



# FINAL NAVAL AIR STATION ALAMEDA Restoration Advisory Board (RAB) Meeting Minutes

September 1, 2011

[www.bracpmo.navy.mil](http://www.bracpmo.navy.mil)

Building 1, Suite 140, Community Conference Center  
Alameda Point  
Alameda, California

The following participants attended the meeting:

## Co-Chairs:

Derek Robinson	Base Realignment and Closure (BRAC) Program Management Office (PMO) West, BRAC Environmental Coordinator (BEC), Navy Co-chair
Dale Smith	Restoration Advisory Board (RAB) Community Co-chair

## Attendees:

### RAB Members

Richard Bangert	Carol Gottstein, M.D.	Daniel Hoy
George Humphreys	James Leach	Kurt Peterson
Jean Sweeney	Jim Sweeney	Michael John Torrey

### Community Members/ Public Attendees

Gretchen Lipow

### Navy Members

Bill McGinnis	Navy Lead Remedial Project Manager (RPM)
Tony Megliola	Navy Base Closure Manager
Mary Parker	Navy RPM

**Regulatory Agencies**

Pankaj Arora	U.S. Environmental Protection Agency (EPA)
Doug deHaan	Alameda City Council
Melinda Dragone	EPA
James Fyfe	California Environmental Protection Agency Department of Toxic Substances Control (DTSC)
Alex Naugle	San Francisco Bay Regional Water Quality Control Board (Regional Water Board)
Xuan-Mai Tran	EPA
John West	Regional Water Board
Myriam Zech	Regional Water Board

**City of Alameda Representatives**

Peter Russell	Russell Resources/ Alameda Reuse and Redevelopment Authority (ARRA)
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**Contractors**

John McMillan	Shaw Environmental, Inc.
Betty Schmucker	Trevet Environmental, Inc.
Chuck Taylor	Tetra Tech
Tommie Jean Valmassey	Tetra Tech

The meeting agenda is provided as [Attachment A](#).

**MEETING SUMMARY**

**I. Welcome and Introductions**

Derek Robinson (Navy Co-chair) called the September 2011 former Naval Air Station Alameda (Alameda Point [AP]) RAB meeting to order, welcomed all to the meeting, and asked for introductions.

**II. Community and RAB Comment Period**

Dale Smith (RAB Co-chair) asked to add an agenda item on the Operable Unit (OU) 2A Proposed Plan. The RAB agreed unanimously to add the item before the BCT Update.

George Humphreys (RAB member) noted that a written response to a question posed by Kurt Peterson (RAB member) regarding Installation Restoration (IR) Site 24 at the August RAB meeting was included with the RAB mailer. Mr. Humphreys felt the explanation did not appropriately address the question. The question pertained to discharge from plating operations and flushing, which was done sporadically whenever tanks, systems, or lines were flushed. Mr. Humphreys said one would expect sedimentation in layers due to these periodic activities. Mr.

Peterson said he would like a clarification about what was coming out of the lines and when, and whether the Navy is confident it is getting the contamination. Mr. Robinson replied the intent of the response was not to be simplistic. Removal is planned down to the old Bay Mud layer, and sampling was conducted down to sediments that were in place prior to the presence of storm drains at AP. The Navy is confident it has found the extent of the sediment contamination. Ms. Smith said Mr. Peterson's question was about cadmium and it was not addressed in the response. Bill McGinnis (Navy Lead RPM) said Mr. Peterson's question was addressed at the August RAB meeting, and explained that cadmium was reported in sediment and not in water. Removing sediment creates turbidity, causing metals to be briefly suspended in water but then to resettle in sediment. The Navy is comfortable it is not causing dissolved cadmium concentrations in water, except for brief turbidity. Mr. Peterson agreed to revise his question and forward it to Mr. Robinson for response.

Ms. Smith asked if the RAB members had any comments on the response-to-comments (RTC) matrix provided by the Navy. Mr. Robinson said if RAB members have any additional thoughts on the RTCs to let him know. There were no comments on the RTCs.

