

**FINAL**  
**NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD**  
**MEETING SUMMARY**

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ALAMEDA POINT  
SSIC NO. 5090.3

[www.bracpmo.navy.mil](http://www.bracpmo.navy.mil)  
Building 1, Suite 140, Community Conference Center  
Alameda Point  
Alameda, California

March 1, 2007

The following participants attended the meeting:

**Co-Chairs:**

George Humphreys	Restoration Advisory Board (RAB) Community Co-chair
Thomas Macchiarella	Base Realignment and Closure (BRAC) Program Management Office (PMO) West, BRAC Environmental Coordinator (BEC), Navy Co-chair

**Attendees:**

Salem Attiga	EMS, Inc.
Karen Barnes	Kleinfelder
Jim Barse	Community member
Andrew Baughman	BRAC PMO-West Remedial Project Manager (RPM)
Doug Biggs	Alameda Point Collaborative (APC) Representative
Neil Coe	RAB
Anna Marie Cook	U.S. Environmental Protection Agency (EPA)
Tommie Jean Damrel	Tetra Tech EM Inc. (Tetra Tech)
Alona Davis	Sullivan International Group (Sullivan)
Diana Davis	EMS, Inc.
Doug Delong	BRAC PMO West, Environmental Compliance Manager
Leora Feeney	Golden Gate Audubon Society
Susan Goss	California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC)
Jeff Hess	Innovative Technical Solutions, Inc. (ITSI)
Rachel Hess	ITSI
Joan Konrad	RAB
James Leach	RAB
Dot Lofstrom	DTSC
Patrick Lynch	Community member

Frank Matarrese	Alameda City Council
John McGuire	Shaw Environmental and Infrastructure, Inc. (Shaw)
Bert Morgan	RAB
Peter Russell	Russell Resources/City of Alameda
Christy Smith	U.S. Fish and Wildlife Service (USFWS)
Dale Smith	RAB/Golden Gate Audubon Society
Michael John Torrey	RAB/Housing Authority of the City

The meeting agenda is provided in Attachment A.

## MEETING SUMMARY

### I. Approval of Minutes

Mr. Humphreys called the meeting to order at 6:30 p.m.

Ms. D. Smith provided the following comments:

- Page 4 of 11, first full paragraph, seventh sentence will be revised to, "When the sheet piles are removed, concrete will be used to fill the holes."
- Page 8 of 11, second full paragraph, second sentence will be revised to, "There was a site walk and meeting with the BCT on June 19, 2006, and a meeting with the BCT in August 2006."

Mr. Humphreys provided the following comments:

- Page 2 of 11, Section II, second paragraph, the name "Burt" will be corrected to read "Bert."
- Page 6 of 11, first partial paragraph, sixth line, the word "how" will be removed.
- Page 11 of 11, first paragraph, last sentence will be revised to, "Mr. Humphreys commented that there was no radiological survey performed in the wetlands area of Site 2."

The minutes were approved as amended.

### II. Co-Chair Announcements

Mr. Macchiarella commented that Mr. Humphreys' statement on the last line of the February 2007 minutes was inaccurate, and he noted that the wetlands had been tested for radiological contamination. Mr. Humphreys replied that, according to Mr. Peter Strauss' review, the wetlands were not surveyed in the same way as other areas, with detectors on a cart. Mr. Macchiarella replied that other types of analysis were completed. Mr. Baughman commented that the samples that were collected from the wetlands were analyzed for chemicals and radionuclides. The wetlands would have to be drained to use the cart method for surveying. Mr. Humphreys said that radioactivity would have been dispersed randomly throughout the material that was deposited in the wetlands, so that a surface or near-surface sample would not necessarily represent contamination. Mr. Baughman commented that the soil samples collected did not show any elevated levels, and that the Navy decided that draining the wetland for further surveys was not necessary. The measurements were 0.6 picoCuries per gram, which is consistent with background.

Mr. Humphreys distributed the list of documents and correspondence the RAB received during February 2007 (Attachment B-1). Noteworthy documents include draft site management plans for Corrective

Action Areas (CAAs) 6 and 7 and final field activity reports for CAAs 6, 7, and 13. Mr. Humphreys noted that these entries represent five separate documents. Another noteworthy document was the draft project plan for CAAs 3A, 3B, 3C, 5B West, 13 East, and C. Mr. Humphreys said that this document covers the areas within Operable Unit (OU)-2B and shows a number of diesel and gasoline plumes. He noted that these plumes are in addition to the dense nonaqueous phase liquid (DNAPL) that was discussed at the February 2007 meeting.

Mr. Macchiarella followed up on a question posed by Mr. Matarrese during the February 2007 RAB meeting on the soccer field and the nearby area of concern (AOC). The Navy reviewed the issue and found that the data showing contamination in the surface soil were old and that any volatile organic compounds (VOCs) in the surface have probably volatilized. Given the distance of more than 50 feet to the soccer field from the AOC and because no contamination was found in subsurface soil, the Navy concluded that there is no concern with the soccer field. Ms. D. Smith asked if the soccer field is downwind or upwind of the AOC. Mr. Macchiarella said that the soccer field is to the southeast of the AOC. Ms. D. Smith commented that the soccer field could therefore be downwind of the AOC. Mr. Macchiarella replied that he was not certain. Mr. Matarrese agreed that the soccer field is downwind of the AOC.

Mr. Macchiarella announced that the Navy's environmental team won an award from the Chief of Naval Operations for the environmental restoration program work conducted in 2005. There were several components to the award package, including a discussion of community input and positive RAB events. Mr. Macchiarella noted that he would provide the RAB the package that was submitted. As a result of the award, the Navy's team is eligible for the Secretary of the Navy award, which may in turn lead to the Department of Defense environmental award. Ms. D. Smith requested that the Navy provide the RAB with a list of the components of the package and the programs that were included. Mr. Macchiarella said that he would provide the list.

### **III. Site 26 Remedial Design Data Gap Sampling Results**

Mr. Macchiarella noted that the Site 26 project manager, Mr. Steve Peck, was unable to attend the RAB meeting and introduced Ms. Hess, who began a presentation on the Site 26 remedial design (RD) data gap sampling results. A handout of the presentation is included as Attachment B-2. Installation Restoration (IR) Site 26 is 32 acres and is centrally located within Alameda Point. The site is occupied by four former aircraft hangars that are part of the Alameda Point Historic District. The area of interest for the data gap sampling investigation was southeast of the former aircraft hangar, Building 20. Ms. Hess identified IR Site 26 and Building 20 on the location map on Slide 4.

Previous investigations identified a shallow groundwater plume southeast of Building 20 contaminated with VOCs and primarily containing trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), and vinyl chloride. Based on the findings of the remedial investigation (RI) and feasibility study (FS), the 2006 final record of decision (ROD) identified the following remedies: no action for soil; and remedial action for groundwater by in situ chemical oxidation (ISCO) followed by in situ bioremediation treatment (ISB). The ROD specified the following remedial goals (RGs) for the contaminants identified in groundwater: 5 micrograms per liter ( $\mu\text{g/L}$ ) for TCE,  $6\mu\text{g/L}$  for cis-1,2-DCE, and  $0.5\mu\text{g/L}$  for vinyl chloride.

Slide 8 showed the study area at IR Site 26 Building 20. Ms. Hess noted that the map showed the extent of contaminant concentrations in groundwater that exceeded RGs based on previous data that were presented in the ROD. The primary objective of the data gap investigation was to evaluate whether the plume extended beneath Building 20. The other objective was to further evaluate the lithology and depth of contamination within the boundaries of the plume that had been established in the ROD.

