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Dear BCT Members:

Enclosure (1) is the Final Time Critical Removal Action Action Memorandum for the Methane Source Area at IR-07, Parcel B at Hunters Point Shipyard, San Francisco, California. Responses to regulatory comments have been included as Appendix A.

If you should you have any concerns with this matter, please contact Mr. Keith Forman, at (619) 532-0913 or Ms. Lara Urizar at (619) 532-0960.

Sincerely,

KEITH FORMAN
BRAC Environmental Coordinator
By direction of the Director

Enclosure (1) Final Time Critical Removal Action Action Memorandum For The Methane Source Area at IR-07, May 16th, 2008

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FINAL ACTION MEMORANDUM
TIME-CRITICAL REMOVAL ACTION FOR THE METHANE SOURCE AREA AT IR-07, PARCEL B

HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFONRIA

CONTRACT NO. N62473-07-D-3220
DCN: SEST-3220-0002-0006
CTO NO. 0002
MAY 16, 2008

DEPARTMENT OF THE NAVY
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
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ABBREVIATIONS AND ACRONYMS

§	Section
§§	Sections
ARAR	applicable or relevant and appropriate requirement
Bay	San Francisco Bay
BRAC	Base Realignment and Closure
Ca-HSC	*California Health and Safety Code*
CCR	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
DON	Department of the Navy
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
et seq.	and the following ones
FS	feasibility study
HLA	Harding Lawson Associates
HPS	Hunters Point Shipyard
IR	Installation Restoration
IRP	Installation Restoration Program
LEL	lower explosive limit
LFR	Levine-Fricke-Recon
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PA	preliminary assessment
PCB	polychlorinated biphenyl
PRC	PRC Environmental Management, Inc.
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
RSY	radiological screening yard
SFRA	San Francisco Redevelopment Agency
SI	site inspection
TCRA	time-critical removal action
Tetra Tech	Tetra Tech EM Inc.
TPH	total petroleum hydrocarbons
U&A	Uribe & Associates
USC	*United States Code*
Water Board	San Francisco Bay Regional Water Quality Control Board

ACTION MEMORANDUM

Department of the Navy
Base Realignment and Closure
Program Management Office West
1455 Frazee Road, Suite 900
San Diego, California 92108

February 7, 2008

Subject: Action Memorandum, Time-Critical Removal Action for the Methane Source Area at IR-07, Parcel B, Hunters Point Shipyard San Francisco, California

Site Status:	National Priorities List
Category of Removal:	Time-Critical Removal Action
CERCLIS ID No.:	CA1170090087
Site ID No.:	None

I. PURPOSE

The purpose of this Action Memorandum is to document, for inclusion in the Administrative Record, the Department of the Navy's (DONs) decision to undertake a time-critical removal action (TCRA) for the methane source area at Installation Restoration Site 7 (IR-07), Parcel B of Hunters Point Shipyard (HPS) in San Francisco, California (Figure 1 and Figure 2).

Debris, organic chemical contamination, or naturally occurring organic material in the fill is suspected to be the source of methane in soil gas at IR-07. This methane is a "pollutant or contaminant" as defined by Section 101(32) of CERCLA. Methane concentrations have been documented at IR-07 above the lower explosive limit (LEL) of 5 percent by volume and generally below the upper explosive limit (UEL) of 15 percent by volume, although methane has been detected as high as 17 percent by volume. The threat of fire or explosion may present an imminent and substantial danger to the public health or welfare (see "CERCLA Removal Actions at Methane Release Sites," January 23, 1986 [USEPA OSWER Directive 9360.0-8]).

The U.S. Department of Defense has the authority to undertake response actions, including removal actions, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42 *United States Code* [USC] Section [§] 9604, Title 10 USC § 2701, *et seq*., and federal Executive Order 12580. This includes the authority to undertake removal actions to address "pollutants or contaminants" that "may present and imminent and substantial danger to the public health or welfare" pursuant to Title 42 USC Section 9604(a)(1)(B).

This removal action constitutes a "time-critical removal action" as defined in U.S. Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response (OSWER) Directive 9318.0-05, and is being implemented as provided in Title 40 of the Code of Federal Regulations (CFR) Section 330.415(n)(2). The removal action performed under this Action Memorandum is deemed consistent with the factors set forth within the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 CFR Part 300. Further, this removal action is consistent, to the maximum extent possible, with Chapter 6.8 of the *California Health and Safety Code* (Ca-HSC).

The proposed TCRA involves delineation and removal of methane in soil gas and the associated methane-generating material in order to eliminate the threat to human health in the event of fire or explosion. This TCRA consists of:

1. Sampling to identify and delineate the methane and methane-generating material (Figure 3);
2. Removal of the methane-generating material by excavation;
3. Post-excavation confirmatory and characterization sampling; and
4. Site restoration.

Additionally, potential radiological and chemical contamination encountered within the boundaries of the TCRA will be addressed as needed while meeting the goals of this Action Memorandum. A detailed description of all field activities will be presented in a site-specific project work plan, and field activities are summarized in Section V of this Action Memorandum.

II. SITE CONDITIONS AND BACKGROUND

A. SITE DESCRIPTION

1. Removal Site Evaluation

HPS is located in southeast San Francisco on a peninsula that extends east into San Francisco Bay (Figure 1). HPS operated as a commercial dry dock facility until 1939, when the DON purchased the property and expanded it into a naval shipyard. In 1974, the DON ceased shipyard operations at HPS and transferred control of the property to its Office of the Supervisor of Shipbuilding, Conversion, and Repair in San Francisco. In 1976, Triple A Machine Shop, Inc. leased most of HPS, operating it as a commercial ship repair facility. In 1989, HPS was included on the CERCLA National Priorities List. In 1991, HPS was slated for closure under the Defense Base Closure and Realignment Act of 1990.

HPS was divided into seven parcels, Parcels A through E, E-2, and F, to aid in environmental investigation and cleanup activities. Parcel A was transferred to the San Francisco Redevelopment Agency (SFRA) in December 2004 and is no longer DON property. Parcel B,

which includes IR-07, consists of about 59 acres of shoreline and lowland coast along the northeastern portion of HPS (Figure 1 and Figure 2). Parcel B is bounded by private property to the northwest and southwest, the San Francisco Bay (Bay) to the northeast and south, and off-base property to the west.

Historically, IR-07 underwent several episodes of largely undocumented fill activity, during which tidelands and a small portion of San Francisco Bay were reclaimed for use as shipyard property. Following construction, the site was primarily used for conventional (non-nuclear) submarine maintenance, but also served as a vehicle parking and recreational area. Previous investigations at IR-07 indicate that the site was constructed of low-quality fill material with high debris content and concentrations of chemical contamination at or above applicable cleanup criteria (Sultech 2007; Tetra Tech 2008). The debris includes wood, asphalt, concrete, brick, metal, and other demolition-type debris. Debris, organic chemical contamination, or naturally occurring organic material in the fill is suspected to be the source of methane in soil gas at IR-07.