## **II. Co-Chair Announcements**

Ms. Smith had no announcements. Mr. Robinson announced that the California least terns have left AP for the year. He announced that, like other federal entities, the Department of Defense (DoD) is experiencing budget issues. Although the fiscal year (FY) 2012 budget is "final," it can change until the funding is received by DoD. Funding for FY 2013 is not yet locked in place. Environmental cleanup is his number-one priority at AP, but budget cuts may be required in the near future. One way to potentially reduce costs for non-cleanup activities is to reduce RAB meeting frequency. He asked RAB members to think about quarterly or bi-monthly RAB meetings.

Mr. Peterson said that RAB meetings should consider document review deadlines so that a deadline does not pass without a RAB meeting to allow comments. Mr. Robinson said draft documents have 60-day comment periods, and bi-monthly RAB meetings could accommodate the review cycle. Jean Sweeney (RAB member) suggested meetings by conference call, allowing attendees to call in from many places. James Leach (RAB member) said bi-monthly meetings seemed okay to him, since most of the 34 sites have been cleaned up and the RAB should not need many more meetings to finish them. Mr. Robinson noted that only four Records of Decision still need completion. Mr. Torrey expressed the opinion that monthly meetings should still continue. Mr. Peterson suggested meeting every other month and by conference call on months when there is no in-person meeting. Ms. Smith disagreed, saying that meetings should continue until the work-plan phase is complete and only updates on work in progress are discussed. A meeting schedule change would not likely happen this calendar year.

Daniel Hoy (RAB member) and Richard Bangert (RAB member) both asked if the Navy would make the decision on RAB meeting reduction. Mr. Robinson said he has not heard this, but added that reducing meeting frequency could allow commitment of more funds to environmental

work. He also noted that the BRAC office will return to Naval Facilities Engineering Command administration on October 1.

Dr. Gottstein asked how much a RAB meeting costs. Tony Megliola (BRAC Base Closure Manager) said that each RAB meeting costs about \$10,000. DoD, like the rest of the government, is living under budget pressures and is always trying to balance priorities. No action needs to be taken yet, but the Navy would like the RAB to think about options. There is no prescribed meeting frequency within the RAB Rule. Mr. Robinson suggested revisiting this discussion in November and possibly implementing a change next year. Ms. Smith said there is still too much going on at AP to reduce meeting frequency at this time. Mr. Bangert said he had seen a report that the Navy has spent a certain sum on cleanup at AP and asked if they can still receive funding that has been committed (about \$400 million) but not spent. Mr. Robinson said that appropriated funding probably would not be taken away. Mrs. Sweeney noted that a previous Alameda RPM, Lou Ocampo, said the Navy is always working two years out in terms of funding and scheduling, and a project in the pipeline would probably stay there.

#### **IV. Operable Unit (OU) 2C Feasibility Study Addendum**

Mr. Robinson introduced Mary Parker (Navy RPM) to provide an update on the Feasibility Study (FS) Addendum for OU-2C ([Attachment B](#)). Ms. Parker said the FS Addendum was prepared to supplement the FS Report for OU-2C IR Sites 5 and 10 finalized in May 2011. It addresses possible human health risks associated with potential and known radiologically impacted drain lines that originate in OU-2C and are located outside Buildings 5 and 400. Lines include Storm Drain Lines A, B, G, and Z; the discharge points of Storm Drain Lines A, B, and Z; the industrial waste line; and the sanitary sewer line. Ms. Parker placed a Draft FS Addendum copy in the information repository. Ms. Smith received a copy.

Ms. Smith expressed concern about draft documents not being placed in the AP information repository anymore, that only final documents are available. Mr. Robinson said the Navy process for placing draft documents has changed, but his office is working to make sure draft reports are placed in the information repository for public access.

