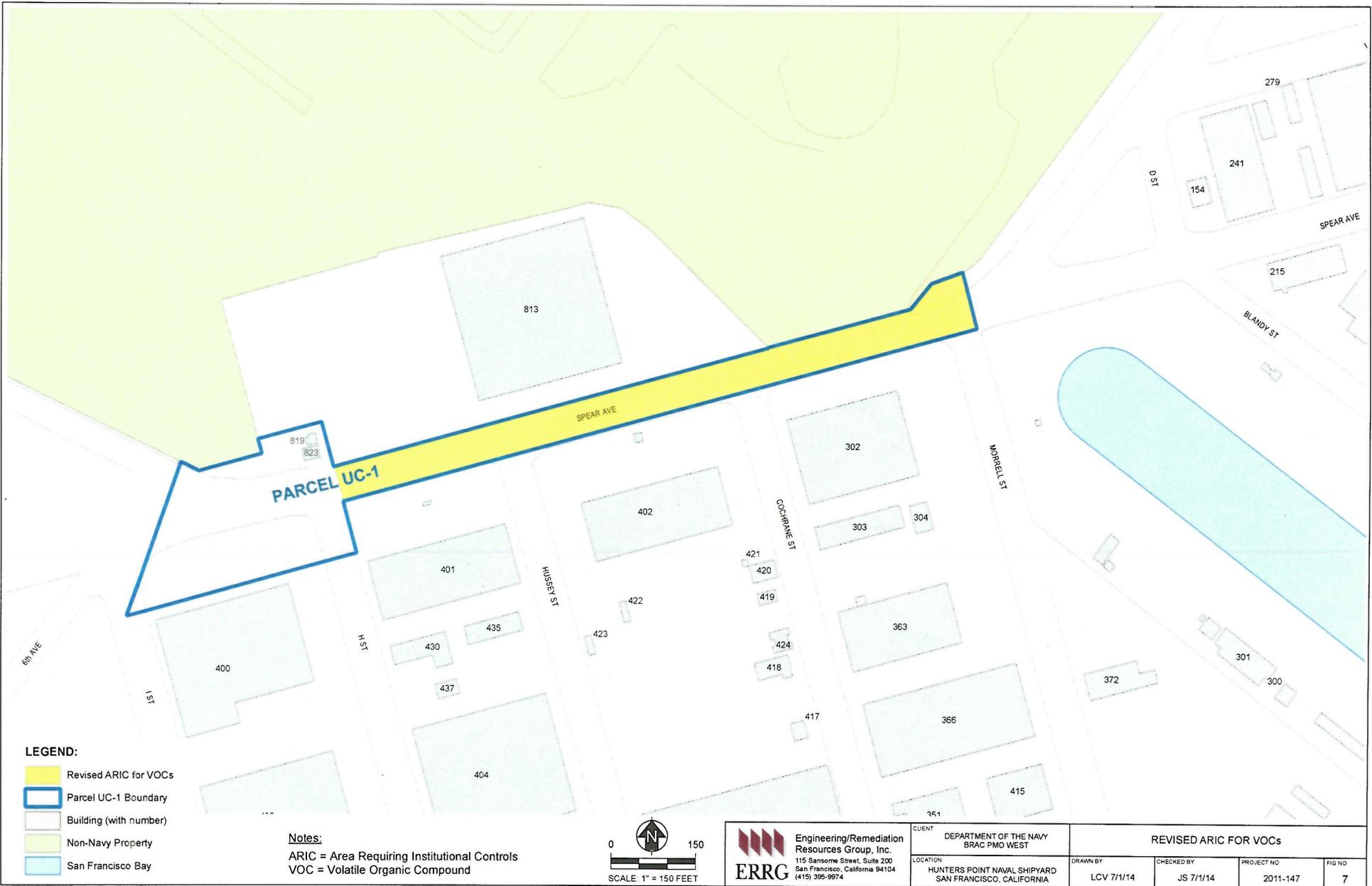
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 Soil Vapor Investigation, Parcels B, D-1, G, UC-2

FIGURE 8-4 TIER 2 HHRA RESIDENTIAL EXPOSURE CANCER RISK ESTIMATES OF VOCs PARCEL G

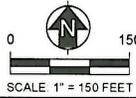
ATTACHMENT 5

W:\2011\2011-147-Navy HPNS UC-1\UC-1\2\FACIS\Pop_Boundaries for Areas Requiring Institutional Controls for VOC Vapors.mxd Last updated: 7/22/2014 at 4:31:43 PM



- LEGEND:**
- Revised ARIC for VOCs
 - Parcel UC-1 Boundary
 - Building (with number)
 - Non-Navy Property
 - San Francisco Bay