This Action Memorandum addresses the methane source area that is located at IR-07, within Parcel B (Figure 3).

The following environmental investigations have been conducted at Parcel B:

- Preliminary Assessment (PA) (Harding Lawson Associates [HLA] 1989)
- Site Inspection (SI) (HLA 1990)
- Remedial Investigation (RI) (PRC, Levine-Fricke-Recon [LFR], and Uribe & Associates [U&A] 1996)
- Exploratory Excavations (PRC 1996a)
- Feasibility Study (PRC 1996b)
- Geophysical Survey (Tetra Tech 2003)
- Remedial Action (Tetra Tech 2002; Sultech 2004)
- Soil Gas Investigation (SES-TECH 2005)

Remedial action excavations indicated that soil in IR-07 contained PAHs, PCBs, TPH and metals (Sultech 2004). Methane at concentrations greater than 1.25% by volume was detected at three locations during the 2005 soil gas investigation, with the highest detection measured at 17 percent by volume (SES-TECH 2005). The three samples were located in close proximity to each other, suggesting that the methane source area occupies a small portion of IR-07 (Figure 3).

2. Physical Location

HPS is located in the City and County of San Francisco in California. HPS is situated on a long promontory in the southeastern part of San Francisco that extends eastward into the Bay (Figure 1). HPS comprises 929 acres, 496 of which are on land. Parcel B occupies 59 acres on land along the shoreline in the northeastern portion of HPS, of which IR-07 makes up approximately 10 acres.

Partly cloudy, cool summers with little precipitation and mostly clear, mild winters with moderate precipitation characterize the climate at HPS. The average annual precipitation in the area is about 20 inches. Precipitation occurs mostly from December through February. Residences, public areas, and industrial facilities are located within a 1-mile radius of HPS.

3. Site Characteristics

Parcel B is currently part of HPS, which is federal property controlled by the DON. The DON no longer performs industrial operations at HPS; however, the DON leases limited areas of Parcel B. IR-07 is an open area, free of buildings, previously used as a radiological screening yard (RSY) for the Parcel B Storm Drain and Sanitary Sewer (SD/SS) Removal Action. Engineered screening pads remain at the site for use during this TCRA.

Remedial actions conducted at IR-07 demonstrated that soil contamination was likely present in the fill as it was placed (Sultech 2004). The chemical data evaluated did not suggest a typical point source release attributable to a spill. Chemical contaminants include PAHs, PCBs, TPH and metals. IR-07 has been designated as a radiologically impacted site, meaning there is a potential that radioactive materials have been used, stored, and disposed of at the site. Radionuclides of potential concern include radium-226, cesium-237, and strontium-90, although the HRA lists the potential for contamination as *unlikely* (Naval Sea Systems Command, Radiological Affairs Service Office 2004).

A narrow strip of wetlands has been identified along the shoreline of IR-07 and is not anticipated to be impacted by this TCRA. Outside of the boundaries of the RSY, the site is sparsely vegetated with a non-engineered surface of asphalt, gravel, and soil. Viable terrestrial habitat is not present at IR-07. Storm water runoff from the RSY at IR-07 continues to be managed as part of ongoing stormwater pollution prevention activities conducted as part of the ongoing SD/SS Removal Action.

4. Release or Threatened Release

Figure 3 shows the concentrations of methane found within the excavation boundary that exceeded the LEL. The methane source area was identified based on soil gas data collected during the Soil Gas Investigation (SES-TECH 2005).

Methane is nontoxic, but it is highly flammable and may form explosive mixtures with air. Presently, risk to human health is posed by the threat of fire or explosion from methane in soil gas above the LEL (5 percent) and below the UEL (15 percent). Future activities at the site may significantly increase this risk through concentration and collection of the methane in onsite structures constructed at or adjacent to the site.

5. National Priorities List Status

In 1989, the HPS property was included on the National Priorities List as a Superfund site pursuant to CERCLA, as amended by the Superfund Amendments and Reauthorization Act. In February 1999, a partial delisting from the National Priorities List resulted in the removal of Parcel A from the Superfund site designation.

6. Maps, Pictures, and Other Graphic Representations

Figure 1 shows the general location of HPS and Parcels B through F, Figure 2 shows relevant Parcel B site features, and Figure 3 shows the location of the methane source area including sample locations, associated methane concentrations, the proposed area of investigation, and the overall site boundary, which coincides with the existing RSY boundaries. The existing RSY boundary will be considered the area of contamination (AOC) in order to facilitate radiological screening and staging of the excavated material. Tables 1, 2, and 3 present the respective chemical-, location-, and action-specific applicable or relevant and appropriate requirements (ARARs) for this TCRA, respectively.

B. OTHER ACTIONS TO DATE

1. Previous Actions

Actions previously conducted at Parcel B are summarized below.

- **Exploratory Excavation Removal Action:** In 1996, hazardous substances in soil were removed at exploratory excavation sites that posed a threat to human health and the environment. During investigations at Parcels B, C, D, and E, 28 areas of stained soil, asphalt, and concrete were identified. Eighteen of the areas met criteria for a CERCLA removal action and were within the scope of the exploratory excavation. Surface soil and soil boring data for most locations showed elevated concentrations of metals, semivolatile organic compounds, PCBs, or TPH (PRC 1996a). Exploratory excavation removal action field activities began in mid-1996 and were completed in February 1997.

- **Remedial Action:** Pursuant to a signed Record of Decision (ROD), approximately 100,000 cubic yards of soil at approximately 100 remediation areas was excavated during the 1998 through 2001 remedial action activities. About 80 of these excavations are documented in the draft Construction Summary Report (Tetra Tech 2002). About 20 excavations are discussed in the Construction Summary Report Addendum (Sultech 2004). Not all of the excavations that are documented in the CSR are considered to be complete. Further remedial actions will be addressed in the Amended Parcel B ROD.
- **Historical Radiological Assessment:** In 2004, the historical radiological assessment identified IR-07 as impacted by radiological activities and recommended additional characterization and potential remediation at Parcel E (Naval Sea Systems Command, Radiological Affairs Support Office 2004). The "impacted" designation means that IR-07 has the potential for historical use, storage, or disposal of radioactive material.
- **Basewide Radiological Removal Action:** Beginning in 2005, the basewide radiological removal action focused on stormwater and sewer drain lines in Parcel B. The pipelines and surrounding soil were screened for radionuclides of concern and overburden soil was characterized for disposal or reuse. All waste material was disposed at an appropriate offsite facility.

2. Current Actions

The DON is currently performing a basewide radiological removal action based on the findings and recommendations of the Historical Radiological Assessment. Stormdrain and sewer line removal and assessment is mostly complete at Parcel B and work remains on impacted buildings. An Amended Parcel B Record of Decision is also being prepared to address the recommendations of the First 5-Year Review of Remedial Actions at HPS (Tetra Tech 2003a).