On slide 6, which shows the location of the lines and outfalls, Mrs. Sweeney asked if Line F connects with Outfall A. Ms. Parker said no, the drain systems are not connected and showed where the different lines enter and leave Building 5. Mr. Peterson asked where in Building 5 the radium dials were painted. Chuck Taylor (Tetra Tech) said the painting area was upstairs in Building 5. Mr. Peterson asked if Line F runs under that painting area to Outfall F. Mr. McGinnis said yes, that was the line most directly impacted. Mr. Peterson asked if Line G overlaps this area; Ms. Parker said yes, Line G comes from the same area/source. Mrs. Sweeney asked if Line F was included in the original OU-2C FS. Ms. Parker said yes, Line F inside the building was addressed in the original OU-2C FS. Ms. Parker noted that Lines F and FF outside the building were removed and replaced during the previous Time-Critical Removal Action (TCRA). Lines that run underneath the buildings were addressed in the original OU-2C FS, and the exterior lines are addressed in this Addendum unless they were removed and replaced during the previous TCRA.

Mr. Bangert asked for clarification about the types of drain lines and how waste products got into storm drains. Ms. Parker said some of the drains came into the buildings and were sometimes called “storm sewer lines.” The drain lines from the buildings had waste in them. Mr. McGinnis explained that floor drains in the buildings originally drained to Seaplane Lagoon. Over time, engineers divided lines into storm drain lines and industrial lines; this part of the presentation addresses the original floor drains.

Ms. Smith asked if the industrial waste line connects to Outfall B. Ms. Parker said the line discharges to Oakland Inner Harbor, but not through Outfall B. Part of the line is “forced main” (pumped); contamination was found closer to the building than to the Oakland Inner Harbor discharge point. Mr. Peterson asked if Line G was later and Line F earlier. Ms. Parker said they do not know exactly when these lines were hooked into a similar source area. The Navy went through as much documentation as possible and did due diligence, but did not find an exact design figure showing when the two lines were connected. In the early years everything went untreated into Line F, and then into Line G and into Seaplane Lagoon. The Navy reviewed all potential source areas and did a comprehensive evaluation of the lines, their sources, and their connections. Mr. Robinson said that what is important about the FS Addendum and this map of lines (slide 6) is that the Navy went through and sampled all the lines with a radiological source and, after that investigation, separated out the lines for evaluation in the FS Addendum. Ms. Parker added that the Addendum is very comprehensive and looks at areas not previously evaluated.

During the review of slide 10, Mr. Humphreys asked how many picocuries per gram (pCi/g) is background for radium-226. Ms. Parker said background is 0.5602 pCi/g, which is the same as the remedial goal in the Final FS for OU-2C.

During the review of slide 11, Mrs. Sweeney asked what was found in the storm drain lines and at what concentrations. Ms. Parker said radium-226 was reported at a maximum of 75 pCi/g in Line B, and approximately 30 pCi/g or less in Lines A-G and the industrial waste lines. Ms. Smith said that Tetra Tech originally suggested investigating the lines leaving the buildings. Ms. Parker agreed, and said that originally the Navy did not think the lines were connected to a radiological source. The FS Addendum presents the results of the additional investigation. Ms. Sweeney asked if Lines A and B run inside or outside the buildings. Ms. Parker said some of Lines A and B run inside the buildings and they were addressed in the original FS. The FS Addendum addresses lines outside the building.

During the review of slide 12, Ms. Parker explained that the active storm drain lines are shown in green and the inactive industrial waste line is shown in red. Mr. Peterson asked what other sources of radium-226 existed at Building 5 besides paint from radium dials. Mr. Taylor said paint scraping and maintenance were done at Building 5. Mr. Peterson thought there should be more drain lines shown for Building 5. Ms. Parker and Mr. McGinnis explained that not all the existing lines are shown on the Addendum figure, as the lines under the building were evaluated in the original OU-2C FS. The figure on slide 12 only shows the lines outside the buildings for purposes of this document. Both sets of lines (FS and FS Addendum) are addressed.

Mr. Bangert commented that sediment samples in Oakland Inner Harbor reportedly have no issues, but some lines draining into the harbor reported 75 pCi/g in the sediment and wondered how these two facts square. Ms. Parker said 75 pCi/g was reported in one location only and the sediment was removed at that time as part of a previous action. Ms. Parker said that for comparison to Line F, 1,116 pCi/g was reported in one sediment sample in Line F. Peter Russell (ARRA) said there are a lot of other sediment sources at Oakland Inner Harbor and the harbor is dredged, so what went into the sediment in the past is probably not there. Mrs. Sweeney said there were other industrial buildings there before Building 5, and Lines A and B are the earliest lines. Seaplane Lagoon was probably not dredged then. Dr. Russell said the southern half of Building 5 is 5-10 years older than the northern half. Prior to the passage of the Clean Water Act, no one really thought about separating wastes and just flushed them out into waterways.

