



**PROPOSED PLAN/DRAFT REMEDIAL ACTION PLAN  
FORMER MARE ISLAND NAVAL SHIPYARD  
Installation Restoration Site 17 and Building 503 Area  
Vallejo, California**

May 2015

**U.S. NAVY ANNOUNCES PROPOSED PLAN / DRAFT REMEDIAL ACTION PLAN**

The Department of the Navy encourages the public to provide comments on its proposed cleanup plan for the Installation Restoration Site 17 (IR17) and Building 503 Area at the former Mare Island Naval Shipyard, Vallejo, California (Figure 1). The Navy has worked with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), the San Francisco Bay Regional Water Quality Control Board (Water Board), and the U.S. Environmental Protection Agency (EPA), to evaluate cleanup options for the IR17 and Building 503 Area including the proposed cleanup plan.

**INTRODUCTION**

The Navy is responsible for investigating and remediating contamination that resulted from historical Navy operations at the IR17 and Building 503 Area. These investigations were completed according to the requirements of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**<sup>1</sup>. The Navy, in consultation with the regulatory agencies, will select a final cleanup action for the site in the **Record of Decision (ROD)/Final Remedial Action Plan (RAP)** after all information submitted during the public comment period has been reviewed and considered. The Navy may modify its proposed cleanup plan or select another cleanup plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives. See the instructions on how to comment in the text box on page 12.

This **Proposed Plan/Draft RAP** summarizes the remedial alternatives the Navy evaluated and explains the basis for identifying the preferred alternative to address contamination at the IR17 and Building 503 Area. The Navy evaluated four cleanup alternatives, which are summarized on page 6. The Navy proposes to select Alternative 3 to address contamination in soil and **soil gas** at the IR17 and Building 503 Area. Alternative 3 includes:

- Excavation and off site disposal of contaminated soil in selected areas
- **Monitored natural attenuation (MNA)** of contamination in soil gas in selected areas
- **Institutional controls** to restrict specific land uses and activities.

Public comments will be accepted from May 26, 2015 through June 25, 2015, and public comments can be submitted via mail, e-mail, or fax throughout the comment period. A public meeting will be held at 7:00 PM on May 28, 2015, at the Mare Island Conference Center in Vallejo, California. Members of the public may submit written and oral comments on this Proposed Plan/Draft RAP at the public meeting.

Written comments can be provided any time during the comment period, but must be received no later than June 25, 2015. Please refer to page 12 for further information on how to provide comments.

**CONTENTS**

Introduction.....page 1  
 The CERCLA Process .....page 2  
 Site Background.....page 2  
 Nature and Extent of Contamination.....page 3  
 Summary of Site Risks.....page 4  
 Remedial Action Objectives and  
     Remediation Goals .....page 6  
 Summary of Remedial Alternatives .....page 6  
 Evaluation of Alternatives.....page 7  
 Summary of the Preferred Alternative .....page 8  
 State of California Laws.....page 8  
 The Next Step.....page 9  
 Information Repositories.....page 10  
 Glossary of Terms .....page 10  
 Opportunities for Community Participation.....page 12  
 Project Contacts .....page 12

**— NOTICE —**

**Public Comment Period**  
May 26, 2015 through June 25, 2015

**Public Meeting**  
May 28, 2015

Mare Island Conference Center,  
375 G Street, Vallejo, California  
7:00 PM

<sup>1</sup> Words in **bold** type are defined in the glossary on page 10.