C. STATE AND LOCAL AUTHORITIES ROLES

1. State and Local Actions to Date

The California Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (Water Board) have provided technical advice and regulatory oversight during the PA/SI, RI/FS, and remedial action phases of the Installation Restoration Program (IRP). DTSC and the Water Board are members of the Base Realignment and Closure (BRAC) Cleanup Team.

2. Potential for Continued State and Local Response

DTSC and the Water Board provided technical advice, oversight, and general assistance with the PA/SI and RI/FS phases of the IRP and with the soil gas investigation that led to this removal action. These agencies will continue to do so throughout the IRP. It is expected that the DON's

BRAC Defense Environmental Restoration Account funds will continue to be the exclusive source of funding for this program.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

In accordance with the NCP, the following threats must be considered in determining the appropriateness of a removal action (Title 40 CFR Part 300.415[b][2]):

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chains.
- Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.
- Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- Threat of fire or explosion.
- Other situations or factors that may pose threats to public health or welfare or the environment.

A. THREATS TO PUBLIC HEALTH OR WELFARE

The following threat applies to conditions at the methane source area:

- Threat of fire or explosion.

Methane is a “pollutant or contaminant” as defined in Section 101(32) of CERCLA. It is present in soil gas at IR-07 at concentrations that may produce an explosive mixture with air. Pursuant to CERCLA § 104(a)(1)(B) (Title 42 USC § 9604[a][1][B]), response actions may be taken when there is a threat of fire or explosion from release of a “pollutant or contaminant” that may present an imminent and substantial danger to the public health or welfare. The nature of this risk indicates that removing the methane gas and its source material will mitigate the immediate threat to public health. In addition, risk from chemical and radiological materials will be addressed, to the extent practicable, within the methane source area excavation footprint.

B. THREATS TO THE ENVIRONMENT

IR-07 does not have habitat needed to support terrestrial ecological receptors. The small wetland area along the IR-07 shoreline is not affected by the conditions present at the methane source area.

IV. ENDANGERMENT DETERMINATION

Although methane is nontoxic, it is highly flammable and may form explosive mixtures with air. Information contained in the Administrative Record indicates that methane is present within the boundaries of this response action.

Actual or threatened releases of methane from this site, at the levels previously detected, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial danger to the public health or welfare. The primary danger is from the threat of fire or explosion.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The objectives, and associated actions, to be performed as part of this TCRA are summarized and described below.

A. PROPOSED ACTION

The objectives of this TCRA are as follows:

- Remove current concentrations of methane in soil gas within the boundaries of this TCRA.
- Identify and remove the methane-generating material from within the TCRA boundary to prevent future buildup of methane gas in the subsurface and any future on-site structures at and adjacent to this site.

1. Proposed Action Description

The following removal action activities are proposed to meet the removal action objective:

- Perform preliminary delineation sampling of applicable media to refine the extent of methane in soil gas and identify the horizontal and vertical extent of the methane-generating material.
- Excavate soil, sediment, and/or construction debris defined as the methane source area.
- Perform radiological screening of soil as it is excavated.

- Implement rigorous measures (wetting down of soil) to prevent dust emissions during field work.
- Conduct real-time air monitoring.
- Perform post-construction confirmatory and characterization sampling.
- Identify, manage, and dispose of all identified waste streams in accordance with applicable procedures.
- Perform site restoration.

Pre-excavation characterization sampling and analysis, field observations, existing data, and field conditions will be evaluated to determine the actual methane source area excavation boundary. The pre-excavation sampling and analysis will be conducted prior to beginning excavation activities and will focus on areas where methane has been detected in soil gas. Any wastes associated with this TCRA will be characterized and disposed of off site in accordance with the applicable transportation and disposal regulations including EPA "off-site" rule (40 CFR Section 300.440). These wastes may include investigation-derived waste, excavated soil, and debris (such as concrete, wood, plastic, and scrap metal).

Specific construction details for implementing the TCRA will be presented in the removal action work plan. These activities include (but are not limited to) sampling prior to excavation, excavation of contaminated materials, dust control, stormwater runoff control, handling of radiological material, confirmatory sampling and analysis, backfilling, and grading. A schedule of activities during the removal action will be presented in the project work plan. If radiological materials are encountered, they will be disposed of appropriately as low-level radiological waste (LLRW).

2. Contribution to Remedial Performance

Pursuant to the 1997 ROD, remedial actions were conducted at a number of sites in Parcel B. Achieving the remedial action objectives proved problematic at many of the sites for reasons presented and evaluated in the 5-year review (Tetra Tech 2003a). As a result, the ROD is being amended to address the findings of the 5-year review, in addition to aligning remediation with planned reuse.

As part of the ROD amendment process, the Navy is performing an evaluation of potential remedies for all of Parcel B. The preferred remedy for IR-07 comprises a combination of engineering and institutional controls, an engineered soil cap, groundwater monitoring, and a radiological investigation (Sultech 2007; Tetra Tech 2008).

Activities planned as part of this TCRA are anticipated to contribute to the overall short- and long-term effectiveness of the planned remedial action at IR-07. The results of preliminary,

confirmatory, and characterization sampling for the chemicals of concern, in combination with applicable field observations, will be valuable in validated the existing site conceptual model. Excavation and disposal of the methane-generating material will reduce the overall volume of contaminated fill likely to require restrictions. Additionally, the radiological screening to be performed on all excavated material will yield additional information with respect to historic radiological operations at the shipyard. The above information will augment the results of extensive historic investigations, aid in the development of the remedial design, and ultimately contribute to the overall effectiveness of the selected remedy for IR-07.

3. Description of Alternative Technologies

CERCLA encourages treatment as a principal means of addressing threats from site-related contamination. Excavation and off-site disposal provide the greatest long-term effectiveness at HPS and are easily implemented. In addition, the public has overwhelmingly supported off-site disposal alternatives in the past. The paragraphs below explain how the proposed alternative meets selection criteria (effectiveness, implementability, and cost) used to evaluate this alternative.

The proposed removal action would effectively protect human health from the threat of fire or explosion due to methane in soil gas by removing methane and its source area, and disposing of the methane-producing material at an off-site disposal facility, while complying with the chemical-, location-, and action-specific ARARs identified in 1, 2, and 3, respectively. The removal action will comply with the location-specific ARAR by minimizing adverse effects to IR-07 shoreline. Sampling soil stockpiles and implementing control measures for fugitive dust emissions and storm water runoff will be completed in compliance with ARARs specific to waste characterization and disposal actions.