Data gap field activities involved three phases. The first phase was borings with grab groundwater sampling. Based on the results, the second phase was installing and sampling monitoring wells within the plumes. The third phase was to conduct an aquifer test to provide supplemental information for the RD. Four direct-push borings were drilled to approximately 21 feet below ground surface (bgs) and one additional boring was drilled to 101.5 feet bgs. Multiple discrete-depth grab groundwater samples were collected from the borings for analysis of VOCs. Seven 4-inch diameter monitoring wells were installed to a depth of 15 feet bgs. Groundwater samples were collected from the wells for analysis of VOCs and dissolved metals. Ms. D. Smith asked if the depth of 15 feet bgs was below the plume. Ms. Hess replied that samples were collected near the bottom of the plume. There were no detections in the grab groundwater samples at 21 feet bgs, which was the depth of the borings. Ms. D. Smith asked why one boring was drilled to a depth of 101.5 feet. Ms. Hess replied that ITSI was looking for the second water bearing zone but encountered clay from 21 feet to 101.5 feet.

Aquifer testing was conducted to establish a radius of influence for the aquifer and to provide site-specific data on hydraulic conductivity and effective porosity that would be used to support development of the RD. The aquifer testing included installing three 2-inch-diameter piezometers and conducting a step test and a 24-hour pump and recovery test using well 26MW-03 as the pumping well for both tests. The pumping well was located in the center of the plume.

The results of the data gap investigation confirmed that the boundaries of the groundwater plume in the final ROD represent current site conditions. The groundwater sample results indicated that high concentrations of VOCs are restricted to fill materials that overlie the native soil. Slide 16 showed a map of the study area with the data gap results. The extent of the contaminant concentrations in groundwater that exceed RGs based on the data gap investigation was shown on the map. Slide 17 compared the pre- and post-data gap extent of concentrations in groundwater that exceed RGs.

Evaluation of both previous and current geologic logs provided more detailed understanding of the site lithology. Fill materials overlay the native Bay sediment unit (BSU). The BSU extends from 15 to 15.5 feet bgs. A laterally persistent clay layer was encountered at 21 feet bgs and persisted from 21 to 101.5 feet bgs in one location. Slide 19 showed a cross-section of the groundwater plume. Contours for total VOCs were identified on the figure. The contamination did not extend into the clay layer.

The aquifer tests concluded that the optimal sustainable pumping rate for the aquifer is 2 gallons per minute with a radius of influence of 110 feet after 100 minutes of pumping. Hydraulic conductivities ranged from 0.023 to 0.09 feet per minute. The effective porosity ranged from 0.07 to 0.37.

The data gap investigation confirms that the boundaries of the groundwater plume in the final ROD are consistent with the current site conditions. It also concluded that concentrations that exceed RGs do not extend beneath Building 20. Groundwater sample results indicated that VOCs are restricted to fill materials that overlie the native BSU. Data gap results will be used to support development of the RD, which is in progress. The data will be used to identify where to place the injection points for the ISCO remedial alternative.

Ms. Konrad asked about the shape of the contour lines on the cross-section figure of the groundwater plume on Slide 19. Ms. Hess commented that the contours were based on the RI/FS data and the data gap sampling results. The profile will help to establish the locations of injection points for ISCO.

Mr. Humphreys commented that it appears the contamination is adsorbing into the clay. Ms. Hess responded that the grab groundwater samples indicated no VOC contamination in the clay layer.

Mr. Humphreys asked if the BSU was the Merritt Sand. Ms. Hess replied that the BSU is the Bay Mud.

Merritt Sand was not found in the boring that extended from 21 to 101.5 feet bgs. The BSU shown in the figure is a poorly graded sand layer.

#### **IV. Sites 1, 2, and 32 Removal Action Work Plan Presentation**

Mr. Baughman began a presentation on the removal action (RA) work plan for Sites 1, 2, and 32. A handout of the presentation is included as Attachment B-3. The presentation included a discussion of the site background and location, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, the time-critical removal action (TCRA) planned activities, and the schedule.

IR Site 1 is 78 acres and is located in the northwestern corner of Alameda Point. IR Site 1 is the main disposal area used from 1943 to 1956. IR Site 32 is 5.8 acres and is also located in the northwestern corner of Alameda Point. IR Site 32 includes Buildings 594 and 82 and was formerly used for storing equipment, vehicles, and aircraft. IR Site 2 is 110 acres and is located in the southwestern corner of Alameda Point; it was the main disposal area from 1956 to 1978. IR Site 2 includes 33 acres of wetlands. Mr. Baughman identified IR Sites 1, 2, and 32 on the map on Slide 3. Slide 4 showed an aerial photograph of the sites.

Slide 5 showed a flow diagram of the CERCLA process. The draft final RI with response to comments (RTCs) is being prepared for IR Site 32. IR Site 2 is in the draft final FS stage and will be issued April 4, 2007. The draft ROD for IR Site 1 will be issued to the agencies on April 11, 2007.

The RAB voted in support of the TCRA in February 2006. The TCRA follows Alternative S4-3 from the FS for IR Site 1: complete removal of the former pistol range berm, screening, and off-site disposal. The TCRA also follows Alternative S6-4 from the FS for IR Site 1: to remove radium 226 in the surface and subsurface. All radiological anomalies will be removed from areas outside the main disposal area (Area 1A), including the disposal trench within Area 1B. A survey was performed to fill the data gaps along the shoreline of IR Sites 1, 2, and 32 and the entire area of IR Site 32. Anomalies identified in the survey that exceeded background and remedial goals will be removed under the TCRA.

Planned activities before excavation include the following: environmental resources survey and biological monitoring - mobilization started February 19, 2007; vegetation clearance; topographic surveying; and materials potentially possessing explosive hazard (MPPEH) survey and geophysical survey of the berm and disposal trench. Excavation includes the former firing-range berm and debris pits, removal of radioactive material, and the disposal trench. Post-excavation sampling and stockpile characterization will be followed by site restoration and demobilization by June 2007. Biological monitoring will continue throughout.

Slide 8 showed a photograph of the firing range. There is a two-step process for the former firing-range berm removal. The first step is to transfer excavated material to screening pads, where it is spread in a 6-inch layer for a MPPEH and radiological survey, visual and instrument screening. The material then is transferred to an on-site Trommel-type screening plant to separate the soil and shell casings into stockpiles of various sizes. Each stockpile will be then be chemically and radiologically screened again and disposed of off site. Approximately 5,100 cubic yards of material is anticipated. Mr. Humphreys asked why the Navy needs to screen the material a second time and divide it into different sizes if it will all be disposed of off site. Mr. Baughman replied that the various stockpiles may be disposed of at different locations and that sifting the material makes it easier to characterize and demonstrate no materials of concern are overlooked. Mr. Humphreys asked if material that is not contaminated will be disposed of off site. Mr. Baughman replied that it would be disposed of off site.

Slide 10 showed a schematic diagram of the configuration for the Trommel-type screening plant. The 6-inch grizzly catches large items. After it passes through a rotating drum, material is sifted into stockpiles of various sizes. Slide 11 showed photographs of a typical screen plant. The grizzly is shown in the left photograph, and the rotating drum is shown in the right photograph.