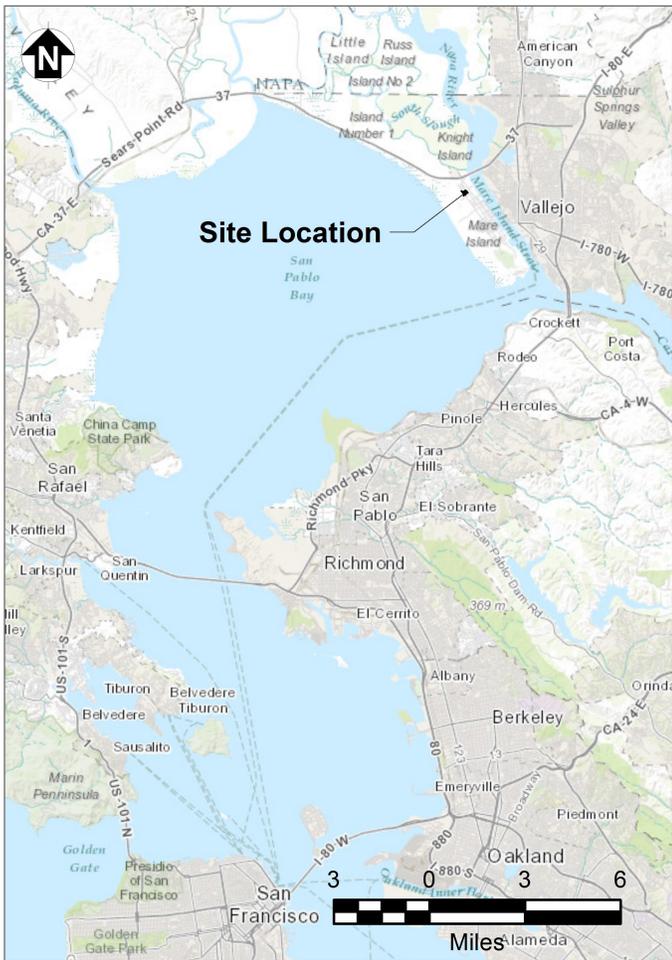


Figure 1. Site Location

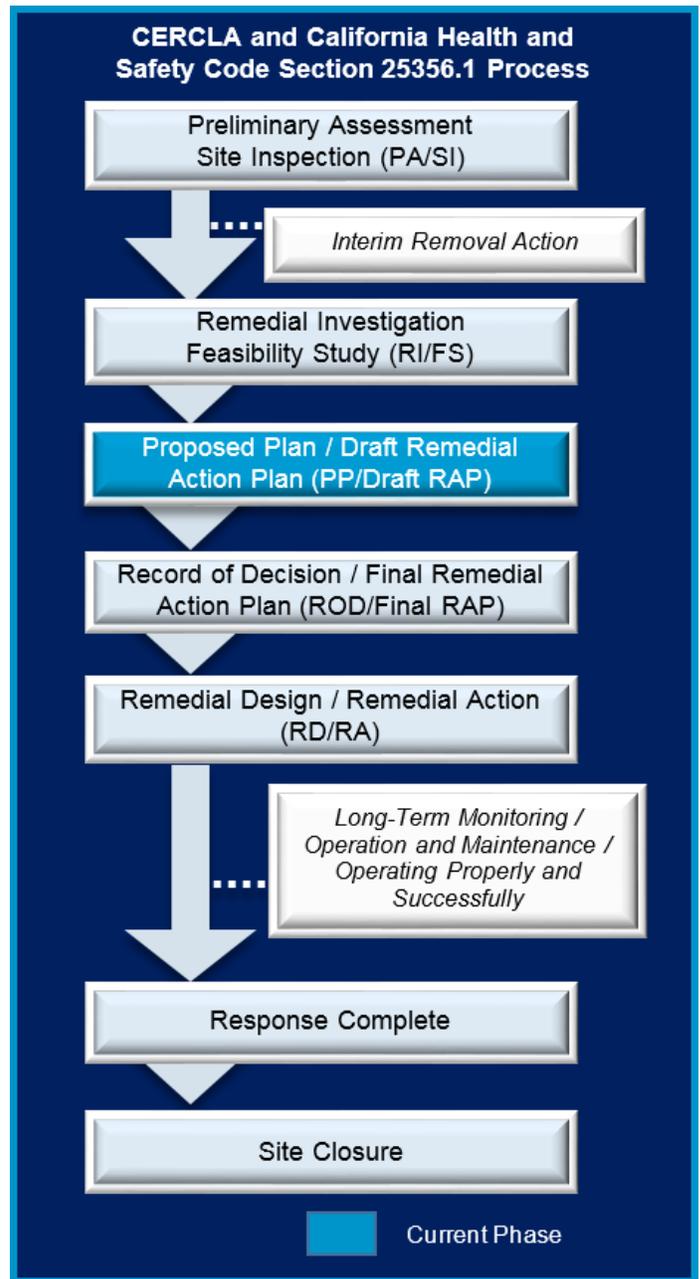


Figure 2. Current Phase in CERCLA and California Health and Safety Code Process

## THE CERCLA PROCESS

The Navy is addressing the contamination at the IR17 and Building 503 Area pursuant to CERCLA and the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. The Navy is issuing this Proposed Plan/Draft RAP as part of its public participation responsibilities under CERCLA and the NCP. This Proposed Plan/Draft RAP has been prepared to highlight key information and conclusions from the Navy's investigations into potential contamination at the IR17 and Building 503 Area and evaluations of cleanup alternatives presented in the final **Feasibility Study (FS)** addendum, issued December 15, 2014. The FS addendum and other documents that provide detailed information about site conditions and Navy activities are available for public review at the locations listed on page 10.

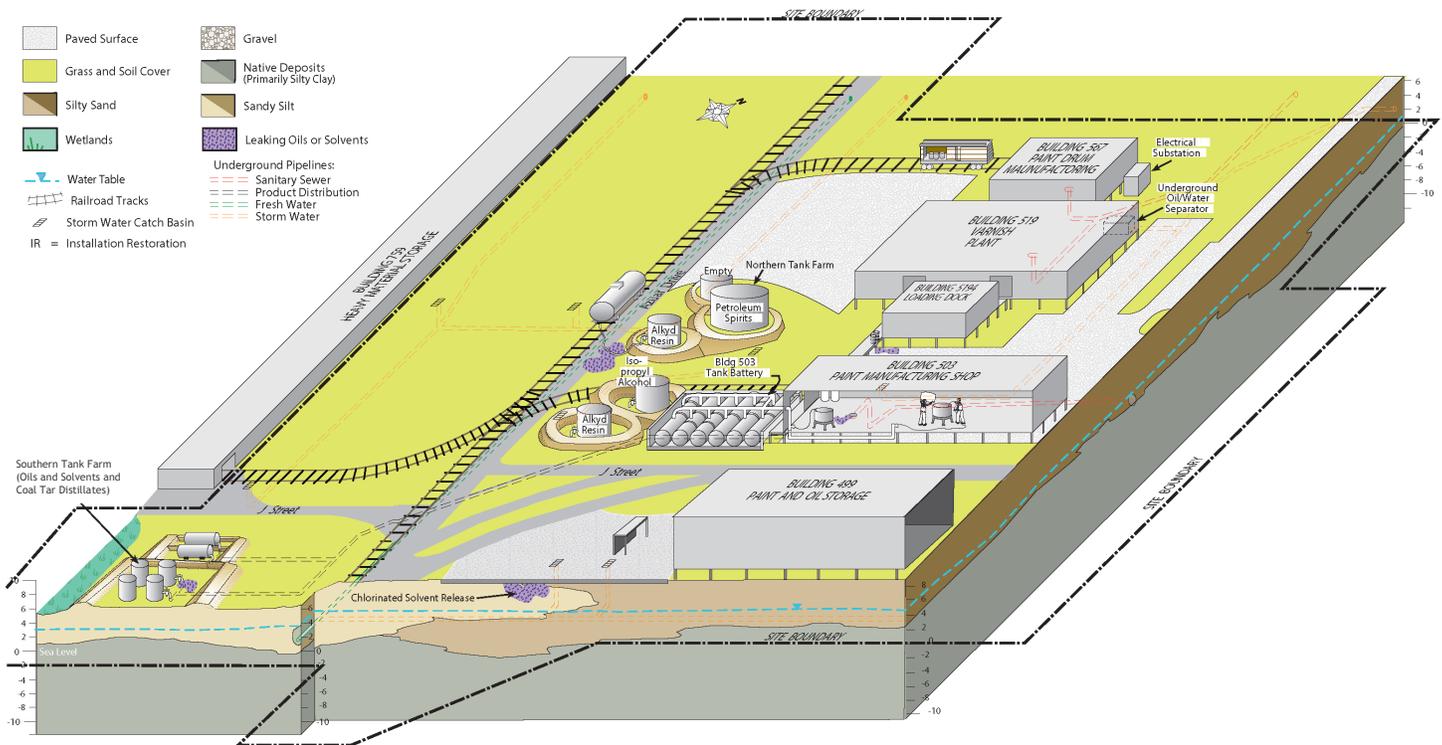
The flowchart to the right illustrates the status of the IR17 and Building 503 Area in the CERCLA process (Figure 2). The Navy's preferred alternative to address contamination at the IR17 and Building 503 Area is presented in this Proposed Plan/Draft RAP.

The ROD/Final RAP will identify the selected cleanup remedy, identify the **remedial action objectives (RAOs)** and **remediation goals (RGs)**, and outline performance

standards that must be met before cleanup is complete. After the ROD/Final RAP, the **Remedial Design (RD)** and **Remedial Action (RA)** are the next steps in the CERCLA process and involve planning and implementing the selected remedial action.