An alternative to excavation and disposal is methane removal via soil vapor extraction and subsequent treatment. This technology relies on a network of soil gas wells generally connected to an electric motor and vacuum blower. The negative pressure exerted on the soil gas wells draws methane and other soil gases from the zone between the soil surface and the water table. The soil gas is then treated to destroy or capture contaminants. This technology may take many years of operation since it does not directly address the methane source. Methane removal via soil vapor extraction and subsequent treatment would be effective in the short term. However, it would be more difficult to design, implement and monitor than excavation and disposal. It would be less effective in the long term than excavation and disposal, because vapor extraction does not address the methane source.

The proposed removal action provides effective short- and long-term reduction in the threat of fire or explosion from methane by removing methane and its source material, and backfilling the excavation with clean soil. In the short term, exposure to workers involved in the removal action will be minimized through proper use of engineering controls and personal protective equipment.

The short-term impacts to Hunters Point and the surrounding community (from traffic noise and dust associated with the off-site disposal, and import of clean fill) will be minimized through the use of engineering controls and strict traffic schedules consistent with other activities implemented at HPS, and the excavation is relatively small. Over the long term, methane concentrations in soil gas would be reduced to essentially zero within the proposed lateral excavation boundary shown on Figure 2 and Figure 3.

The proposed alternative does not present any technical or administrative constraints on implementability. Similar alternatives have been successfully employed at other parcels at HPS to provide protection of human health and the environment.

The estimated cost of this removal action is anticipated to be approximately $300 per cubic yard. The planned removal action includes excavation of approximately 5,000 cubic yards of soil and debris. The total estimated cost is $1,492,000.

4. Engineering Evaluation/Cost Analysis

Engineering evaluations and cost analyses are not required for TCRAs.

5. ARARs

NCP § 300.415(j) provides that removal actions must attain ARARs to the extent practicable, considering the exigencies of the situation.

NCP § 300.5 defines applicable requirements as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental, or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site.

NCP § 300.5 defines relevant and appropriate requirements as cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, or state environmental, or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of or consultation with administrative bodies, issuance of permits, documentation, reporting, record keeping, and enforcement are not ARARs for CERCLA actions confined to the site.

There are three types of ARARs. The first type includes "contaminant specific" requirements. These ARARs set limits on concentrations of specific hazardous substances, contaminants, and pollutants in the environment. Examples of this type of ARAR are ambient water quality criteria and drinking water standards. The second type of ARAR includes location-specific requirements for activities based on site characteristics, including activities in wetlands, floodplains, and historic sites. The third type of ARAR includes action-specific requirements, which are technology-based restrictions that are triggered by the type of action under consideration. Examples of action-specific ARARs are regulations for waste treatment, storage, and disposal under the Resource Conservation and Recovery Act (RCRA).

ARARs must be identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as removal actions.

As the lead federal agency, the DON has primary responsibility for identifying federal ARARs at HPS. The substantive provisions of the following potential federal chemical-, location-, and action-specific ARARs were identified for this TCRA:

Chemical-Specific ARARs

- Requirements under RCRA for identification of hazardous waste (Title 42 USC, Chapter 82, §§ 6901–6991[i], and Title 22 *California Code of Regulations* [CCR], §§ 66261.21, 66261.22[a][1], 66261.23, 66261.24[a][1], and 66261.100)
- Uranium Mill Tailings Radiation Control Act of 1978 (Title 42 USC § 7901 and the following ones [et seq.] and Title 40 CFR Part 192.12[a])

Location-Specific ARARs

- Coastal Zone Management Act (Title 16 USC §§ 1456(c)) Provides for consistency of federal activities with State Management Plan. The San Francisco Bay Conservation and Development Commission issues federal consistency determinations under the Coastal Zone management Act for areas within its jurisdicition.

- McAteer-Petris Act and San Francisco Bay Plan California's approved coastal management program includes the San Francisco Bay Plan (Bay Plan) developed by the San Francisco Bay Conservation and Development Commission. The Bay Conservation and Development Commission was formed under the authority of the McAteer-Petris Act, California Government Code (CGC) Section 66600 et seq., which authorizes the commission to regulate activities within the San Francisco Bay and its shoreline (including 100 feet landward from the shoreline) in conformity with the policies of the Bay Plan. The McAteer-Petris Act and the Bay Plan were developed primarily to halt uncontrolled development and filling of the bay. Their broad goals include reducing bay fill and disposal of dredged material in the bay, maintaining marshes and mudflats to the fullest extent possible to conserve wildlife and abate pollution, and protecting the beneficial uses of the bay. The Federal Coastal Zone Management Act, which requires compliance with approved state coastal zone management program, is a potential ARAR. Therefore, the substantive provisions of the McAteer-Petris Act and the Bay Plan are potential ARARs for this removal action.

Action-Specific ARARs

- Requirements under RCRA for characterization for pre-treatment of waste prior to disposal of hazardous waste on land (Title 22 CCR § 66268.7)

- Requirements under RCRA for pretransport (Title 22 CCR §§ 66262.30, 66262.31, 66262.32, 66262.33, and 66262.20-66262.23)

- Requirements under the Clean Air Act for excavation (Title 42 USC § 7401 et seq. and Bay Area Air Quality Management District Regulations 6, 6-301, and 6-302, and 6-305 and Regulation 8, Rule 40)

- Requirements under the Federal Hazardous Materials Transportation Law for transport of hazardous materials (Title 49 USC §§ 5101-5127 and Title 49 CFR Parts 171.2[f], 171.2[g], 172.300, 172.301, 172.302, 172.303, 172.304, 172.312, 172.400, and 172.504

- State Water Resources Control Board Order 99-08 adopted pursuant to Title 40 CFR Part 122, Subpart G

- Asbestos airborne toxic control measure for construction, grading, quarrying, and surface mining operations in naturally occurring asbestos, serpentine, or ultramafic rock at 17 CCR, § 93105

The proposed removal action will comply with ARARs identified above to the maximum extent practicable. Tables 1, 2, and 3 present the potential ARARs in more detail.

6. Project Schedule

The TCRA for the methane source area is expected to begin in the second half of 2008 and is expected to be completed within 6 months.

B. ESTIMATED COSTS

The DON has made a present-worth estimate of the removal action costs. The estimated costs include the direct and indirect capital costs of the proposed removal action. Post-removal site control costs are not anticipated for this TCRA. The items discussed below are considered to be capital costs.

Direct Capital Costs

Mobilization	$34,000
Construction costs	$344,000
Radiological Screening and waste characterization	$295,000
Waste disposal (2,500 cubic yards at $160/cubic yard)	$400,000
Excavation characterization	$43,000
Confirmation sampling	$8,000
Bonding	$10,000

Indirect Capital Costs

Planning documents	$96,000
Final report	$49,000
Project closeout	$10,000
Community/Regulatory agency interaction	$22,000
Project management	$181,000

Removal Action Total	**$1,492,000**

The estimated cost per cubic yard is $300, including direct and indirect capital costs. The planned removal action includes excavation of approximately 5,000 cubic yards of soil and debris. The total estimated cost is $1,492,000.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Methane is nontoxic, but it is highly flammable and may form explosive mixtures with air. Presently, risk to human health is posed by the threat of fire or explosion from methane in soil gas above the LEL (5 percent) and below the UEL (15 percent). Future activities at the site may significantly increase this risk through concentration and collection of the methane in onsite

structures constructed at or adjacent to the site. This could occur as part of future remedial activities and/or construction as part of redevelopment following property transfer.