Mr. Humphreys asked if the ground around Lines A and B was sampled. Ms. Parker said no, that all samples reported are from sediment within, not outside the lines. Soil outside the lines is considered in the FS Addendum alternatives. Ms. Smith said the FS Addendum acknowledges that pipes were cracked and the line and soil will not be removed. Ms. Parker said each alternative varies and some alternatives include removal of lines and soil.

During the review of slide 15, Mr. Peterson asked why Alternative D3 is not ranked higher, since it is the “remove everything” alternative. He asked if the Navy is pointing the RAB toward Alternative D5, which looks like it is ranked higher. Ms. Parker said part of the ranking is tied to sustainability, long-term and short-term impacts, implementability, and other criteria. Mr. McGinnis said the evaluation and ranking of the alternatives follow the EPA and National Oil and Hazardous Substances Pollution Contingency Plan (NCP) criteria, and that all the criteria except No Action are rated as protective of the environment. Mrs. Sweeney asked what “limited excavation and disposal” means in Alternatives D5 and D6. Mr. McGinnis said that refers to removal of certain contaminated pipe sections based on the results of the camera inspection and other work, where the soil may be sampled along each section and removed, as needed.

Michael John Torrey (RAB member) asked which alternative the state prefers. Ms. Parker said the FS Addendum was distributed to the agencies in early August and comments are due on October 8, 2011. The state and federal agencies will provide their input then. The proposed plan is the next step after the FS.

Mr. Leach asked about institutional controls (ICs) as part of several alternatives. Ms. Parker said the ICs generally would include controls on digging in the vicinity of the lines. More details will be provided in a Land Use Control Remedial Design if an alternative requiring ICs is selected. Ms. Smith said the FS Addendum states specifically that any digging is the responsibility of the developer and not the Navy.

Mr. Humphreys asked about the roof drains, ventilation systems, and fume hoods in Building 5 and if the Navy surveyed them for radioactivity. The Navy had previously said this would be done. Ms. Parker said that all of the roof drains were evaluated, and Mr. Taylor said the contaminated ventilation systems and fume hoods were removed and radioactive surveys done. Contamination was reported in the ceiling in Buildings 5 and 400. Mr. Robinson said this work

is being done under the Basewide Radiological Program. Ms. Smith asked if this work will require removing parts of buildings. Mr. Taylor said yes, that some walls have been removed and more will be. Contamination was reported under the floor tiles (which contain asbestos), and the tiles will be removed and the asbestos abated. Contaminated materials will be disposed of as radioactive waste. Carol Gottstein (RAB member) asked about the amount of surface contamination in the ventilation systems and noted that it is not reported in pCi/g. Mr. Taylor said that sophisticated radioactive survey equipment is used to measure the surface contamination in each area. Mr. Taylor said the surface contamination is measured in disintegrations per minute per 100 square centimeters (dpm/100 cm<sup>2</sup>), and that levels have been reported in the 100s, which is considered fairly low.

Dr. Gottstein asked about the remedy cost figures and wondered if the costs should be given in ranges rather than exact figures. Ms. Parker said there is a plus-or-minus factor assigned to each value and the table on slide 15 is a summary. Mr. Taylor said the costs are determined according to EPA guidance, which is a prescribed process. The FS Addendum has details on the cost figures. Ms. Parker reminded the RAB that copies of the draft are available for review. Mrs. Sweeney said she prefers Alternative D6, since she feels ICs do not work. Mr. Torrey agreed with Mrs. Sweeney. The RAB voted on the alternatives; five members voted for Alternative D6 and three members abstained. Ms. Smith said she felt a vote on alternatives is premature.