## SITE BACKGROUND

The Mare Island peninsula is located northeast of San Francisco in the City of Vallejo in Solano County, California. Originally, the IR17 and Building 503 Area was part of a tidal marshland near the shoreline of Mare Island Strait, northwest of the Mare Island upland area. Between 1911 and 1938, land occupied by the IR17 and Building 503 Area was created by dredge fill material (primarily clay and silt). The land remained undeveloped



**Figure 3. Conceptual Site Model, Late 1940s Features**

(Source: Figure 4 of the Final Feasibility Study Addendum, Installation Restoration Site 17 and Building 503 Area [TriEco-Tt 2014])

until the former paint manufacturing facility, which included Buildings 503, 519, 519-A, and 567, was constructed between 1938 and 1944. Paints and varnishes were manufactured at the facility from the 1940s to the mid-1950s in support of ship construction and maintenance. The former paint manufacturing facility was closed in the mid-1950s. Figure 3 shows historical site features such as site buildings and tanks, most of which have since been removed, and presents the current understanding of previous conditions at the site in the form of a **conceptual site model (CSM)**.

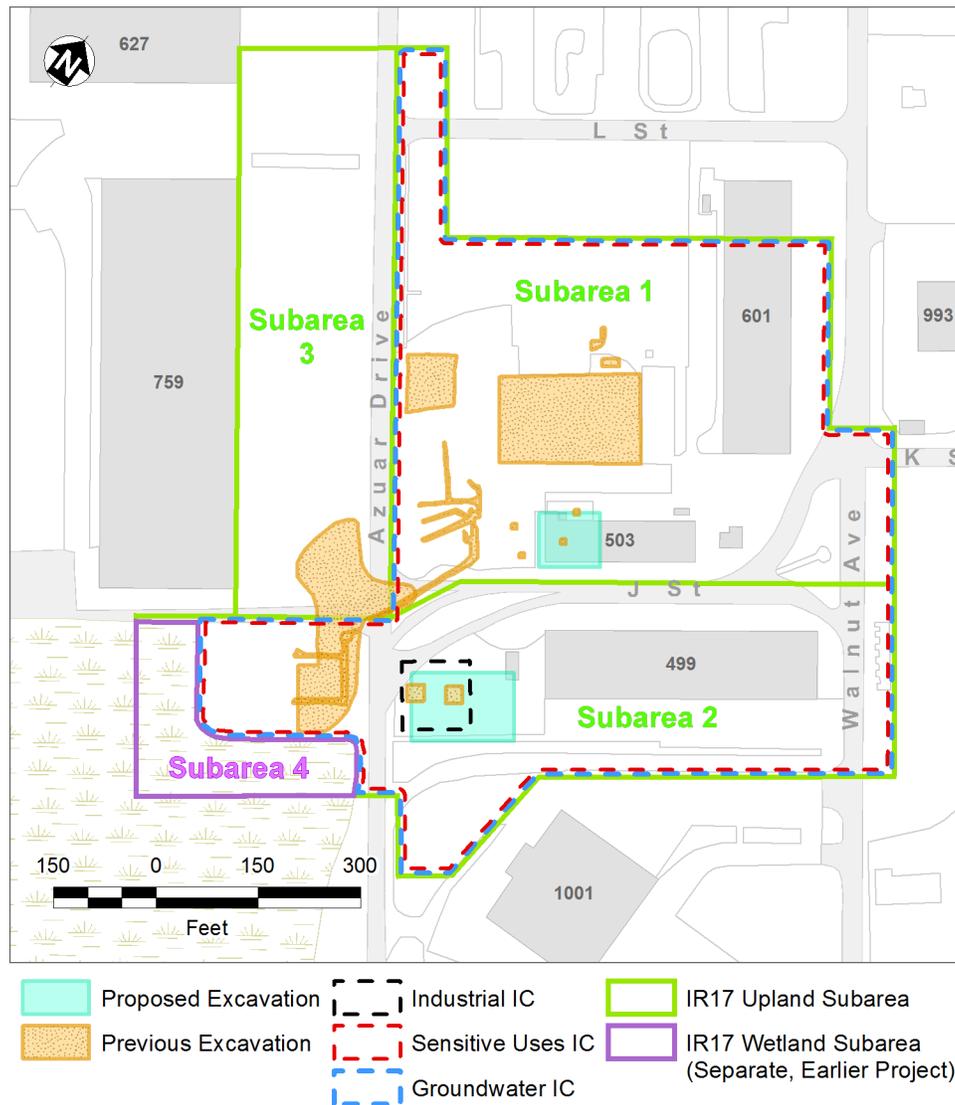
The IR17 and Building 503 Area was separated into four subareas for evaluation (shown in Figure 4) in the FS addendum: Subarea 1 includes the former paint manufacturing area and northern tank farm; Subarea 2 consists of the former southern tank farm and the chlorinated solvent area; Subarea 3 includes the parking lot for Building 759 (a building outside the project boundary); and Subarea 4 includes the adjacent non-tidal wetland area in the southern corner of the site. Some soil removal actions have been implemented at the site in Subareas 1 through 3, as described in the following section. Subarea 4 was previously evaluated in a Non-Tidal Wetland Investigation Report and was recommended for no further action; DTSC concurred with the findings of the report in December 2012. Figure 4, on next page, shows current site features, including remaining buildings and locations of previous removal actions.

Portions of Solid Waste Management Unit (SWMU) 93, the Storm Sewer System, and SWMU 106, the Sanitary Sewer System, are located within the IR17 and Building 503 Area boundary. The storm and sanitary sewer systems were evaluated in the **remedial investigation (RI)** for the IR17 and Building 503 Area. Data collected in the vicinity of these sewer systems do not show evidence of contamination from the SWMUs. Therefore, these sites were closed with DTSC concurrence in March 2014, and no action is necessary to address the SWMUs within the IR17 and Building 503 Area.

### NATURE AND EXTENT OF CONTAMINATION

The nature and extent of contamination for the IR17 and Building 503 Area is based on data collected during several investigations and removal actions between 1992 and 2014. Data collected during these investigations and removal actions included laboratory testing of numerous soil, soil gas, and **groundwater** samples.