Removal of radioactive materials in the small areas that do not include the disposal trench involves excavation of areas where elevated readings were found during the characterization survey. Soil removal will continue until the source is removed. After the source is removed, an additional 12 inches of soil will be removed in all directions or until removal action objectives are met. The excavation will undergo screening and sampling to confirm removal, and then the areas will be filled with clean imported backfill. All excavated soil is disposed of off site by a Radiological Affairs Support Office (RASO)-approved radiological waste broker. Approximately 250 cubic yards of soil is estimated for removal. Ms. D. Smith asked about the number of radiological anomalies at IR Site 1. Mr. Baughman replied that he would show a map of all of the hot spots. Ms. D. Smith asked if the 250 cubic yards of soil was the total for all three sites. Mr. Baughman replied that it is the total for all three sites, but does not include the disposal trench.

Geophysical surveying is the first step in the disposal trench removal action and delineates the boundary of excavation. Radiological and MPPEH found in the first 6 inches of soil will be extracted by hand and removed. An excavator will remove the remainder of soil in the first 6 inches within the excavation. The second 6 inches of soil will then be scanned. The process will continue until the debris is removed or groundwater is reached. The area will be filled with clean, imported backfill. Approximately 320 cubic yards of loose soil is anticipated. Mr. Humphreys commented that the map does not show any hot spots in IR Site 2. Mr. Baughman replied that a few hot spots in IR Site 2 will be shown on the map later in the presentation.

Slide 14 showed the results of radiological surveys for IR Sites 1 and 32. The pink areas show results that are at about background. The pink areas that exceed the criteria of about 9,000 net counts per minute (cpm) will be excavated, and all other areas shown in color on the map will be removed. The pink cloud shape in IR Site 1 represents the disposal trench and berm excavation. The pink area in IR Site 32 is attributed to the naturally occurring readings in gravel. Mr. Humphreys asked the spots in the firing range are the result of depleted uranium rather than radium. Mr. Baughman replied that there is no history of depleted uranium at the site. Mr. Humphreys asked if the spots beneath the berm indicate that the berm was constructed on top of areas where radium had been previously disposed of. Mr. Baughman responded that the spots are surface locations identified during the survey. When the berm is removed, soil will be scanned in 6-inch increments to make sure that all materials of concern are removed.

Slide 15 showed the results of the radiological survey for IR Site 2. Mr. Baughman noted that the green dotted line is the boundary of the wetlands and the blue around the edge is a fence. There are removals at the former radiological "shack." The blue and green spots are locations where all materials will be removed. The pink spots along the south boundary are a result of the naturally occurring readings from the riprap. This area was hand surveyed between the riprap, and one spot shown in blue is planned for removal.

The action memorandum was submitted January 31, 2007, and was announced in the local newspaper. The final TCRA work plan will be issued March 2, 2007. Mobilization began February 19, 2007. The removal action will begin in March 2007. The excavation will end and demobilization will occur in May 2007. Ms. D. Smith commented that the removal action at IR Site 2 is occurring during bird nesting season. Mr. Baughman replied that a biologist will be on site at all times. There are not many removal spots in IR Site 2, and each excavation will be about a 4-foot radius. Ms. D. Smith commented that there may be a goose with an egg near an excavation. Mr. Baughman replied that the biologist would make

sure the area is avoided and the area would be excavated later. The birds are a concern and so the biologist will be present at all times. Ms. D. Smith commented that it would be wise to excavate the center-most spots first at IR Site 2, adding that fewer birds may be nesting there in early March. She asked if the USFWS thought that the Navy would avoid disturbing nesting birds such as the Canada goose by excavating in early March. Ms. C. Smith replied that she was uncertain about this specific site but that it is possible that some ground-nesting birds, such as Canada geese, stilts, killdeer, terns and gulls, would be disturbed. She added that the removal action is occurring during the breeding season. Ms. D. Smith commented that the RAB had discussed trying to avoid the nesting season. Mr. Baughman added that there are not many excavations within IR Site 2. Most locations are in the northern portion of the site, with only a few near the wetlands. Ms. D. Smith commented that the birds do not remain in the wetlands, but use the entire area. Mr. Baughman replied that the biologist will be looking specifically for nesting birds at each location and no nests will be disturbed. He added that the work plan may include more detail about avoiding nesting birds.

Ms. D. Smith commented that the radiological survey mentioned a bunker near the radiological shack that was used to store radiological materials. She asked if that bunker was sampled for radiological material and noted that the original intended use was not storage of these materials, although it was later used in that capacity. Mr. Baughman commented he was aware only of Bunker 357, but he would investigate and discuss it further after he reviews the reference to the bunker in the radiological survey.

Mr. Lynch said that he was concerned that neither landfill site had been tested for asbestos. He added that the screen operation may become a source of airborne asbestos and that asbestos testing is needed to proceed with handling the soil. Mr. Baughman responded that the Navy looked for asbestos at IR Site 2 in the area where the initial assessment study indicated asbestos had been disposed of, but he was uncertain for IR Site 1. He added dust control measures are in place. Mr. Lynch commented that there was no analytical data for asbestos in his review of the RI reports. He added that asbestos is a hazard to humans and an aquatic hazard to fish, and he could not understand why there has been no analysis when it is clear that asbestos was disposed of at both locations. Mr. Baughman said that he would consider the issue. Mr. Humphreys commented that the screening operation may create lead-contaminated dust if there is lead on the surface of the shell casings. Mr. Baughman responded that dust control measures will be in place and that the lead will be contained and disposed of properly. Mr. Humphreys asked if the dust control measures included filters or spraying water. Mr. Baughman replied that standard water suppression methods would be employed but he would need to review the work plan to check for specific controls on the screening plant.

## **V. BCT Activities**

Mr. Macchiarella noted that Mr. Erich Simon of the Regional Water Control Board (Water Board) was unable to attend the meeting and that Ms. Lofstrom would discuss the BCT activities. Ms. Lofstrom said that the BCT held its regular monthly meeting by teleconference in February. Most recently, there was a technical meeting to discuss the OU-5 RD, which addresses the plume of benzene and naphthalene. The BCT discussed the details of the remedy, specifically the monitoring well design and the number of monitoring wells that would be used.

The morning of March 1, 2007, the California state regulators met at Alameda Point with Mr. Baughman, who provided a tour of Sites 1, 2, and 32. Some of the regulators attending were Mr. Charlie Huang from the California Department of Fish and Game and Mr. Robert Wilson, a health physicist from the Department of Health Services. Mr. Huang has reviewed work plans, RIs, FSs and any other documents on sensitive species; Mr. Wilson reviewed documents dealing with radiological issues. Mr. Wilson was not able to attend to the March RAB meeting but noted that he will attend a future meeting. Ms. Goss of DTSC manages some Alameda Point projects. Ms. Lofstrom noted that the regulators also toured a small

property near the soccer field. The Navy will issue a draft finding of suitability for transfer (FOST) report for this property to the agencies on March 1 or 2, 2007.

## VI. Community and RAB Comment Period

Ms. D. Smith asked that the RAB meeting minutes be less "laborious" and the RAB members' comments be more fully expressed. She believes that there is too much detail about the presentations and that the RAB member comments are condensed into a single sentence that does not fully convey the concern. She added she gets "bogged down" in the details when she reads the minutes before the meeting.

Mr. Macchiarella asked if the minutes should dwell less on the presentations and make sure that the RAB's discussion is more fully captured. Ms. D. Smith replied that some of her comments were omitted on the area near the Seaplane Lagoon and the plume at Building 360. She added that the minutes should focus on the RAB members rather than on the full descriptions of the consultants' presentations.