## **V. Operable Unit 2A Proposed Plan Meeting Summary**

Mr. Robinson said the RAB received a presentation on the OU-2A FS alternatives in March 2011. The Proposed Plan public meeting was held the previous evening (August 31) to receive public comment on the Navy and agency's preferred remedy. He noted that a couple of RAB members (Dr. Gottstein and Mr. Bangert) attended the meeting and asked if there were any particular questions on the Proposed Plan.

Mr. Humphreys noted that "no action" is proposed for soil and felt that "explain-away" language was used to avoid digging and removing soil for all of the OU-2A sites (9, 13, 19, 22, and 23). He was concerned about metals and pesticides in soil, and noted that at other locations where these were reported the soil was excavated. He noted that monitored natural attenuation (MNA) and ICs for groundwater at IR Sites 9 and 19 would take 22 years. Mr. Humphreys said he does not like ICs or long, drawn-out remedies; his preference is for active remedies that use *in situ* chemical oxidation (ISCO) or bioremediation. Mr. Robinson explained that ISCO was done at Sites 9 and 19 and reached its technological limits for treatment of the plume. Future land use and high groundwater salinity were also considered in reaching the proposed groundwater remedy of MNA and ICs.

Ms. Smith said that ICs hamper the city of Alameda from releasing the property for reuse for 22 years, and she was not sure the Department of Energy (the agency involved with the proposed Lawrence Berkeley National Laboratory [LBNL] project) would accept the property with ICs on it. Mr. Robinson explained that the groundwater ICs would only be imposed on drinking the groundwater for 22 years, and the property is suitable for commercial redevelopment today. Dr. Russell added that Site 9 is part of the LBNL proposal area and Site 19 is not. Mrs. Sweeney

asked if a map is available showing the groundwater plume post-ISCO. Mr. Robinson said that information is presented in the OU-2A FS.

## **VI. BCT Update**

Mr. Robinson introduced Xuan-Mai Tran (EPA) who provided the BRAC Cleanup Team (BCT) Update. Ms. Tran reviewed the three main topics discussed at the August BCT meeting:

1. OU-2C FS Addendum – the BCT received the briefing that the RAB heard tonight. Agency technical experts are reviewing the document now.
2. IR Site 24 Remedial Design/Remedial Action Work Plan – this addresses sediment removal at Site 24 in the southeast corner of Seaplane Lagoon. The design is now under agency review.
3. Five-Year Review – the previous Five-Year Review included the Marsh Crust; this one addresses about 10 more IR sites and is more base-wide in scope. It reviews the progress of the remedies and whether the remedies are doing what they are supposed to do. The document is now under agency review.

Ms. Tran added that conference calls between BCT meetings are often held to discuss comments. Mrs. Sweeney asked if it turns out remedies are not working, will the RAB be informed. Ms. Tran said yes, remedy effectiveness (or lack of) will be documented and tracked. Ms. Smith asked when fieldwork will start at Site 24. Mr. McGinnis said work should begin in December and finish before the start of next year's least tern nesting season (March 2012). Ms. Smith asked if Ms. Tran provides comments on the Navy's documents. Ms. Tran said that she and the other EPA reviewers make comments and present them as one set of EPA comments to the Navy. Ms. Smith noted that former Naval Station Treasure Island (TI) has a Site Management Plan (SMP) that lays out documents and timelines in a table. Ms. Tran said AP also has an SMP that does the same thing.

Additional introductions were made for two new agency representatives who will be working on AP. Pankaj Arora, EPA, introduced himself and presented his technical background. He will replace Melinda Dragone (EPA) and will work with Ms. Tran. Mr. Arora can be reached at (415) 972-3040 or [arora.pankaj@epa.gov](mailto:arora.pankaj@epa.gov). Mr. West introduced Myriam Zech of the Regional Water Board. Ms. Zech presented her technical background and said she will be working on petroleum site closures at AP and on the petroleum program at TI. She can be reached at [mzech@waterboards.ca.gov](mailto:mzech@waterboards.ca.gov).