Primary contaminants associated with historical activities at the IR17 and Building 503 Area are **volatile organic compounds (VOCs)**, **coal tar distillates** (represented as **total petroleum hydrocarbons [TPH]**), **semivolatile organic compounds (SVOCs)**, **polychlorinated biphenyls (PCBs)**, and **polycyclic aromatic hydrocarbons (PAHs)**, and metals in soil, VOCs in groundwater, and VOCs in soil gas. The majority of the source areas were removed in 1998 to 1999 and 2010 (see previous excavation areas shown on Figure 4). This Proposed Plan/Draft RAP is focused on contamination remaining in



**Figure 4. Site Features and Proposed Excavation and Institutional Control Areas**

soil and soil gas after previous soil removal actions, including the findings of the 2010 to 2011 post-**non-time critical removal action (NTCRA)** groundwater, soil, and soil gas monitoring events, the 2012 upland chlorinated solvents investigation, additional PCB sampling conducted in 2013, and additional soil samples collected in 2014. Soil data from areas that were not removed during previous removal actions were included in the assessment of site risks, which are described in the next section.

### SUMMARY OF SITE RISKS

**Risk** is the likelihood or probability that a hazardous chemical, when released to the environment, will cause effects (such as cancer or other illnesses) to exposed humans or wildlife. The Navy evaluated the risk to humans and wildlife from exposure to site soil, soil gas, and groundwater. The risk assessment results are summarized in the following sections.

### Human Health Risk Assessment

The Navy prepared a **human health risk assessment (HHRA)** as part of the 2006 RI report. An updated HHRA was prepared as part of the 2014 FS addendum because new data collected from 2008 to 2014 was available for the site and because an interim removal action was performed in 2010. In the updated HHRA, the Navy considered the various ways that humans might be exposed to chemicals, the concentrations of the chemicals that could be encountered during exposure, and the potential frequency and duration of exposure (collectively referred to as “exposure scenarios”).

The HHRA for the IR17 and Building 503 Area evaluated potential exposure pathways (such as ingestion, skin contact, and inhalation) to chemicals in soil, soil gas, and groundwater. The shallow groundwater beneath the site does not meet California’s minimum water quality criteria for a domestic or municipal supply due to salinity. On this basis, the

Water Board granted an exception to the drinking water policy for shallow groundwater under State Water Resources Control Board Resolution 88-63. Because the groundwater is not suitable for domestic use due to salinity, use of groundwater as drinking water was not considered a complete exposure pathway and was not evaluated in the HHRA.

Potential future **receptors** included commercial/industrial workers and construction workers. In addition, although residential development is not anticipated at the site in the future, a risk evaluation was completed for hypothetical residents (which includes other sensitive receptors such as persons in hospitals, persons under 21 years of age in schools, and children in day care facilities) to evaluate an unrestricted land use scenario. The HHRA estimated the theoretical risk to humans based on conservative or “worst-case” assumptions. The conservative assumptions were designed to overestimate risk and result in risk assessments that are protective of human health.

Baseline HHRAs follow an established process recognized by EPA, DTSC, and other agencies. Potential risks to human health are characterized as either causing cancer (carcinogenic) or causing other adverse health effects (noncancer). Cancer risks are calculated in terms of the additional number of cancer cases that may result within a given population. A 1 in 1,000,000 (expressed as  $10^{-6}$ ) risk means that, for every 1,000,000 people, one additional cancer case may occur as a result of exposure to site contaminants. Typically, no further action is required at this risk level. Risks greater than 1 in 10,000 ( $10^{-4}$ ) may indicate the need for further action. When risks fall between  $10^{-4}$  and  $10^{-6}$ , referred to as the **risk management range**, decisions about site cleanup are made based on site-specific circumstances.

Noncancer risks are expressed as a number called the hazard index (HI). An HI value of 1 or less indicates that adverse noncancer human health effects are not expected to occur. If the total HI exceeds 1, further evaluation of the HI via a target organ analysis is performed to better define the route and level of risk to human health. Target organ HIs greater than 1 may indicate a potential adverse effect.

The estimated HHRA cancer risks and noncancer hazards for Subarea 1 are discussed below.

- Future Commercial/Industrial Worker: Unacceptable risks. (Cancer risks were within the risk management range and noncancer hazards were equal to or less than the threshold of 1. The majority of the risk is from lead in surface soil.)
- Future Construction Worker: No unacceptable risks. (Cancer risk was within the risk management range. The noncancer hazard was greater than 1; however, no target organ segregated HIs were above the threshold of 1.)

- Hypothetical Future Resident: Unacceptable risks. (Cancer risks were within the risk management range; however the noncancer hazards were greater than the threshold of 1. The majority of the risk is from lead in surface soil; lead and PCBs in subsurface soil; and 1,2,4-trimethylbenzene, ethylbenzene, m,p-xylene, and o-xylene in soil gas.)

The estimated HHRA cancer risks and noncancer hazards for Subarea 2 are discussed below.

- Future Commercial/Industrial Worker: Unacceptable risks. (Cancer risks were within the risk management range; however the noncancer hazards were greater than the threshold of 1. The majority of the risk is from trichloroethene in soil gas.)
- Future Construction Worker: No unacceptable risks. (Cancer risks were within the risk management range and noncancer hazards were equal to or less than the threshold of 1.)
- Hypothetical Future Resident: Unacceptable risks. (Cancer risks were within the risk management range; however the noncancer hazards were greater than the threshold of 1. The majority of the risk is from trichloroethene and vinyl chloride in soil gas.)

The estimated HHRA cancer risks and noncancer hazards for Subarea 3 are discussed below.

- Future Commercial/Industrial Worker: No unacceptable risks. (Cancer risks were less than or within the risk management range and noncancer hazards were equal to or less than the threshold of 1.)
- Future Construction Worker: No unacceptable risks. (Cancer risks were less than the risk management range and noncancer hazards were equal to or less than the threshold of 1.)
- Hypothetical Future Resident: No unacceptable risks. (Cancer risks were within the risk management range. Noncancer hazards were greater than 1; however, the risk drivers were ambient concentrations of thallium present in approved, clean backfill material used during the 2010 NTCRA. Thus, upon further evaluation, the noncancer hazards from the site were determined to be associated with ambient conditions and there were no unacceptable risks.)

## Ecological Risk Assessment

No action is necessary to protect ecological receptors in the IR17 and Building 503 Area. The RI, along with an ecological risk assessment (ERA) conducted in 2002 and the wetland area **screening level ecological risk assessment (SLERA)** conducted in 2012, identified no ecological risks associated with the site. Much of the site is covered by buildings, asphalt, and concrete, and does not provide suitable ecological habitat. Anticipated

future land use is not likely to generate suitable habitat for wildlife and will likely involve expansion of building footprints and paved surfaces. In addition, the RI found that there are no significant contaminant migration pathways from the upland area to the non-tidal wetland area of the site.