Mr. Humphreys commented that he found a May 11, 2004 presentation by Glenna Clark, Navy, in regards to his question from the February meeting about whether the DNAPL plume is part of the same plume from OU-2B. The presentation indicated that a cancer risk of  $6.8 \times 10^{-2}$  was posed by the VOC plume that covers most of OU-2B. The plume overlaps the DNAPL and also the petroleum plumes for diesel and gasoline in the same area. Three different programs must be considered to obtain an overall view of groundwater in this area, and it seems like a difficult issue to understand.

Mr. Humphreys asked Ms. Cook about her comments on accelerating the cleanup of OU-2B in general. Ms. Cook replied that IR Site 4, Building 360, is her primary concern as the highest concentrations of VOCs are located there. The potential off gassing from DNAPLs is a health risk via inhalation. The ingestion pathway has been evaluated but is not currently a concern because groundwater is not used for drinking water. Concentrations in the groundwater are such that EPA wants treatment to begin as soon as possible to reduce the amount of off gassing. Mr. Humphreys asked if the DNAPL is the source of the other VOCs that are more widespread. Ms. Cook replied that Building 360 at IR Site 4 contributed heavily to the VOCs in the area and that the DNAPLs were the major initial source. The plume spread as the DNAPL dissolved into the groundwater. This issue is compounded by Sites 11 and 21 to the west, each with significant VOC plumes that have merged with the Site 4 plume to create one large plume with a large variation in concentrations. The six-phase heating project that is currently in operation is performing mass removal and is decreasing the inhalation risk posed by the plume under Building 360.

Mr. Humphreys stated that in an earlier report it appears that the plume reaches the edge of the Seaplane Lagoon and that there are releases into the environment where contamination is being dispersed and diluted as it enters the lagoon. Ms. Cook replied that protecting Seaplane Lagoon is a primary concern. The DNAPL portion of the plume at Building 360 reaches a depth of 45 to 60 feet. The Seaplane Lagoon is about 20 feet deep. The majority of the DNAPL plume seems to be low in the aquifer compared with the depth of the lagoon. The contamination may be released into the lagoon via storm drains in the upper regions of the aquifer. The focus of the cleanup is to address the area that is considered the source of the VOCs, which is under Building 360. Mr. Humphreys commented that even though the Seaplane Lagoon is shallow, there may be contamination in the layers of sand below the surface sediment. He added that there may be a concern if, in the future, the contaminated material is dredged for a ferry terminal. Ms. Cook replied that the nature of the DNAPL is positive in this case because it tends to sink, such that the only DNAPL that would migrate into the lagoon would be in the dissolved phase, which would be less concentrated. VOC concentrations that are a threat to aquatic life are much higher than the levels that pose a risk to human health, the maximum contaminant levels (MCLs) used in this area. Remediation will remove VOCs down to the MCLs; and, if the goal is achieved in the next few years, the threat to the Seaplane Lagoon will also be eliminated. Mr. Torrey asked how the depth of the plume was measured. Ms. Cook replied that the Navy characterized the plume using Hydropunch samples and monitoring wells

during the ISCO project at Building 360. More is known about the plume now compared with 3 years ago because it has been characterized laterally and vertically. The six-phase heating project so far seems to be successful in cleaning up this plume. Ms. D. Smith pointed out that the RAB has frequently commented that sampling has not been adequate near the edge of Seaplane Lagoon. Ms. Cook replied that she agrees with that. A data gap sampling work plan for OU-2B is currently moving to the draft final stage. One focus of the data gap is a series of Hydropunch borings to further delineate the groundwater as it enters the Seaplane Lagoon and also to install monitoring wells to intercept any contaminated groundwater before it reaches the lagoon. The worst-case scenario is that concentrations are detected that exceed levels that are allowed to enter the Seaplane Lagoon. If these concentrations were to be detected, the regulators would seek a removal action in advance of the remedial action. The worst-case scenario is not expected, but the wells will be included to make certain that these concentrations are not detected. The Water Board was adamant that the wells be part of the work plan. Sampling is planned for fall 2007.

Mr. Humphreys asked if the diesel plume and gasoline plume are floating product or are dissolved in the groundwater. He also asked if those plumes will be treated or removed. Ms. Cook replied that the general protocol used for a plume of gasoline or total petroleum hydrocarbons (TPH) in the vicinity of a VOC plume is to remove as much as possible of the floating product component of the TPH plume immediately. The next technology would be used for the VOC plume. Mr. Humphreys asked if the next technology would also remove dissolved petroleum product. Ms. Cook said she did not oversee the TPH program and was uncertain. MCLs have been established as the cleanup level for benzene. Regardless of whether the TPH or CERCLA program is used to clean up the benzene, the result would be the MCLs. The two programs must decide the most efficient process for removal of overlapping contaminants. Mr. Macchiarella commented that certain technologies could address both at the same time if they are in the same area. Mr. Humphreys noted that the Navy has used Fenton's reagent to remove chlorinated volatile compounds. He asked if this reagent would be used for the plume of benzene and naphthalene at OU-5. Mr. Macchiarella replied that the decision has not been made and that the OU-2B RI/FS will evaluate various alternatives. CAA 3 is intended to address petroleum on the northern side of OU-2B, and treatment will probably begin with product removal similar to past Navy actions. If the system for floating product addresses dissolved-phase petroleum, then treatment would continue. If it is not designed for addressing the dissolved-phase petroleum, the Navy could develop a remedy under OU-2B to address both chlorinated solvents and the remaining dissolved-phase petroleum. In that case, it would be addressed under CERCLA.

Ms. Cook followed up on the question about the plume of benzene and naphthalene in groundwater at OU-5. She said that ISCO technology is not being used. The more passive system of biosparging with nutrient enhancement would be used because it is a residential area. Mr. Humphreys commented that he thought the treatment would begin with the Fenton's reagent, followed by biosparging. Ms. Cook replied that it was decided that biosparging alone would be effective.

Mr. Barse, a member of the community, commented that he found the document repository at 950 West Mall Square helpful. He noted that particularly helpful documents were the BRAC cleanup plan, the community relations plan from 2003, and the Alameda Point final comprehensive guide to environmental baseline survey (EBS). He added that these documents cannot be found in the information repository in the new public library and is a deficiency. Mr. Barse asked if it would be possible to house the documents mentioned earlier at the public library because they provide an introduction and overview for community members interested in becoming involved in the discussion. Mr. Macchiarella commented that the new public library did not offer the Navy as much space for the information repository as did the old library. There are only a few shelves to house newer documents; once the shelves are full, the oldest documents will be removed. The main information repository is in Room 240 of 950 West Mall Square. The DTSC has populated a website with historical documents that can be accessed on line at <http://www.envirostor.dtsc.ca.gov>. Mr. Humphreys asked how the main library managed the old

documents. Mr. Macchiarella said that the DTSC took the documents. Ms. Lofstrom said that DTSC is housing some of the documents from the old main library. Ms. Cook asked if the Navy is formatting the documents so that they can be accessed on the Internet. The Navy is scanning in the administrative record with a quality control review. Mr. Macchiarella said that the Navy's administrative record includes every document that the Navy uses in its decision making process for a site and that the information repository houses a subset of those documents; chiefly, the documents that are obviously useful to the public. The Navy's administrative record is housed at the Naval Facilities Engineering Command in San Diego. The Navy does not plan to provide a Web server for these documents, but will share them with other organizations that have Web servers such as the water board and DTSC.

The meeting adjourned at 7:45 p.m.