## **VII. Approval of August 4, 2011 RAB Meeting Minutes**

Ms. Smith asked for comments on the August 4, 2011, RAB meeting minutes. Since the meeting was running longer than expected, she asked if the RAB would agree to continue the meeting in order to finish the minutes; the RAB agreed. Mr. Torrey made the following comment:

- Page 5, third paragraph: Rewrite the first sentence: “Michael John Torrey (RAB member) asked what the fieldwork comprised” to say “*Michael John Torrey (RAB member) asked about the composition of the fieldwork.*”

Mr. Humphreys provided the following comments:

- Page 3, first paragraph: “Resource Conservation Facility Act (RCRA)” should be “Resource Conservation and *Recovery* Act (RCRA).”
- Page 3, second paragraph: After the first sentence, add the sentence: “*He said the material was inconsistent with common sense.*” Change the existing third, fourth, and fifth sentences from: “If that is the case, a gap would have been created which could allow contamination to get through. Mr. Humphreys also noted the plume does not line up with the gate, so either the gate is closed or the treatment box is plugged up. According to the vertical section depicted in the presentation, the plume appears to dip down and under the wall” to say “*That would indicate the presence of a gap in the wall. However, no gap exists, and the plume does not line up with the gate, so either the gate is shown in the wrong location, is closed, or the treatment box is plugged up. According to the vertical section depicted in the presentation, the plume appears to dip down and under the wall. That indicates an absence of a gap in the wall and is inconsistent with a narrow plume.*”

The RAB voted to approve (with one abstention) the August 4, 2011, RAB meeting minutes with corrections provided above. Ms. Smith asked for approval of the June 2, 2011, meeting minutes with corrections made at the last meeting, and as she provided via e-mail following the August RAB meeting. The RAB approved the June 2, 2011, meeting minutes as corrected.

### **VIII. Review of Action Items**

The status of previous action items was reviewed and is provided in the updated table below. No new action items were raised at the RAB meeting. Items grayed out have been completed at or before the August RAB meeting. Mr. Bangert noted that a request had been made for a cost estimate for demolishing Buildings 5 and 5A. Mr. Robinson said that figure (\$20 million) was included in the OU-2C FS (not the FS Addendum, as previously indicated in the Action Items). Mr. Humphreys added that the RTCs for RAB comments for OU-2C, page 7, indicated an extra cost of \$5.9 million.

<b>Action Items:</b>	<b>Previous Item #/ Action Item Status/ Action Item Due Date:</b>	<b>Initiated by:</b>	<b>Responsible Person:</b>
1. Request for Presentations: a. Site 25 Plume Status Tracking  Postponed Presentations (pending further action or information prior to scheduling the presentation): 1. Site 1 Radiological RD/RA work plan	a./Pending/2011	RAB	Mr. Robinson
2. Clarify the monitoring well numbering system for IR Site 1 from the June 2, 2011, RAB meeting minutes	Completed	Dr. Gottstein	Mr. Robinson
3. Finalize June RAB Meeting minutes at next RAB meeting, pending resolution of comment from Ms. Smith	Completed	RAB	RAB (Ms. Valmassey to contact Ms. Smith)
4. Provide attachments to June 2, 2011, RAB Meeting Minutes	Completed	RAB	Navy Contractor
5. Find out if the Alameda historical radiological assessment is available on line or hard copy	Completed	Dr. Gottstein	Mr. Robinson

The meeting was adjourned at 8:40 PM. The next RAB meeting will be held at 6:30 pm on Thursday, October 6, 2011, at 950 West Mall Square, Alameda.

## **ATTACHMENTS**

### **NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD MEETING ATTACHMENTS**

- A      Naval Air Station Alameda Restoration Advisory Board Meeting Agenda, September 1, 2011, (1 page)
  
- B      OU-2C Feasibility Study Addendum (20 slides)

# ***RESTORATION ADVISORY BOARD***

***NAVAL AIR STATION, ALAMEDA***

## ***AGENDA***

**SEPTEMBER 1, 2011, 6:30 PM**

**ALAMEDA POINT – BUILDING 1 – SUITE 140**

**COMMUNITY CONFERENCE ROOM**

(FROM PARKING LOT ON W MIDWAY AVE, ENTER THROUGH MIDDLE WING)