VII. PUBLIC INVOLVEMENT

This AM for the planned TCRA was discussed during community meetings and through the Restoration Advisory Board (RAB). In compliance with the requirements of 40 CFR Parts 200.415(n)(2) and 300.820 (b), a public notice will be published concurrently with the project work plan that describes the planned TCRA and the availability of the project Administrative Record for public review. The public notice is planned to run in two local papers for five consecutive days.

The AM was also distributed to DTSC and U.S. EPA for their review. Where applicable, review comments and the DON's responses to those comments have been incorporated into this AM. These responses have been included as Appendix A.

Community relations activities to be conducted during the removal action will include:

- Presentation of the progress of the removal action during scheduled RAB and BRAC BCT meetings.
- Initiation of community outreach activities (on an as-needed basis) to discuss any impacts of removal action activities on local communities, and mitigation of those impacts.
- Maintenance of information repositories accessible to the public. To gain a more thorough understanding of the activities associated with the TCRA, the public is encouraged to review documents at the following sites:

  1) San Francisco Main Library
     100 Larkin Street
     Government Information Center, 5th Floor
     San Francisco, CA 94102
     Telephone: (415) 557-4500

  2) Anna E. Waden Library
     5075 Third Street
     San Francisco, CA 94124
     Telephone: (415) 715-4100

The complete Administrative Record is maintained by Ms. Diane Silva, Records Manager (EVR.DS), 937 North Harbor Drive, FISC Bldg 1, 3rd Floor San Diego, California 92132; telephone (619) 532-3676.

VIII. OUTSTANDING POLICY ISSUES

No outstanding policy issues exist for this removal action.

IX. RECOMMENDATION

This Action Memorandum was prepared in accordance with current EPA and DON guidance documents for TCRAs under CERCLA (EPA, 1990b; DON, 1996). This Action Memorandum identifies actions necessary to address the existing and/or potential risk of fire or explosion at IR-07 at Parcel B in HPS.

This removal action is recommended because it meets the criteria of effectiveness, implementability, and cost, as described in Section V. The proposed alternative provides short- and long-term effectiveness in protecting human health from the threat of fire or explosion due to methane gas by removing methane and its source material. This alternative does not involve any technical or administrative constraints on implementation. The estimated total cost of this proposed alternative is approximately $1.5 million.

This decision document represents the removal action for the methane source area at IR-07, in Parcel B, HPS in San Francisco, California. The removal action was developed in accordance with CERCLA, as amended, and is consistent with the requirements at 40 CFR Part 300. This decision is based on the Administrative Record for the site.

_____ _____

Keith S. Forman (Date)
BRAC Environmental Coordinator
By direction of the Director

X. REFERENCES

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Department of the Navy. 1996. "Basic Action Memo/Remedial Action Plan/Removal Action Work Plan Outline." March 21.

U.S. Environmental Protection Agency. 1990a. "Guidance on Remedial Action for Superfund Sites with PCB Contamination."

U.S. Environmental Protection Agency. 1990b. "Superfund Removal Procedures – Action Memorandum Guidance." EPA/540/P-90/004. December.

TABLES

TABLE 1: CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Final Action Memorandum, Time-Critical Removal Action for the Methane Source Area, Parcel B, Hunters Point Shipyard, San Francisco, California

Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
Resource Conservation and Recovery Act (Title 42 USC, Chapter 82, §§ 6901–6991[i])				
Defines Resource Conservation and Recovery Act hazardous waste. A solid waste is characterized as toxic based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Waste	Title 22 CCR §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These requirements are applicable for determining whether waste is hazardous.
Uranium Mill Tailings Radiation Control Act of 1978 (Title 42 USC § 7901 et seq.)				
Regulation establishes cleanup criteria for radium-226 averaged over 100 square meters not to exceed the background level by more than 5 pCi/g averaged over the first 15 centimeters.	Presence of radium-226 in land and buildings that are part of any processing site designated by the Secretary of Energy under § 102 of the Uranium Mill Tailings Radiation Control Act	Title 40 CFR Part 192.12(a)	Relevant and appropriate	This requirement is relevant and appropriate for residual radioactivity in soils. The Department of the Navy has agreed to a more stringent cleanup level of 2 pCi/g.

Notes:

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
CCR	*California Code of Regulations*
CFR	*Code of Federal Regulations*
et seq.	And the following ones
PCB	Polychlorinated biphenyl
pCi/g	Pico Curies per gram
TCLP	Toxicity characteristic leaching procedure
USC	*United States Code*

TABLE 2: LOCATION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Final Action Memorandum, Time-Critical Removal Action for the Methane Source Area, Parcel B, Hunters Point Shipyard, San Francisco, California

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Coastal Zone Management Act (Title 16 USC §§ 1451–1464)					
Within coastal zone	Conduct activities in a manner consistent with approved state management programs	Activities affecting the coastal zone, including lands there under and adjacent shore land	Title 16 USC § 1456(c) and Title 15 CFR Part 930	Relevant and appropriate	Removal activities will be conducted consistent with state management plans.
McAteer-Petris Act					
Within coastal zone	Conduct activities in a manner consistent with the McAteer-Petris Act and the San Francisco Bay Plan	Activities affecting San Francisco Bay that are subject to tidal action, to a 100-foot shoreline band surrounding the Bay	Section 66600 et seq.	Relevant and appropriate	Removal activities will be conducted in accordance with the substantive provisions of the McAteer-Petris Act and the San Francisco Bay Plan.

Notes:

§ Section
§§ Sections
ARAR Applicable or relevant and appropriate requirement
CFR *Code of Federal Regulations*
USC *United States Code*

TABLE 3: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Final Action Memorandum, Time-Critical Removal Action for the Methane Source Area, Parcel B, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
Resource Conservation and Recovery Act (Title 42 USC, Chapter 82, §§ 6901-6991[i])					
On-Site generation	Person who generates waste shall determine if that waste is a hazardous waste	Generator of waste	Title 22 CCR §§ 66262.10(a) and 66262.11	Applicable	The requirements in Title 22 CCR Division 4.5, Chapter 14, are applicable for any operation where waste is generated.
Land disposal	Requires generators of hazardous waste to determine if waste has to be treated before it can be disposed of on land; requires generators to notify treatment facility if waste is subject to land disposal restrictions and does not meet applicable treatment standards; and if the waste meets treatment standards, generators must sign a certification	Hazardous waste land disposal	Title 22 CCR § 66268.7	Applicable	Requirements are applicable if hazardous waste is to be land disposed.
Pretransport requirements	Hazardous waste must be packaged in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.30	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Hazardous waste must be labeled in accordance with DOT regulations before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.31	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Provides requirements for marking hazardous waste before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.32	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Generator must ensure that transport vehicle is correctly placarded before transport	Any operation where hazardous waste is generated	Title 22 CCR § 66262.33	Applicable	These requirements are applicable if hazardous waste is to be transported.
	Requires preparation of manifest for transport of hazardous waste off site	Any operation where hazardous waste is generated	Title 22 CCR §§ 66262.20-66262.23	Applicable	These requirements are applicable if hazardous waste is to be transported.