**ATTACHMENT A**  
**NAVAL AIR STATION ALAMEDA**  
**RESTORATION ADVISORY BOARD MEETING AGENDA**  
**March 1, 2007**

**(One Page)**

# ***RESTORATION ADVISORY BOARD***

***NAVAL AIR STATION, ALAMEDA***

## ***AGENDA***

**MARCH 1, 2007, 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 - 6:45</b>	<b>Approval of Minutes</b>	<b>Mr. George Humphreys</b>
<b>6:45 - 7:00</b>	<b>Co-Chair Announcements</b>	<b>Co-Chairs</b>
<b>7:00 – 7:30</b>	<b>Site 26 Remedial Design Datagap Sampling Results</b>	<b>Ms. Rachel Hess</b>
<b>7:30 – 8:00</b>	<b>Sites 1, 2 and 32 Removal Action Workplan Presentation</b>	<b>Mr. Andrew Baughman &amp; Mr. Abram Eloskof</b>
<b>8:00 – 8:10</b>	<b>BCT Activities</b>	<b>Mr. Erich Simon</b>
<b>8:10 – 8:30</b>	<b>Community &amp; RAB Comment Period</b>	<b>Community &amp; RAB</b>
<b>8:30</b>	<b>RAB Meeting Adjournment</b>	

**ATTACHMENT B**

**NAVAL AIR STATION ALAMEDA  
RESTORATION ADVISORY BOARD MEETING HANDOUT MATERIALS**

- B-1 List of Reports and Correspondence Received during February 2007, George Humphreys, RAB Community Co-Chair (2 pages)
- B-2 Presentation on the Datagap Sampling Results at IR Site 26, presented by Rachel Hess, ITSI (12 pages)
- B-3 Presentation on IR Sites 1, 2, and 32 TCRA, presented by Andrew Baughman, BRAC PMO West (9 pages)

**ATTACHMENT B-1**

**LIST OF REPORTS AND CORRESPONDENCE RECEIVED FEBRUARY 2007**

**(Two Pages)**

Restoration Advisory Board  
Documents and Correspondence  
Received during February 2007

Documents

1. February 6, 2007, "Draft Site Management Plans for Corrective Action Areas 6 and 7, and Final Field Activity Reports for Corrective Action Areas 6, 7, and 13 (Building 397), Alameda Point, Alameda, California", prepared by Shaw Environmental, Inc., for BRAC Program Management Office West.
2. February 9, 2007, "Final Floating Product Investigation Report, Corrective Action Areas 3A and 5B, Alameda Point, Alameda, California", prepared by Innovative Technical Solutions, Inc., for BRAC Program Management Office West.
3. February 7, 2007, "Quarterly Technical Memorandum for Corrective Action Area 4C, Alameda Point, Alameda, California", prepared by Shaw Environmental, Inc. transmitted by Mr. Thomas L. Macchiarella to Mr. Erich Simon, Regional Waster Quality Control Board.
4. February 13, 2007, "Final Action Memorandum, CERCLA Time-Critical Removal Action for Installation Restoration Sites 1, 2, and 32, Alameda Point, California", CD and replacement pages, prepared by Tetra Tech EC, Inc., transmitted by Mr. Abram S. Eloskof to Federal Facility Agreement Members.
5. February 13, 2007, "Draft Final Time Critical Removal Action Work Plan for Installation Restoration Sites 1, 2, and 32 Alameda Point, California", CD and replacement pages, prepared by Tetra Tech EC Inc., transmitted by Mr. Abram S. Eloskof to Federal Facility Agreement Members
6. February 9, 2007, "Draft Project Plans Corrective Action 3A, 3B, 3C, 5B West, 13 East and C, Alameda Point, Alameda, California", prepared by Shaw Environmental, Inc. for BRAC Program Management Office West.
7. February 26, 2007, "Final Spring 2006 Alameda Basewide Annual Groundwater Monitoring Report, Volume 1, Alameda Point, Alameda, California", CD copy, prepared by Innovative Technical Solutions, Inc. for BRAC Program Management Office West.
8. February 23, 2007, "Draft Revision 1, Remedial Investigation Report, IR Site 20 (Oakland Inner Harbor) and IR Site 24 (Pier Area), Alameda Point, Alameda, California", prepared by Battelle; Blasland, Bouck, and Lee, Inc.: and Neptune & Company for BRAC Program Management Office West.

Correspondence

1. February 8, 2007, "Request for Extension for Review of Draft Soil Remedial Investigation Report-Revision 1, IR Site 31, Marina Village Housing, Alameda Point, Alameda County", from Ms. Dot Lofstrom, P. G., DTSC, to Mr. Thomas L. Macchiarella, BRAC Program Management Office West.
2. February 8, 2007, "California Department of Health Services Review of Draft Remedial Investigation (RI) Report, Installation Restoration (IR) Site 32,

Northwest Ordnance Storage Area, Alameda Point, Alameda County”, from Ms. Dot Lofstrom, P. G., DTSC, to Mr. Thomas L. Macchiarella BRAC Program Management Office West.

3. February 8, 2007 (received February 14, 2007), “Review of Draft Site Investigation Report, Transfer Parcel EDC-17, Alameda Point, Alameda, California, December 2006”, from Xuan-Mai Tran, U. S. EPA to Mr. Thomas Macchiarella, BRAC Program Management Office West.
4. February 22, 2007, “Review of Draft Historical Radiological Assessment Report (Volume II- Use of General Radioactive Materials) for Alameda Naval Air Station, Alameda Point, California”, from Ms. Dot Lofstrom., P. G., DTSC, to Mr. Thomas L. Macchiarella, BRAC Program Management Office West.

**ATTACHMENT B-2**  
**DATA GAP SAMPLING RESULTS AT IR SITE 26**  
**(12 Pages)**



**BRAC**  
PMO WEST

Data Gap Sampling Results  
IR26, Alameda Point, Alameda

Presentation for Alameda Point  
Restoration Advisory Board  
March 1, 2007



IR26 Background

**BRAC**  
PMO WEST

- IR26 is an approximately 32-acre site centrally located within Alameda Point.
- The site is occupied by 4 former aircraft hangars that are part of the Alameda Point Historic District.



# IR26 Background (continued)

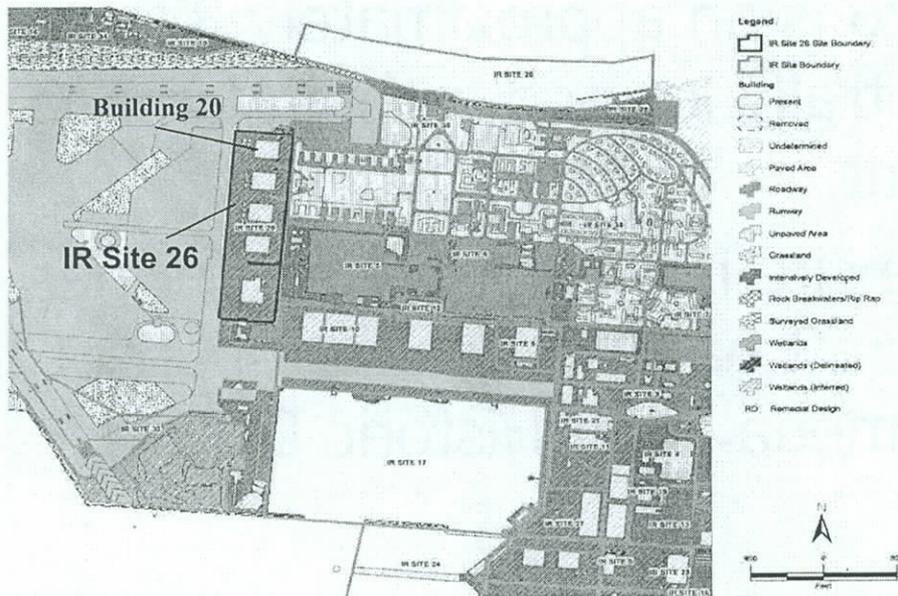
**BRAC**  
PMO WEST

- The area of interest for the Data Gap Sampling Investigation is southeast of the Former Aircraft Hangar Building 20.