<b><u>TIME</u></b>	<b><u>SUBJECT</u></b>	<b><u>PRESENTER</u></b>
<b>6:30 – 6:35</b>	<b>Welcome and Introductions</b>	<b>Community and RAB</b>
<b>6:35 – 6:50</b>	<b>Community and RAB Comment Period*</b> (Optional brief discussion about Responses to Comments)	<b>Community and RAB</b>
<b>6:50 – 7:15</b>	<b>Co-Chair Announcements</b>	<b>Co-Chairs</b>
<b>7:15 – 8:05</b>	<b>OU-2C Feasibility Study Addendum</b>	<b>Mary Parker</b>
<b>8:05 – 8:15</b>	<b>BCT Update</b>	<b>Xuan-Mai Tran</b>
<b>8:15 – 8:30</b>	<b>Approval of Minutes Review Action Items</b>	<b>Dale Smith</b>
<b>8:30</b>	<b>RAB Meeting Adjournment</b>	

\* If there is time at the end of the agenda, additional comments will be taken.



## Welcome

Operable Unit 2C Feasibility Study  
Addendum  
Alameda Point, CA

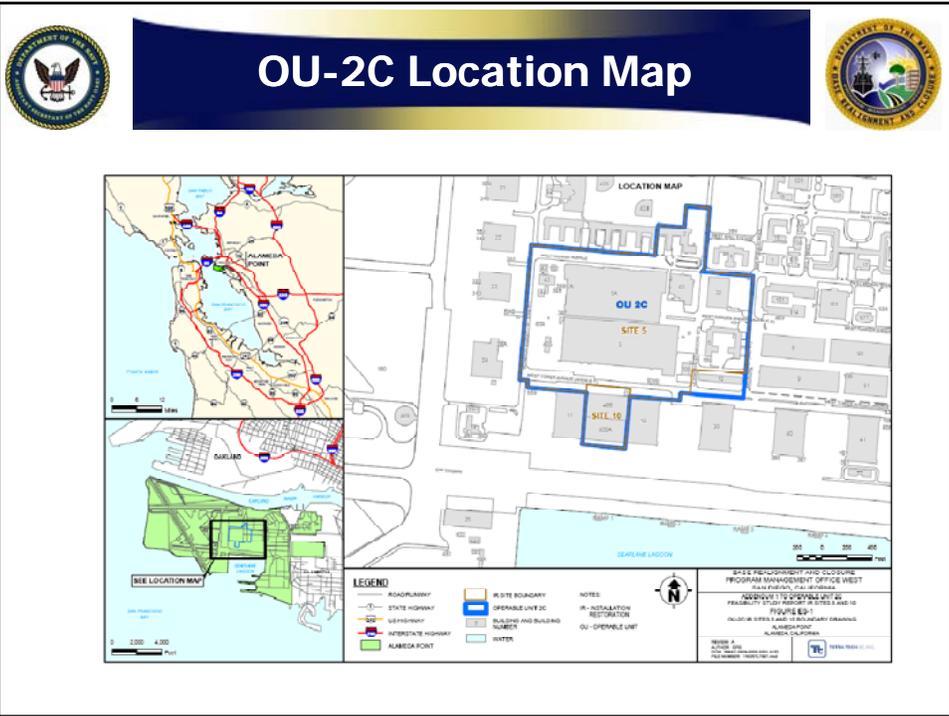
Mary Parker  
Navy Project Manager

RAB Meeting  
September 1, 2011



## Purpose

The purpose of the discussion is to provide an overview of the content of the Draft Operable Unit 2C (OU-2C) Feasibility Study Addendum.



## Background

- The FS Addendum was prepared to supplement the FS Report for OU-2C IR Sites 5 and 10 finalized in May 2011.
- The FS Report addressed radiologically-impacted lines beneath Buildings 5 and 400.