TABLE 3: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Draft Action Memorandum, Time-Critical Removal Action for the Methane Source Area, Parcel B, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
Clean Air Act (Title 42 USC § 7401 et seq.)					
Excavation	Sets forth opacity limitations	Soil excavation	BAAQMD Regulation 6, Rule 302	Applicable	These requirements are applicable for excavation activities
	Prohibits emission of particles in sufficient number to cause annoyance	Release of particles	BAAQMD Regulation 6, Rule 305	Applicable	This requirement is applicable for excavation activities
	Provides requirements for maintaining, covering, and stockpiling excavated soil	Soil stockpile	BAAQMD Regulation 8, Rule 40	Relevant and appropriate	These requirements are applicable for excavation activities.
Federal Hazardous Materials Transportation Law (Title 49 USC §§ 5101-5127)					
Transportation of hazardous material	Sets forth requirements for transporting hazardous waste, including representations that containers are safe, prohibitions on altering labels, marking requirements, labeling requirements, and placarding requirements	Interstate carriers transporting hazardous waste and substance by motor vehicle	Title 49 CFR Parts 171.2(f), 171.2(g), 172.300, 172.301,172.302, 172.303, 172.304, 172.312, 172.400, and 172.504	Relevant and appropriate	These requirements are relevant and appropriate for transporting hazardous materials on site.

TABLE 3: ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Draft Action Memorandum, Time-Critical Removal Action for the Methane Source Area, Parcel B, Hunters Point Shipyard, San Francisco, California

Action	Requirement	Prerequisite	Citation	Preliminary ARAR Determination	Comments
State Water Resources Control Board					
Stormwater Discharge	Order 99-08-DWQ is the State of California general permit for stormwater discharge from construction activities. It requires best management practices to reduce pollutants.	Stormwater discharge	Order 99-08 adopted pursuant to Title 40 CFR Part 122, Subpart G	Applicable	Order 99-08 applies to dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres. Dischargers are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity. Pursuant to the substantive permit requirements, best management practices will be taken to prevent construction pollutants from contacting storm water and to prevent erosion products from moving off site.
Air Resources Board					
Construction or grading in soil containing asbestos	This regulation sets forth requirements for road construction and maintenance, construction and grading operations in soil containing naturally occurring asbestos, serpentine or ultramafic rock.	Soil containing naturally occurring asbestos, serpentine or ultramafic rock.	CCR Title 17, 93105	Applicable	This regulation is potentially applicable for excavation activities if they will occur in areas containing asbestos, serpentine or ultramafic rock.

Notes:

§ Section
§§ Sections
ARAR Applicable or relevant and appropriate requirement
BAAQMD Bay Area Air Quality Management District
CCR *California Code of Regulations*
CFR *Code of Federal Regulations*
DOT U.S. Department of Transportation
DWQ Division of Water Quality
et seq. And the following ones
PCB Polychlorinated biphenyl
ppm Part per million
USC *United States Code*

FIGURES

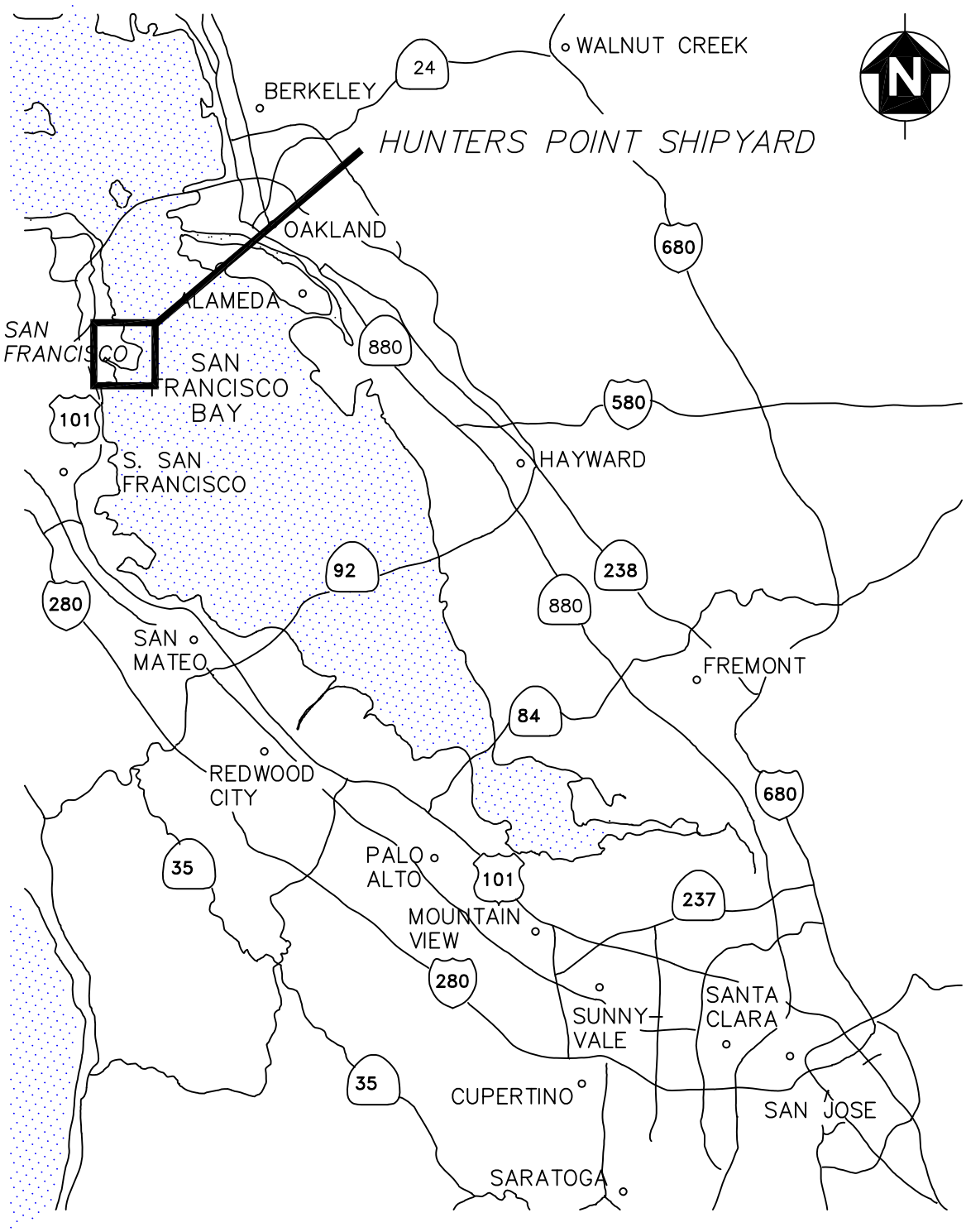

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Figure 1
LOCATION MAP

FINAL ACTION MEMORANDUM
HUNTERS POINT SHIPYARD, PARCEL B
METHANE SOURCE AREA
TIME-CRITICAL REMOVAL ACTION

SES-TECH

DRAWN BY: MD	CHECKED BY: PB	APPROVED BY: PB	DCN: SEST-3220-0002-0006	DRAWING NO: 0001A1.DWG
DATE: 05/16/08	REV:		CTO: 0002	