# Location of IR26 and Building 20

**BRAC**  
PMO WEST





## IR26 Background (continued)

**BRAC**  
PMO WEST

- Previous investigations identified a shallow groundwater plume southeast of Building 20 impacted with volatile organic compounds (VOCs), primarily:
  - TCE
  - cis-1,2-DCE
  - vinyl chloride

5



## IR26 Background (continued)

**BRAC**  
PMO WEST

- Based on the RI/FS findings, a 2006 Final Record of Decision (ROD) identifies the following selected remedies:
  - No action for soil
  - Remedial action for groundwater by in-situ chemical oxidation (ISCO) followed by in-situ bioremediation treatment (ISB).

6





## IR26 Data Gap Objectives

**BRAC**  
PMO WEST

- The Data Gap Investigation was conducted to:
  - Determine whether the plume extended beneath Building 20, and
  - Further evaluate the lithology and depth of contamination within the ROD established plume boundaries.

9



## IR26 Data Gap Field Activities

**BRAC**  
PMO WEST

- 4 direct-pushed borings were drilled to approximately 21 feet with 1 additional boring to 101.5 feet below ground surface (bgs).
- Collected multiple discrete-depth grab groundwater samples for VOC analyses from the borings.

10



## IR26 Data Gap Field Activities

**BRAC**  
PMO WEST

- Installed seven 4-inch diameter groundwater monitoring wells to an approximate depth of 15 feet bgs.
- Collected groundwater samples for VOC and dissolved metal analyses.

11



## IR26 Data Gap Activities (con't)

**BRAC**  
PMO WEST

Aquifer Testing was conducted to:

- establish a radius of influence (ROI) for the aquifer and,
- provide site-specific hydraulic conductivity and effective porosity data which would be used to support development of the Remedial Design.

12



## IR26 Data Gap Activities (con't)

**BRAC**  
PMO WEST

### Aquifer Testing included:

- Installation of three 2-inch diameter piezometers,
- Conducting a Step Test and,
- A 24-hour pump and recovery test using 26MW-03 as the pumping well for both tests.

13



## Data Gap Investigation Results

**BRAC**  
PMO WEST

- Confirmed that the groundwater plume boundaries in the Final ROD are representative of current site conditions

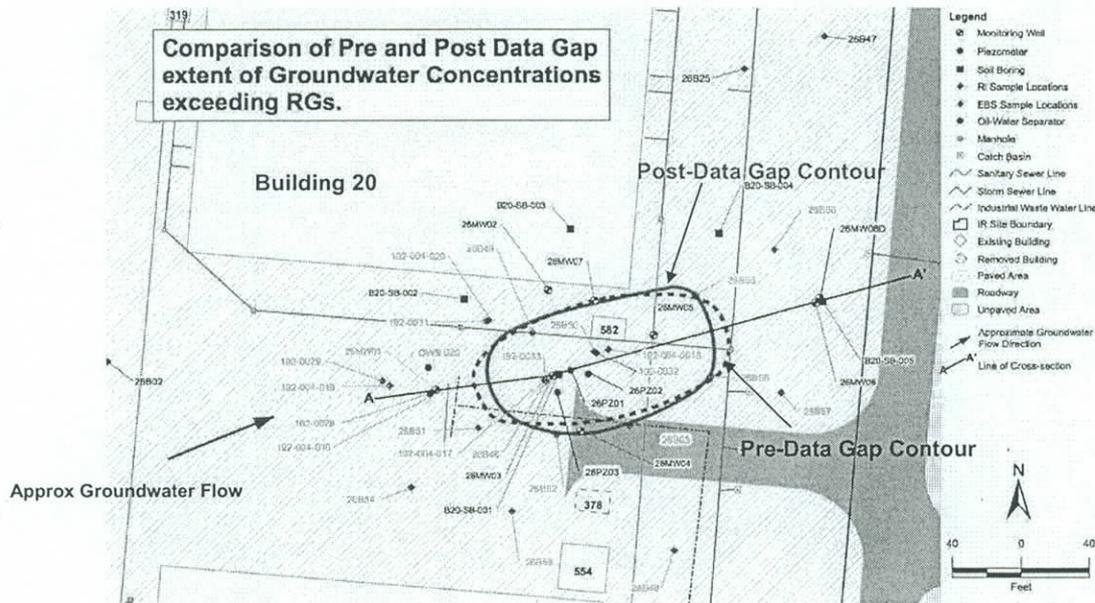
14





## Data Gap Results (continued)

**BRAC**  
PMO WEST



17



## Data Gap Results (continued)

**BRAC**  
PMO WEST

Evaluation of both previous and current geologic logs provided more detailed understanding of the site lithology:

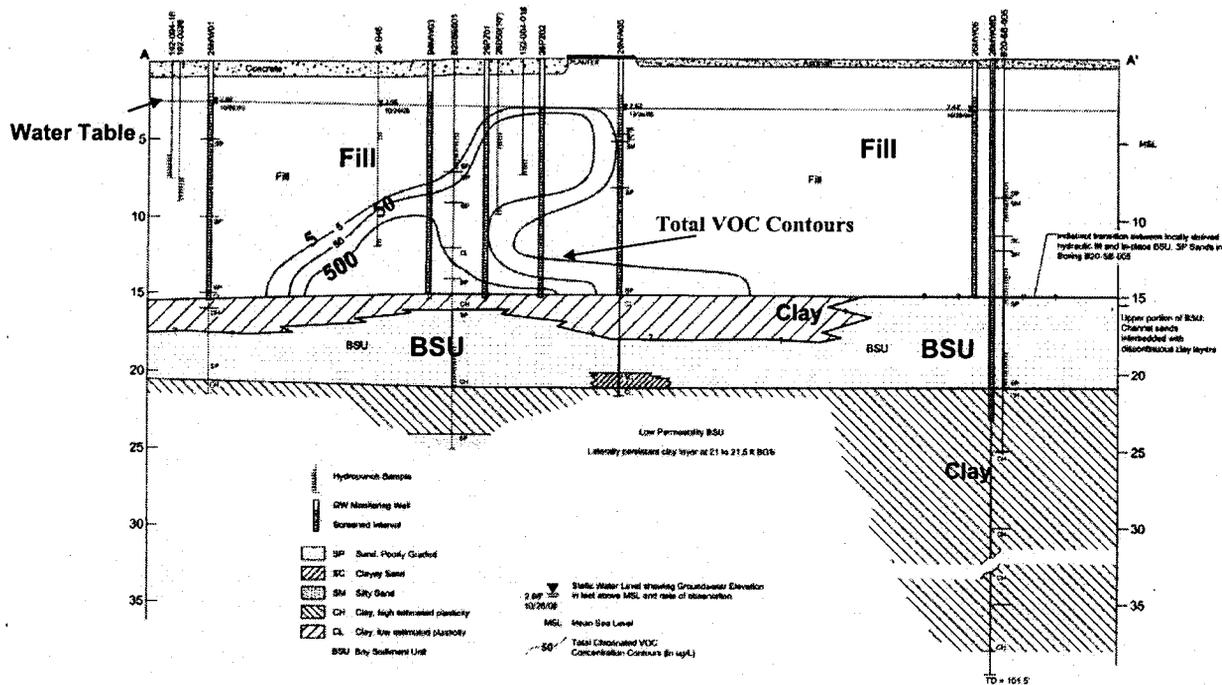
- Fill materials overly the native BSU (which exists from 15 to 15.5 bgs).
- A laterally persistent clay layer was encountered at 21 feet bgs. At one location this clay layer persisted from 21 to 101.5 feet bgs.