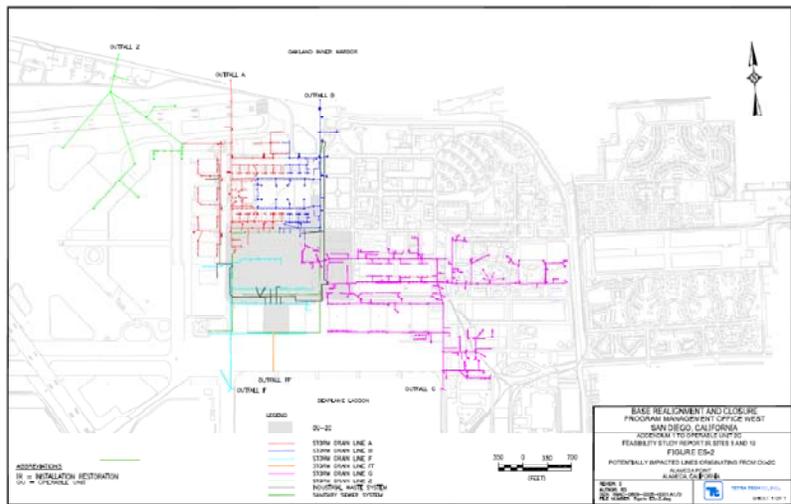
# Background



- The addendum addresses possible human health risks associated with potential and known radiologically impacted drain lines that originate in OU-2C and are located outside Buildings 5 and 400.
- Lines include Storm Drain Lines A, B, G, and Z; discharge points of Storm Drain Lines A, B, and Z; industrial waste line; and sanitary sewer line.



# Potentially Impacted Lines





## Addendum Content



The addendum provides the technical information necessary to select a final remedy for radiologically impacted drain lines originating in OU-2C and includes:

- Dose modeling and risk assessment to evaluate whether action is required.
- Development of remedial action objectives/remedial goal.



## Content (continued)



- Identification and evaluation of technology options.
- Development and analysis of remedial alternatives.



## Risk Assessment Results



- Results of dose modeling and risk assessment showed that no action is required for the sanitary sewer line, Storm Drain Line Z, and Oakland Inner Harbor.
- Results for Storm Drain Lines A, B, and G and the industrial waste line showed that action is required in some parts of these lines.



## Remedial Goal



- A remedial goal (RG) of 1.0 pCi/g greater than background for radium-226 ( $^{226}\text{Ra}$ ) is presented in the FS Addendum, which is the same as the RG in the Final FS Report for OU-2C.





## Remedial Alternatives



- Alternative D1- No action
- Alternative D2- Institutional controls (ICs)
- Alternative D3- Excavation, disposal, and replacement for the main trunk lines in storm drain lines A, B, and G and excavation and disposal of industrial waste line.
- Alternative D4- Excavation and disposal of the industrial waste line and institutional controls for the main trunk lines of storm drain lines A, B, and G.



## Remedial Alternatives



- Alternative D5- Hydro-Jetting, limited excavation, and disposal for main trunk lines of storm drain lines A, B, and G and institutional controls for the industrial waste line.
- Alternative D6- Hydro-Jetting, limited excavation, and disposal for the main trunk lines of storm drain lines A, B, and G and excavation and disposal of the industrial waste line.



## Alternatives Summary Table



Alternatives	Cost (\$M)	Overall Rank
D1 – No Action	0.00	Not Evaluated
D2 – Institutional Controls	0.77	●
D3 – Excavation, Disposal, and Replacement for Main Trunk of Storm Drain Lines A, B, and G and Excavation and Disposal of the Industrial Waste Line	57.69	●
D4 – Excavation and Disposal of the Industrial Waste Line and Institutional Controls for Main Trunk of Storm Drain Lines A, B, and G	13.18	●
D5 – Hydro-Jetting, Limited Excavation and Disposal for Main Trunk of Storm Drain Lines A, B, and G, and Institutional Controls for the Industrial Waste Line	5.80	●
D6 – Hydro-Jetting, Limited Excavation and Disposal for Main Trunk of Storm Drain Lines A, B, and G, and Excavation and Disposal of the Industrial Waste Line	16.23	●

*Notes:*  
 ● ● ●  
 Medium

*Abbreviations and Acronyms:*  
 M – million



## Discussion



# QUESTIONS?