## REMEDIAL ACTION OBJECTIVES AND REMEDIATION GOALS

As part of the IR17 and Building 503 Area FS addendum, RAOs were developed to identify and screen remedial alternatives that protect human health and the environment and are consistent with reasonably anticipated land use. RAOs are statements containing a cleanup goal for the protection of human or ecological receptors from one or more chemicals in a specific medium (such as soil, groundwater, or air) at a site.

The following general RAOs were developed for soil and soil gas at Subarea 1 (the former paint manufacturing area and northern tank farm):

- Prevent direct contact by future commercial/industrial workers with concentrations of lead in surface soil (0 to 0.5 foot below ground surface [bgs]) that pose a potential risk.
- Prevent direct contact by hypothetical future residents or other sensitive users with concentrations of lead in surface soil (0 to 0.5 foot bgs) and subsurface soil (0 to 10 feet bgs) that pose a potential risk.
- Prevent exposure of hypothetical future residents or other sensitive users to PCBs in subsurface soil at concentrations that pose a potential risk.
- Prevent exposure of hypothetical future residents or other sensitive users to concentrations of 1,2,4-trimethylbenzene, ethylbenzene, m,p-xylene, and o-xylene in soil gas that may pose a potential risk through **vapor intrusion** into indoor air.

The following general RAOs were developed for soil gas at Subarea 2 (the former southern tank farm and chlorinated solvent area):

- Prevent exposure of future commercial/industrial workers with concentrations of trichloroethene in soil gas that may pose a potential risk through vapor intrusion to indoor air.
- Prevent exposure of hypothetical future residents or other sensitive users with concentrations of trichloroethene and vinyl chloride in soil gas that may pose a potential risk through vapor intrusion to indoor air.

In addition to the general RAOs above, the following general RAO was developed for groundwater at Subareas 1 and 2:

- Prohibit use of groundwater for drinking water and prohibit other uses of groundwater without authorization.

The remediation goals for future commercial/industrial land use are presented in Table 1.

## SUMMARY OF REMEDIAL ALTERNATIVES

The FS addendum evaluated several technologies to address the contamination at the site, including in-situ treatment and capping. However, it was determined that excavation, monitored natural attenuation, and institutional controls were best suited for the IR17 and Building 503 Area. Four remedial alternatives were developed for the IR17 and Building 503 Area using a combination of these three technologies. These alternatives were developed to address potentially unacceptable risk to human receptors:

- Alternative 1: No Action
- Alternative 2: Institutional Controls
- Alternative 3: Excavation and Off-site Disposal, MNA, and Institutional Controls
- Alternative 4: Excavation and Off-site Disposal, and MNA (Future Unrestricted Reuse)

**TABLE 1. SUMMARY OF HUMAN HEALTH REMEDIATION GOALS FOR FUTURE COMMERCIAL/INDUSTRIAL LAND USE**

Exposure Medium	Land Use	Chemical of Concern	Remediation Goal
<b>Subarea 1</b>			
Surface Soil (0 to 0.5 feet bgs)	Future Commercial/Industrial	Lead	346 mg/kg
<b>Subarea 2</b>			
Soil Gas	Future Commercial/Industrial	Trichloroethene	7,081 µg/m <sup>3</sup>

Notes:

µg/m<sup>3</sup> Microgram per cubic meter  
 bgs Below ground surface  
 mg/kg Milligram per kilogram

Table 2 describes the remedial alternatives evaluated in the FS addendum. The Navy has identified Alternative 3, shown in the blue shaded row, as the preferred cleanup alternative.

## EVALUATION OF ALTERNATIVES

The four remedial alternatives shown in Table 2 represent a range of remediation strategies that fulfill the RAOs at the IR17 and Building 503 Area. These alternatives were evaluated against the nine evaluation criteria (listed in Figure 5, next page) that are prescribed in the NCP.

The results of applying the first seven of the NCP criteria are summarized in Table 3 (page 9). The last two NCP criteria (state acceptance and community acceptance; shown in Figure 5) will be addressed through public comment and regulatory agency review periods.

TABLE 2. SUMMARY OF REMEDIAL ALTERNATIVES	
Remedial Alternative	Components of Remedial Alternatives
Alternative 1: No Action	No actions or costs; this alternative is required by CERCLA as a baseline for comparison with other alternatives. Under this alternative, no further remediation would be performed at the site.
Alternative 2: Institutional Controls	This alternative would include institutional controls that would be implemented to prevent exposure to contaminants in soil and soil gas and to prohibit certain reuses of Subareas 1 and 2. Before future industrial buildings could be constructed in part of Subarea 2, institutional controls would require an evaluation and (if needed) mitigation of potential vapor intrusion into buildings. Institutional controls also would prohibit use of groundwater for drinking water and prohibit other uses of groundwater without proper authorization at Subareas 1 and 2. The institutional controls would be monitored to ensure protectiveness of the remedy.
Alternative 3: Excavation and Off-Site Disposal, Monitored Natural Attenuation (MNA), and Institutional Controls	This alternative would involve excavation of contaminated soil, including surface soil (0 to 0.5 foot bgs) contaminated with lead and subsurface soil (0 to 20 feet bgs) that is the source of soil gas contamination. The excavated soil would be disposed of off site at a permitted disposal facility. Excavated areas would be backfilled with clean soil. Excavation would be followed by soil gas monitoring for approximately 5 years or until soil gas concentrations are sufficiently reduced. This alternative includes the same levels of institutional controls as Alternative 2 to protect future commercial/industrial workers until remediation goals have been met and to prohibit sensitive reuses (such as residents, persons in hospitals, persons under 21 years of age in schools, and children in day care facilities) of Subareas 1 and 2. It also includes monitoring the institutional controls for 30 years to ensure the protectiveness of the remedy. However, a much shorter time period would be required for institutional controls under this alternative than for Alternative 2. Also as in Alternative 2, the use of groundwater for drinking water and other uses of groundwater would be prohibited without proper authorization at Subareas 1 and 2.
Alternative 4: Excavation and Off-Site Disposal and MNA (Future Unrestricted Use)	This alternative would involve excavation of contaminated soil (0 to 10 feet bgs), including surface soil contaminated with lead and PCBs, and excavation of subsurface soil (0 to 20 feet bgs) that is the source of contamination in soil gas. The excavated soil would be disposed of off site at a permitted disposal facility. Excavated areas would be backfilled with clean soil. Excavation would be followed by soil gas monitoring for approximately 10 years or until soil gas concentrations are sufficiently reduced. Alternative 4 is similar to Alternative 3; however, this alternative would clean up the site to unrestricted use instead of relying on institutional controls to protect sensitive site uses. Thus additional areas would be excavated under this alternative to achieve more conservative cleanup goals. Institutional controls would be necessary to protect human receptors from exposure to soil and soil gas until risk has been reduced to support unrestricted reuse. As with Alternatives 2 and 3, the use of groundwater for drinking water and other uses of groundwater would be prohibited without proper authorization at Subareas 1 and 2.
<p>Notes:</p> <p>The preferred alternative is indicated by blue shading.</p> <p>bgs      Below ground surface</p> <p>CERCLA      Comprehensive Environmental Response, Compensation, and Liability Act</p> <p>MNA      Monitored natural attenuation</p> <p>PCB      Polychlorinated biphenyl</p>	