18



## IR26 Cross-section A - A'

**BRAC**  
PMO WEST



19



## Data Gap Results (continued)

**BRAC**  
PMO WEST

The aquifer tests concluded that:

- The optimal sustainable pumping rate for the aquifer is 2 gallons per minute with an ROI of 110 feet after 100 minutes of pumping.
- Hydraulic conductivities ranged from 0.023 to 0.09 feet per minute.
- The effective porosity (specific yield) ranged from 0.07 to 0.37.

20



## Conclusions

**BRAC**  
PMO WEST

### The Data Gap Investigation:

- Confirms that Final ROD's groundwater plume boundaries are consistent with current site conditions.
- Concentrations exceeding RGs do not extend beneath Building 20.

21



## Conclusions

**BRAC**  
PMO WEST

- Groundwater sample results indicated that VOCs are restricted to fill materials overlying the native BSU.
- Data Gap results will be used to support development of the Remedial Design.

22



# IR26 Data Gap Investigation

**BRAC**  
PMO WEST

## Questions?

**ATTACHMENT B-3**  
**TCRA AT IR SITES 1, 2, AND 32**  
**(Nine Pages)**



**Welcome**

**BRAC  
PMO**

**UPDATE**

**Time-Critical Removal Action (TCRA)**

**IR Site 1, 2, & 32**

**Alameda Point, Alameda**

**October 5, 2006**

*Andrew L. Baughman, P.E.*



**Overview**

**BRAC  
PMO**

- **Background and Location**
- **CERCLA Process**
- **Time-Critical Removal Action (TCRA)**
- **Planned Activities**
- **Schedule**
- **Summary**



## Site Locations and Backgrounds

BRAC  
PMO

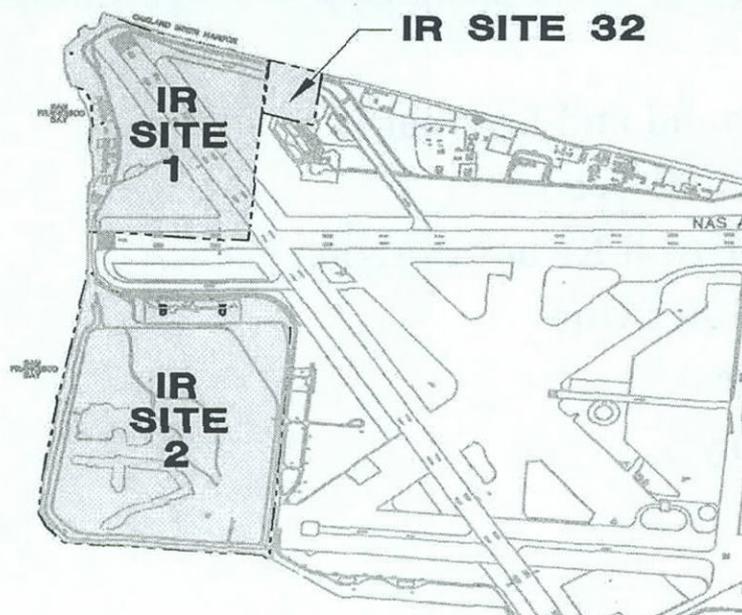
- **Installation Restoration (IR) Site 1 (78 Acres)**
  - Located in NW corner of Alameda Point
  - 1943-1956 Disposal Area
- **IR Site 32 (5.8 Acres)**
  - Located in NW corner of Alameda Point
  - Equipment, vehicle, and aircraft storage
  - 2 Buildings (594 and 82)
- **IR Site 2 (110 Acres)**
  - Located in SW corner of Alameda Point
  - Main disposal area from 1956-1978

2



## IR Site 1, 2, & 32

BRAC  
PMO



3



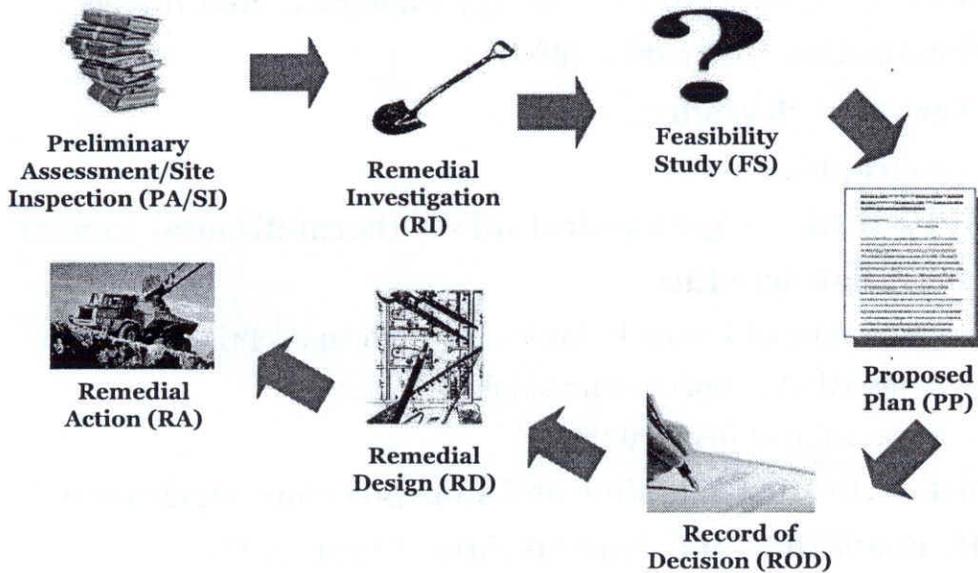
# Aerial Photograph

BRAC  
PMO



# CERCLA PROCESS

BRAC  
PMO





## Time-Critical Removal Action (TCRA)

BRAC  
PMO

- **Supported by the RAB (February 2006)**
- **Removal of Former Pistol Range Berm**
  - Material potentially presenting an explosive hazard (MPPEH)
  - Following S4-3 from IR Site 1 FS
  - Complete removal of berm, screening, and off-site disposal
- **Remove Surface and Subsurface Radium 226**
  - Following Alternative S6-4 from IR Site 1 FS
    - All radiological anomalies outside main disposal area (1A)
  - Supposed “Disposal Trench” (Based on IAS Report for location)
  - All radiological anomalies from survey will be removed under this TCRA

6



## PLANNED ACTIVITIES

BRAC  
PMO

- **Environmental resources survey/biological monitoring**
- **Mobilization (February 2007)**
- **Vegetation clearance**
- **Topographic survey**
- **MPPEH survey/geophysical survey (berm/disposal trench)**
- **Excavation activities**
  - Excavation of former Firing-range Berm and debris pits
  - Removal of radioactive material
  - Excavation of disposal trench
- **Post-excavation sampling and stockpile characterization**
- **Site restoration and demobilization (June 2007)**