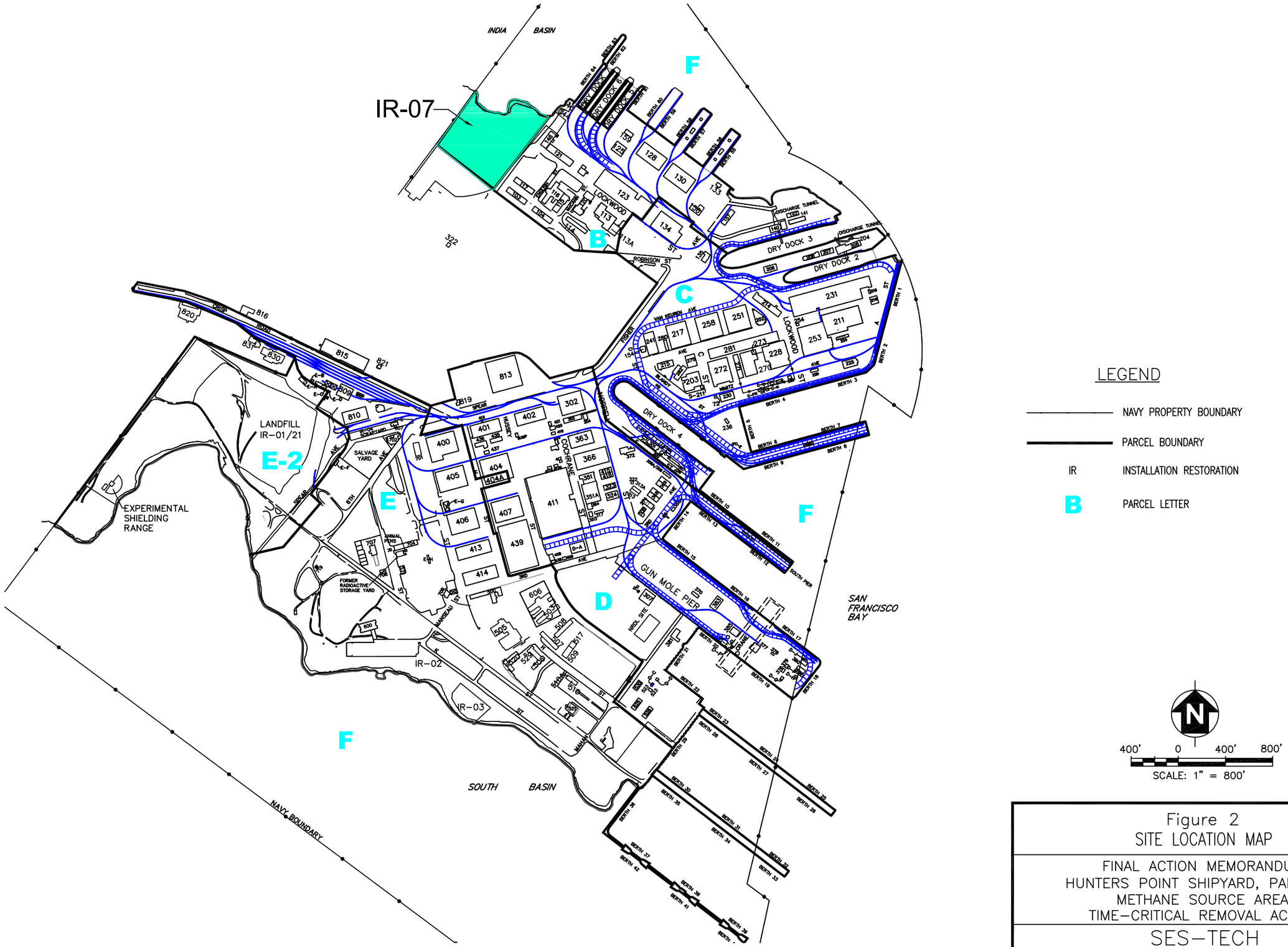

Figure 2
SITE LOCATION MAP

FINAL ACTION MEMORANDUM
HUNTERS POINT SHIPYARD, PARCEL B
METHANE SOURCE AREA
TIME-CRITICAL REMOVAL ACTION

SES-TECH

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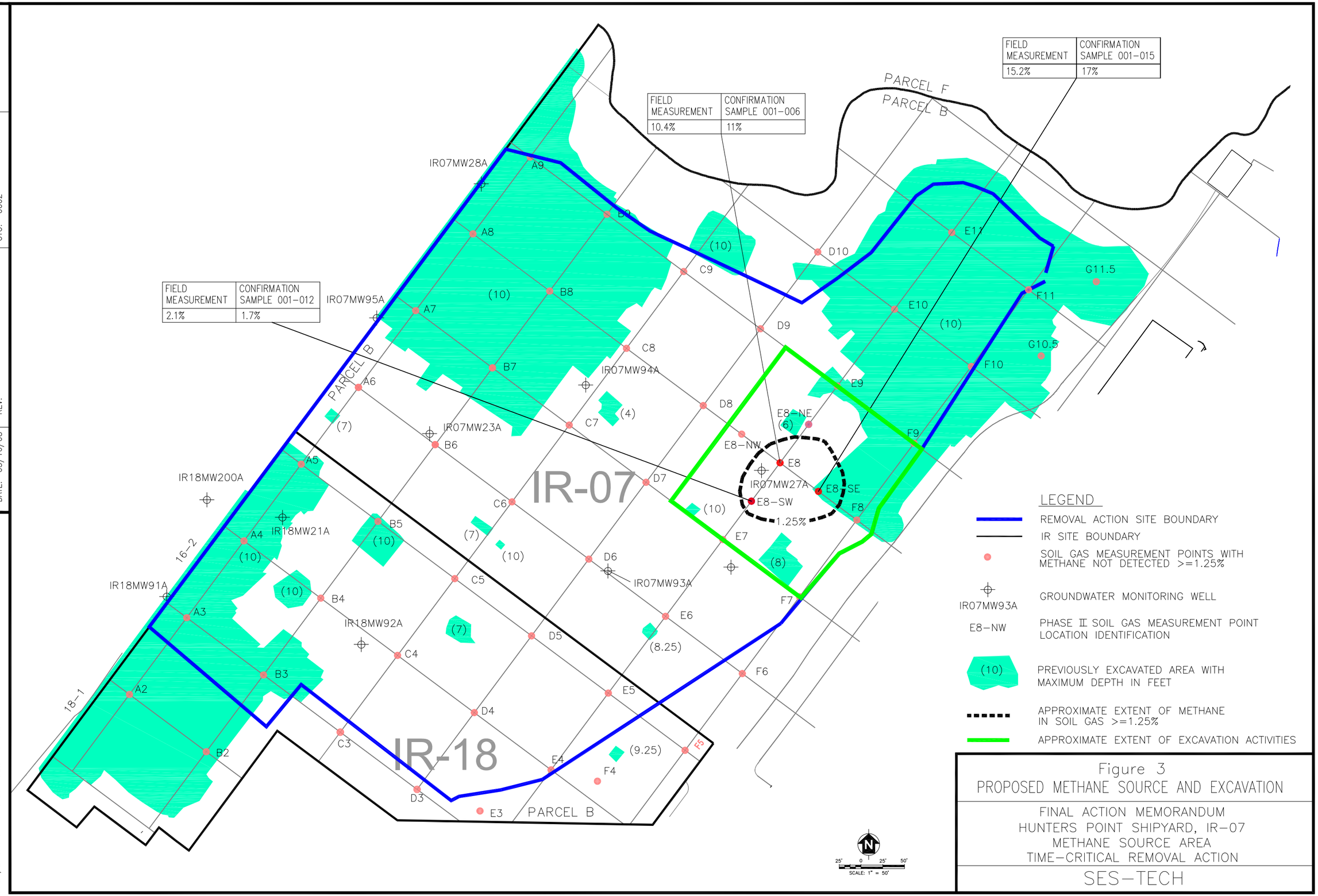

Figure 3
PROPOSED METHANE SOURCE AND EXCAVATION

FINAL ACTION MEMORANDUM
HUNTERS POINT SHIPYARD, IR-07
METHANE SOURCE AREA
TIME-CRITICAL REMOVAL ACTION

SES-TECH

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CTO: 0002
APPROVED BY: PB
CHECKED BY: PB
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DATE: 05/16/08

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APPENDIX A

RESPONSE TO COMMENTS FOR THE
DRAFT ACTION MEMORANDUM
TIME-CRITICAL REMOVAL ACTION FOR THE
METHANE SOURCE AREA AT IR-07, PARCEL B
DATED MARCH 6, 2008
DCN: SEST-3220-0002-0005

Reviewed by the California Regional Water Quality Control Board
Comments Dated: April 10, 2008

GENERAL COMMENTS	RESPONSE
Comment 1. References: Several references are either missing, incorrect, or outdated in the text or in the references section. Please revise the following:	**Response 1.** Comment noted. The following changes have been made in the Final Action Memorandum:
a. In the text and in the references section, please update references for the 2007 Draft Final Parcel B TMSRA to refer to the 2008 Final Document.	a. References to the TMSRA-RA have been updated to reflect the Final revision, dated March 2008.
b. Page 3 - Several references in the text presented on Page 3 are not included in the reference section. These include Tetra Tech 1998, Tetra Tech 2005, Tetra Tech 2005b, and HLA 1994, please include these references in the reference section.	b. The text and references have been modified to correctly identify and reference the investigations listed on Page 3.
c. Page 3, bullet #4 – Please revise this reference to correctly read 'PRC 1996c'.	c. The requested change has been made on Page 3.
d. Page 6, bottom sentence – Please revise this reference to read 'Tetra Tech, 2003a'.	d. The requested change has been made on Page 6.
e. References Section – There are 2 'Tetra Tech 2003' references. Please distinguish these by labeling them 2003a and 2003b. Also ensure these references are updated in the text.	e. The references to Tetra Tech 2003 have been revised through the entire document to correctly identify the specific investigation or report, Tetra Tech 2003 "a" or "b".

RESPONSE TO COMMENTS FOR THE
DRAFT ACTION MEMORANDUM
TIME-CRITICAL REMOVAL ACTION FOR THE
METHANE SOURCE AREA AT IR-07, PARCEL B
DATED MARCH 6, 2008