## SUMMARY OF THE PREFERRED ALTERNATIVE

The preferred remedy for the IR17 and Building 503 Area is Alternative 3: excavation and off-site disposal of soil, MNA, and institutional controls. Alternative 3 is preferred for the reasons summarized below:

- It would provide protection to human health and the environment by removing contaminated soil and the source of soil gas that pose risks to future receptors at the IR17 and Building 503 Area.
- It meets federal and state **applicable or relevant and appropriate requirements (ARARs)**.
- It would provide long-term protection of the environment through permanent removal of contaminated soil.
- It would result in relatively minor short-term risk to the environment, community, and site workers.
- It would allow redevelopment of the site in a manner most consistent with the City of Vallejo's 2008 Mare Island Specific Plan as amended.

A final decision will not be made until all comments are considered. Community acceptance will be evaluated after the public comment period for this Proposed Plan/Draft RAP. The Navy will address any comments in a responsiveness summary presented in the ROD/Final RAP. A Public Notice will be published in the *Vallejo Times-Herald* announcing when the ROD/Final RAP is available to the public in the information repositories.

## STATE OF CALIFORNIA LAWS

### California Health and Safety Code

This CERCLA Proposed Plan meets applicable requirements for remedial action plans contained in California Health and Safety Code (HSC) Section (§) 25356.1 for hazardous substance release sites listed by DTSC pursuant to California HSC § 25356. This CERCLA Proposed Plan serves as a draft RAP to fulfill the public notice and comment requirements of the California HSC, and the CERCLA Record of Decision for the IR17 and Building 503 Area will serve as the final RAP.

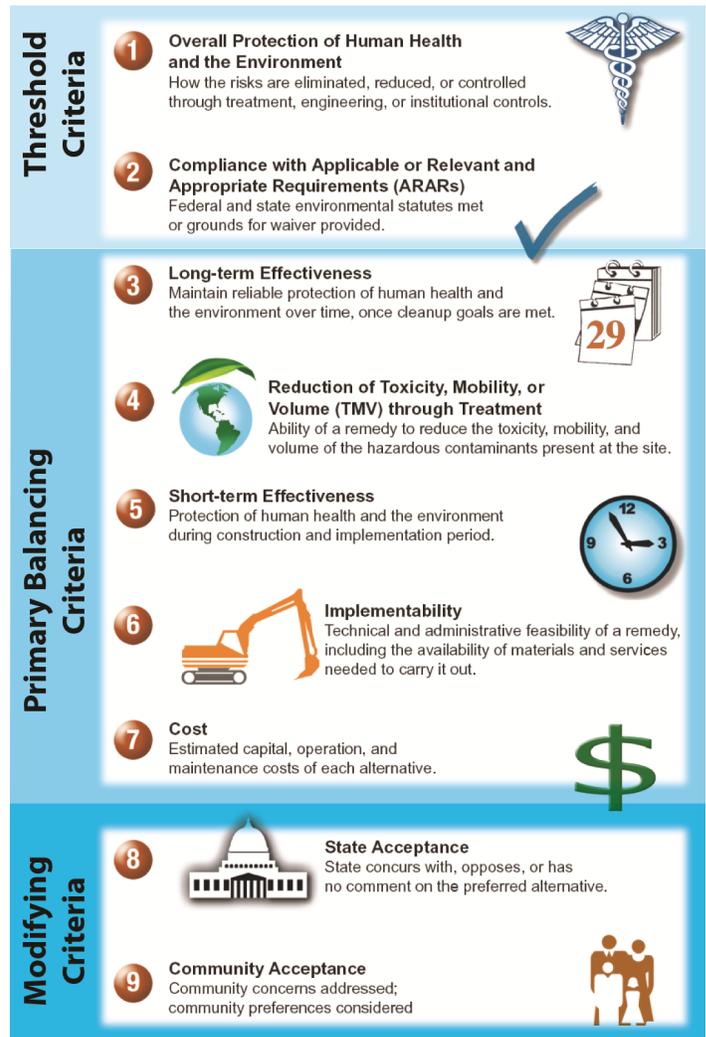


Figure 5. EPA Criteria for Comparison of Cleanup Alternatives

## California Environmental Quality Act (CEQA)

At the conclusion of the public comment period for the Proposed Plan/Draft RAP, DTSC will prepare a CEQA Initial Study to evaluate potential impacts of the proposed project on public health or the environment. This will allow DTSC to ensure that the CEQA document incorporates any changes to the project resulting from public review and comment. The Initial Study will then be made available for review and comment during a future public comment period.

## Nonbinding Allocation of Responsibility

Pursuant to California HSC § 25356.1(e) for remedial action plans prepared for DTSC-listed sites, DTSC is to prepare a preliminary nonbinding allocation of responsibility among all identifiable potentially responsible parties. Based on the available information regarding the former Mare Island Naval Shipyard, DTSC has determined that the Navy is the only identified responsible party.

**TABLE 3: COMPARATIVE ANALYSIS OF SOIL AND SOIL GAS REMEDIAL ALTERNATIVES**

Remedial Alternatives	Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness/ Permanence	Reduction of Mobility, Toxicity, or Volume through Treatment	Short-Term Effectiveness	Implementability	Cost (\$Million)
Alternative 1: No Action	No	NA	●◐	●◐	●	●	\$0
Alternative 2: ICs	Yes	Yes	●◐	●◐	●	●◐	\$0.80
<b>Alternative 3: Excavation and Off-Site Disposal, MNA, and ICs</b>	Yes	Yes	●◑	●◐	●◐	●◐	\$6.84
Alternative 4: Excavation and Off-Site Disposal and MNA (Future Unrestricted Reuse)	Yes	Yes	●	●◐	●◐	●◐	\$11.98

Notes: Preferred alternative indicated in table by blue shading.  
 ●◐ Poor   ●◑ Good   ●◒ Very Good   ● Excellent  
 ARAR Applicable or Relevant and Appropriate Requirements  
 IC Institutional Controls  
 MNA Monitored Natural Attenuation  
 NA Not Applicable

**THE NEXT STEP**

After the comment period has ended, the Navy, DTSC, Water Board, and EPA will review and consider the comments received on this Proposed Plan/Draft RAP before making a final decision for the IR17 and Building 503 Area. The final decision will be documented in a ROD/Final RAP, which will include a responsiveness

summary for all comments received on this Proposed Plan/Draft RAP. A public notice will be posted in local newspapers announcing when the IR17 and Building 503 Area ROD/Final RAP will become available to the public in the information repositories listed on the next page.