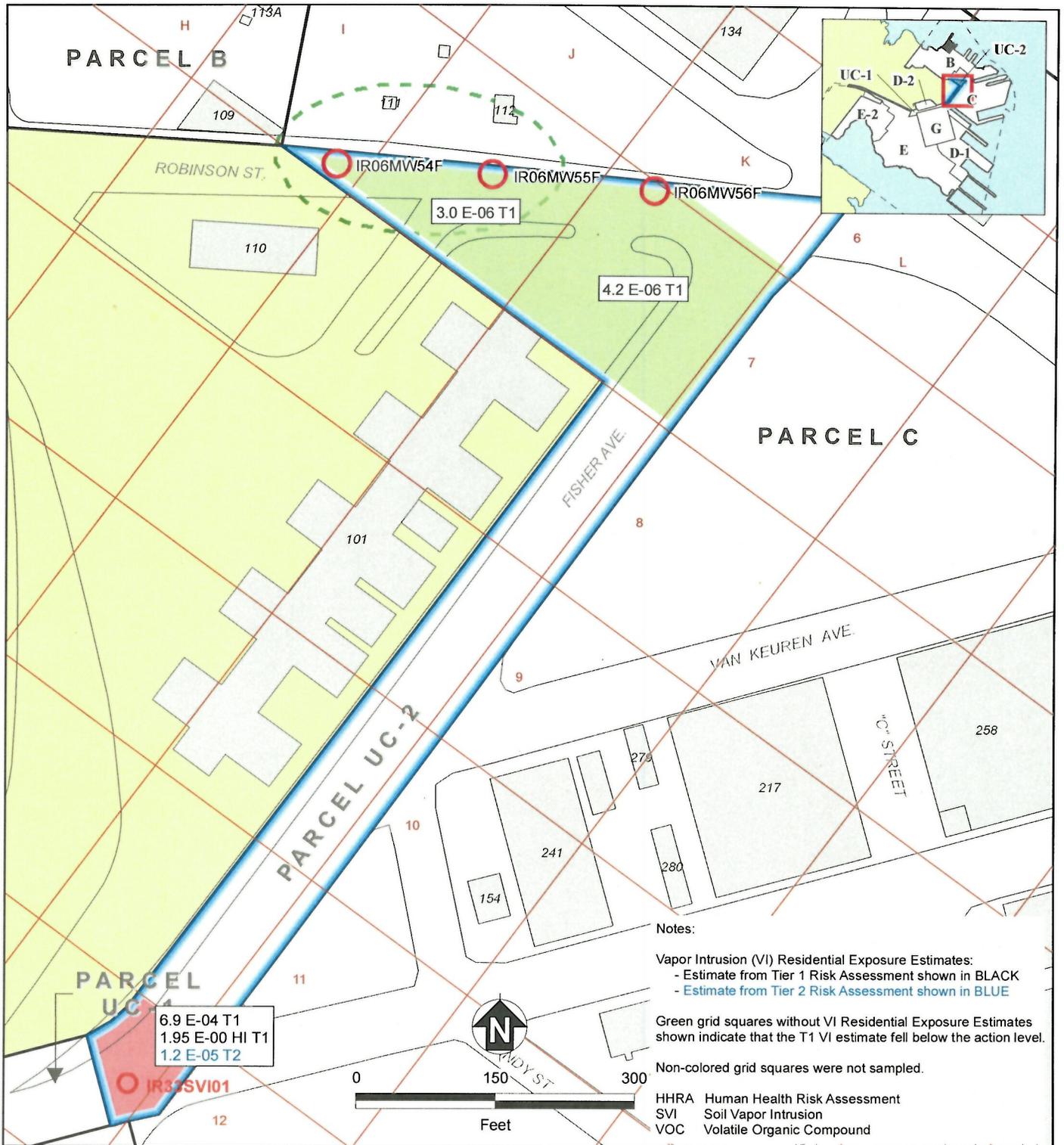
Notes:
 ARIC = Area Requiring Institutional Controls
 VOC = Volatile Organic Compound



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CLIENT	DEPARTMENT OF THE NAVY BRAC PMO WEST		REVISED ARIC FOR VOCs		
LOCATION	HUNTERS POINT NAVAL SHIPYARD SAN FRANCISCO, CALIFORNIA	DRAWN BY	LCV 7/1/14	CHECKED BY	JS 7/1/14
		PROJECT NO	2011-147	FIG NO	7

ATTACHMENT 6



Notes:

Vapor Intrusion (VI) Residential Exposure Estimates:
 - Estimate from Tier 1 Risk Assessment shown in BLACK
 - Estimate from Tier 2 Risk Assessment shown in BLUE

Green grid squares without VI Residential Exposure Estimates shown indicate that the T1 VI estimate fell below the action level.

Non-colored grid squares were not sampled.

HHRA Human Health Risk Assessment
 SVI Soil Vapor Intrusion
 VOC Volatile Organic Compound

- Sampled SVI Probe Location - VOCs
- Final Tier Risk from VOCs Less Than 1.0×10^{-6}
- Final Tier Risk from VOCs Greater Than 1.0×10^{-6}
- Area of Elevated VOCs in Groundwater
- Parcel UC-2 Boundary
- Other Parcel Boundary
- One-Acre Grid Square
- Non-Navy Property
- San Francisco Bay
- 307 Building
- Road Edge

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FIGURE 8-5
TIER 2 HHRA RESIDENTIAL EXPOSURE
CANCER RISK ESTIMATES FROM
VAPOR INTRUSION EVALUATION OF VOCs
PARCEL UC-2