DCN: SEST-3220-0002-0005

Reviewed by the California Regional Water Quality Control Board
Comments Dated: April 10, 2008

SPECIFIC COMMENTS	RESPONSE
Comment 1. Page 3, Section II.A.1, Bottom Paragraph: The text does not mention all contaminants previously identified at IR-07. While this paragraph mentions that previous excavations have indicated that soil at IR-07 contained PAHs, PCBs and metals, it does not mention TPH. Please also mention that TPH contamination has been detected in soil at IR-07. This comment is also applicable to the **second paragraph of Section II.A.3, Site Characteristics.**	**Response 1.** Comment noted. Applicable sections of the document have been revised to include TPH as a contaminant detected in soil at IR-07.
Comment 2. Page 5, Section II.A.6, Maps, Pictures, and Other Graphic Representations: This paragraph indicates that Table 1 is a response action matrix, and Tables 2, 3, and 4 present ARARs. Tables 1, 2, and 3 in the back of the document present the ARARs, and the response action matrix is not presented. Please resolve these discrepancies.	**Response 2.** Comment noted. A response action matrix has not been included in this document; therefore the reference to Table 1 is incorrect. Tables 1, 2, and 3 comprise a summary of the chemical-, location-, and action-specific ARARs, respectively, for this TCRA. The oversight has been corrected throughout the document.
Comment 3. Page 10, Section V.A.3, Description of Alternative Technologies, bottom paragraph: The references to table numbers in this paragraph are incorrect. See specific comment #2 above.	**Response 3.** Please see Response to RWQCB Specific Comment 2.

RESPONSE TO COMMENTS FOR THE DRAFT ACTION MEMORANDUM TIME-CRITICAL REMOVAL ACTION FOR THE METHANE SOURCE AREA AT IR-07, PARCEL B DATED MARCH 6, 2008 DCN: SEST-3220-0002-0005	
Reviewed by the California Regional Water Quality Control Board Comments Dated: April 10, 2008	
Comment 4. Page 15 – Section VII – Public Involvement – This section refers to Appendix A, B, C, and D, but they are not included yet in this draft document. Please ensure these appendices are included in the final document.	**Response 4.** The referenced appendices were originally included as place-holders for use in subsequent revisions of this Action Memorandum. Based on the current schedule, the information which would have been included in these appendices is not yet available for the Final Action Memorandum. Although, the Navy anticipates that similar information shall be available and included in the Final Work Plan for this TCRA.