**MULTI-AGENCY ENVIRONMENTAL TEAM CONCURS WITH PREFERRED REMEDY**

The **Base Realignment and Closure Cleanup Team (BCT)**, composed of representatives of the Navy, DTSC, Water Board, and EPA, was established with the primary goals of protecting human health and the environment, expediting the environmental cleanup, and coordinating the environmental investigation and cleanup at the installation.

The BCT obtains a consensus on issues regarding the installation’s environmental activities and makes a concerted effort to integrate current and potential future uses into the cleanup decisions. The BCT has reviewed all major documents and activities associated with the IR17 and Building 503 Area. This review included the remedial investigation, FS and FS addendum, and removal action completion reports.

Based on reviews and discussions of key documents and activities, the multi-agency BCT recommends **Alternative 3: Excavation and Off-site Disposal, MNA, and Institutional Controls**, as stated in this Proposed Plan/Draft RAP.

## INFORMATION REPOSITORIES

The John F. Kennedy Library provides public access to technical reports and other IR Program information that support this Proposed Plan/Draft RAP. The administrative record is a collection of reports and historical documents used in the selection of cleanup or remedial alternatives.

### **John F. Kennedy Library**

505 Santa Clara Street  
Vallejo, California 94590  
(866) 572-7587

Library Hours:

Mon & Wed 10:00 a.m. - 9:00 p.m.

Tue & Thu 10:00 a.m. - 6:00 p.m.

Fri & Sat 10:00 a.m. - 5:00 p.m.

Sun 1:00 p.m. - 5:00 p.m.

### **Navy Administrative Record File**

ATTN: Diane Silva, Command Records Manager

NAVFAC Southwest  
1220 Pacific Highway  
Code EV33, NSDB Building 3519  
San Diego, California 92132  
(619) 556-1280

[diane.silva@navy.mil](mailto:diane.silva@navy.mil)

The Navy administrative record file hours are Monday through Friday, 8:00 a.m. to 5:00 p.m. Please contact Ms. Silva to make an appointment.

### **DOCUMENTS AVAILABLE ONLINE!**

IR17 and Building 503 Area documents are available in the information repository and in the administrative record location listed above. Other information can be found on the Navy's website at [www.bracpmo.navy.mil](http://www.bracpmo.navy.mil). Click on the map for BRAC installations, then under California, select "Mare Island NSY" from the list.

## GLOSSARY OF TERMS

**Applicable or relevant and appropriate requirements (ARAR):** Federal or more stringent state environmental standards, requirements, criteria, or limitations that affect final remedial actions at CERCLA sites.

**Base Realignment and Closure Cleanup Team (BCT):** A team that consists of representatives from the Navy, the DTSC, the Water Board, and the EPA, who provide oversight of the cleanup at the former base.

**Coal tar distillates:** Are used in industrial processes, including manufacture of paints, synthetic dyes, and photographic materials.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):** A non-delegable federal law that sets up procedures for cleaning up contaminated sites to protect human health and the environment. The Defense Environmental Restoration Act, a part of the Superfund Amendments and Reauthorization Act, requires the Department of Defense, including the Navy, to address releases of CERCLA hazardous substances according to the requirements of CERCLA.

**Conceptual site model (CSM):** A description of site conditions that identifies contaminant source(s), release mechanisms, exposure pathways and migration routes, and potential receptors.

**Feasibility study (FS):** The FS is a study that identifies and evaluates remedial technologies for a site based on criteria mandated in the NCP.

**Groundwater:** Water below the ground surface in rock or sediment.

**Hazard index (HI):** A calculated value used to represent potential noncancer health effects. An HI value of 1 or less is considered protective of human health.

**Human health risk assessment (HHRA):** An evaluation of the likelihood that humans exposed to contaminants at a site would suffer harm.

**Installation Restoration (IR) Program:** The program initiated by the Department of Defense, in compliance with CERCLA, to identify, investigate, assess, characterize, clean up, or control past releases of hazardous substances.

**Institutional controls:** Non-engineered mechanisms established to limit human exposure to contamination. These mechanisms may include deed restrictions, covenants, easements, laws, and regulations.

**Monitored natural attenuation (MNA):** Monitoring and measuring the decrease or attenuation of contaminants in soil gas or groundwater that occur through natural processes.

**National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** The NCP is the basis for government responses to oil and hazardous substance spills, releases, and sites where these materials have been released.

**Non-time critical removal action (NTCRA):** An interim removal action that may occur when cleanup does not need to begin within 6 months after the lead agency determines that a removal action is necessary.

**Polychlorinated biphenyl (PCB):** A group of toxic, persistent chemicals that were used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they do not burn easily and are good insulators. Their use in the U.S. was banned in 1979.

**Polycyclic aromatic hydrocarbons (PAH):** A group of more than 100 different chemicals made up of one or more fused carbon rings; they are present in coal and petroleum products, and are formed when organic substances are burned.

**Proposed plan/draft remedial action plan (Proposed Plan/Draft RAP):** A document that reviews the remedial alternatives presented in the FS, summarizes the recommended remedial action, explains the reasons for recommending the action, and solicits comments from the community. The RAP is required under HSC Section 25356.1 for sites that are not listed on the NPL, such as Mare Island. A Draft RAP is the California HSC equivalent of the Proposed Plan.

**Remedial action (RA):** The remedial action phase follows the remedial design phase and involves the actual construction or implementation phase of site cleanup.

**Remedial action plan (RAP):** A plan prepared for public review and comment that outlines a specific program leading to remediation of a contaminated site.

**Receptors:** Humans, animals, and plants that may be exposed to site contaminants.

**Record of Decision (ROD)/Final RAP:** A decision document that identifies the remedial alternatives chosen for implementation at a CERCLA site; the ROD/Final RAP is based on information from the RI and FS and on public comments and community concerns. A Final RAP is the California HSC equivalent of the ROD.

**Remedial action objectives (RAO):** A statement containing a remediation goal for the protection of one or more receptors from one or more chemicals in a specific medium (such as soil, groundwater, or air) at a site.

**Remedial design (RD):** The RD is the phase in site cleanup where technical specifications for cleanup remedies and technologies are designed.

**Remedial investigation (RI):** The RI identifies the nature and extent of potential contaminants at a site and assesses human health and environmental risks.

**Remediation goals (RG):** Remediation goals are media-specific, numeric cleanup goals for a selected remedial action.

**Risk:** Likelihood or probability that a hazardous substance released to the environment will cause adverse effects on exposed humans or other biological receptors. Adverse health effects can be classified as carcinogenic (cancer-causing) or noncarcinogenic.

**Risk management range:** The range of cancer risks (from 1 in 10,000 to 1 in 1,000,000 people) that is generally used by EPA when evaluating whether potential risks to human health are acceptable.

**Screening level ecological risk assessment (SLERA):** An assessment of ecological risk based on published screening criteria.

**Semivolatile organic compounds (SVOC):** Organic (carbon-containing) compounds that volatilize slowly at standard temperature.

**Soil gas:** Air present in soil pore spaces.

**Total petroleum hydrocarbons (TPH):** Petroleum hydrocarbons are organic compounds that contain carbon and hydrogen (i.e. gasoline, diesel fuel, motor oil).

**Vapor intrusion:** The migration of volatile chemicals from subsurface contaminated soils and groundwater into the indoor air spaces of overlying buildings through openings in the building foundation (for example, cracks and utility openings).

**Volatile organic compounds (VOC):** Organic chemical compounds that tend to volatilize or evaporate from soil or water. These chemicals are commonly used as solvents, degreasers, and in paints.

## OPPORTUNITIES FOR COMMUNITY PARTICIPATION

Community involvement is essential to selecting remedial alternatives and we encourage you to provide comments. The 30-day public comment period for the Proposed Plan/Draft RAP is May 26, 2015 through June 25, 2015.

### COMMENTS

There are two ways to provide comments during this period:

1. Offer oral comments during the public meeting (May 28, 2015)
2. Provide written comments in person, by mail, e-mail, or fax (no later than June 25, 2015)

**Public Meeting**    **May 28, 2015 — 7:00 PM**  
**Mare Island Conference Center, 375 G Street, Vallejo, California.**



You are invited to this public meeting to discuss the information presented in this Proposed Plan/Draft RAP for the IR17 and Building 503 Area. Navy representatives will provide information on the environmental investigations conducted for the IR17 and Building 503 Area. You will have an opportunity to ask questions and formally comment on the Navy's preferred remedial alternative for soil and soil gas as presented in this Proposed Plan/Draft RAP. A court recorder will be available to record meeting minutes and public comments.

### **Submit Comments**



You may provide comments on the Proposed Plan/Draft RAP orally or in writing at the public meeting or by submitting your comments anytime during the public comment period. You may mail, e-mail, or fax written comments on this Proposed Plan/Draft RAP to Ms. Janet Lear, Navy BRAC Environmental Coordinator, postmarked no later than June 25, 2015. Please see Ms. Lear's full contact information below.

## PROJECT CONTACTS

For more information on the environmental program at Mare Island, the Proposed Plan/Draft RAP or the Negative Declaration, please contact the following:

### **Navy Contact**

Janet Lear  
BRAC Environmental Coordinator  
Department of the Navy  
BRAC Program Management Office West  
1455 Frazee Road, Suite 900  
San Diego, CA 92108  
(619) 532-0976  
(619) 532-0780 (fax)  
[janet.lear@navy.mil](mailto:janet.lear@navy.mil)

### **DTSC Contacts**

Patrick Hsieh  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710  
(510) 540-3906  
(510) 540-3819 (fax)  
[patrick.hsieh@dtsc.ca.gov](mailto:patrick.hsieh@dtsc.ca.gov)

Jesus Cruz  
Public Participation Specialist  
8800 Cal Center Drive  
Sacramento, CA 95826  
(916) 255-3315  
(866) 495-5651 (toll free)  
(916) 255-3654 (fax)  
[jesus.cruz@dtsc.ca.gov](mailto:jesus.cruz@dtsc.ca.gov)



**FORMER MARE ISLAND NAVAL SHIPYARD**  
**Installation Restoration Site 17 and Building 503 Area**  
**PUBLIC MEETING**  
**May 28, 2015**  
**7:00 PM**  
**Mare Island Conference Center**  
375 G Street  
Vallejo, California

**Proposed Plan / Draft RAP — Comment Form**

The public comment period for the Proposed Plan/Draft Remedial Action Plan for the Installation Restoration Site 17 (IR17) and Building 503 Area at the Mare Island Naval Shipyard, Vallejo, California, is from May 26, 2015 through June 25, 2015. You may provide oral comments at the public meeting listed above, where all comments will be recorded by a court reporter. Or, you may provide written comments in the space provided below or on your own stationery. All written comments must be postmarked no later than June 25, 2015. After you complete your comments, please mail this form to the address provided on the reverse side of this form or submit this form to a Navy representative at the public meeting. Comments are also being accepted by e-mail and fax. Please address comments sent by e-mail to Ms. Janet Lear at [janet.lear@navy.mil](mailto:janet.lear@navy.mil) or send comments via fax to the attention of Ms. Janet Lear at (619) 532-0780.

Name: \_\_\_\_\_

Representing: \_\_\_\_\_  
(optional)

Phone Number: \_\_\_\_\_  
(optional)

Address: \_\_\_\_\_  
(optional)

Please check the appropriate box if you would like to be added to or removed from the Navy's Environmental Mailing List for Mare Island:  Add me  Remove me

**Comments**

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**Ms. Janet Lear  
BRAC Environmental Coordinator  
Navy BRAC Program Management Office West  
1455 Frazee Road, Suite 900  
San Diego, CA 92108-4310**



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Navy BRAC Program Management Office West  
1455 Frazee Road, Suite 900  
San Diego, CA 92108-4310

**INVITATION TO COMMENT**

On the Proposed Cleanup Action for the  
Installation Restoration Site 17 and Building 503 Area  
Former Mare Island Naval Shipyard, Vallejo, California  
See details inside.

**IMPORTANT DATES TO REMEMBER**

- **Public Comment Period**  
May 26, 2015 through  
June 25, 2015
- **Public Meeting**  
May 28, 2015 at 7:00 PM  
Mare Island Conference Center  
375 G Street, Vallejo, California