7



## Firing Range

**BRAC  
PMO**



8



## Former Firing-Range Berm Removal

**BRAC  
PMO**

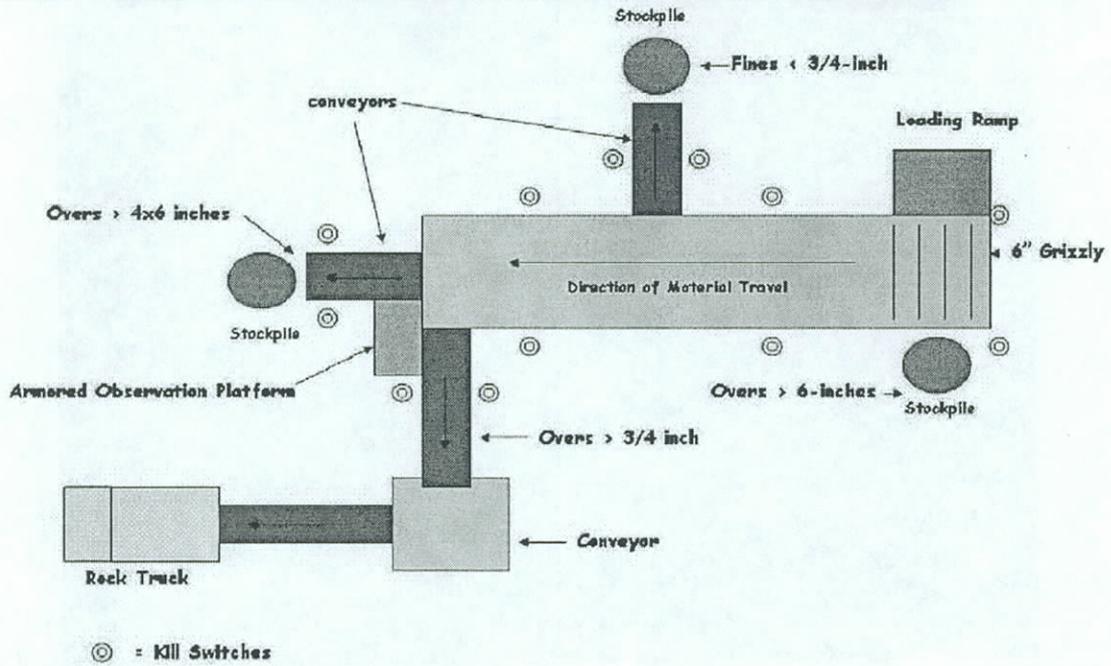
- **2-Step, 100% MPPEH screening process**
  - transferred to screening pads and laid out in a 6-inch layer for a MPPEH and radiological survey
  - Processing the excavated soil using an on-site Trommel-type screening plant to separate into stockpiles of various sizes
- **All stockpiles will be disposed off site pending chemical and radiological characterization**
- **Approximately 5,100 cubic yards of material anticipated**

9



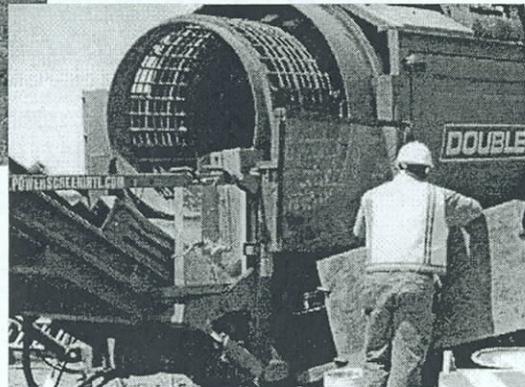
# Screening Plant Configuration

BRAC  
PMO



# Typical Screen Plant

BRAC  
PMO





## **Removal of Radioactive Material Small Areas**

**BRAC  
PMO**

- **Excavate elevated readings found during characterization survey**
- **Soil removal will continue until the source is removed**
- **Following source removal an additional 12 inches of soil will be removed in all directions, or until removal action objectives are met**
- **The excavation will undergo screening and sampling to confirm removal**
- **Replace with clean imported backfill**
- **All soil disposed of off site by a RASO approved radiological waste broker**
- **Approx. 250 cubic yards of soil estimated for removal**

12



## **Disposal Trench**

**BRAC  
PMO**

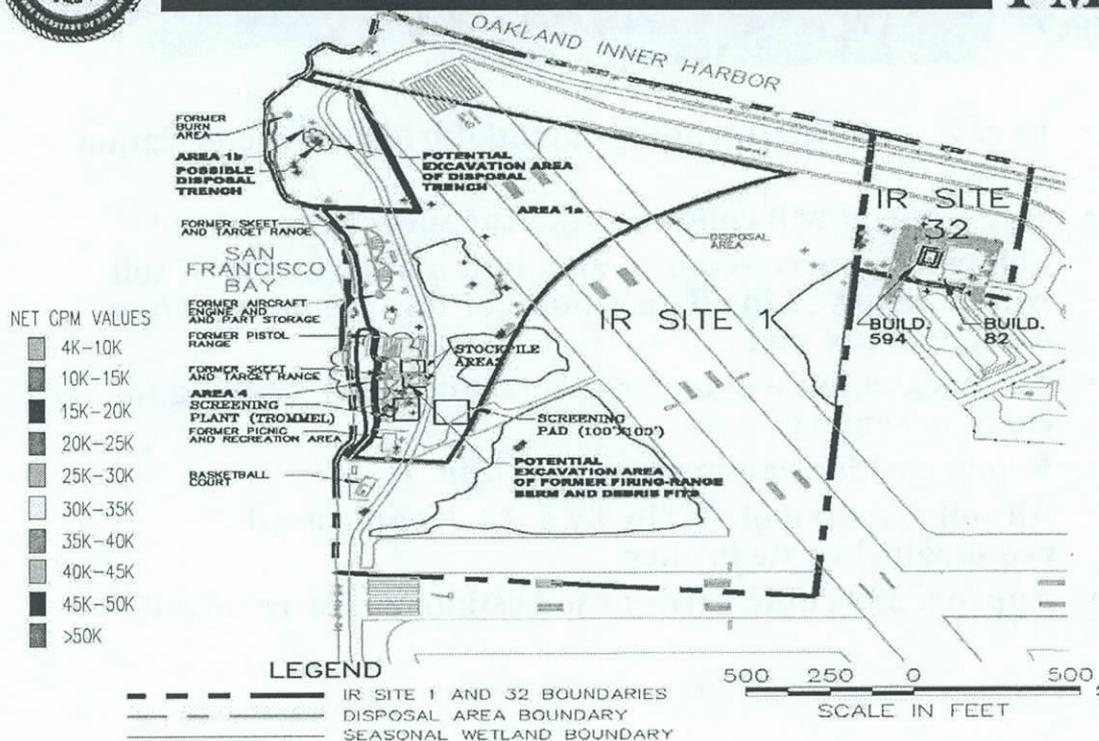
- **Set the boundary of excavation**
- **Radiological and MPPEH found in the 1<sup>st</sup> 6 inches of soil will be hand extracted and removed**
- **Excavator will remove the remainder of soil in 1<sup>st</sup> 6 inches.**
- **The 2nd 6 inches will then be scanned.**
- **Continue this process until debris is removed or ground water is reached**
- **Replace with clean imported backfill**
- **Approx. 320 cubic yards of loose soil is anticipated**

13



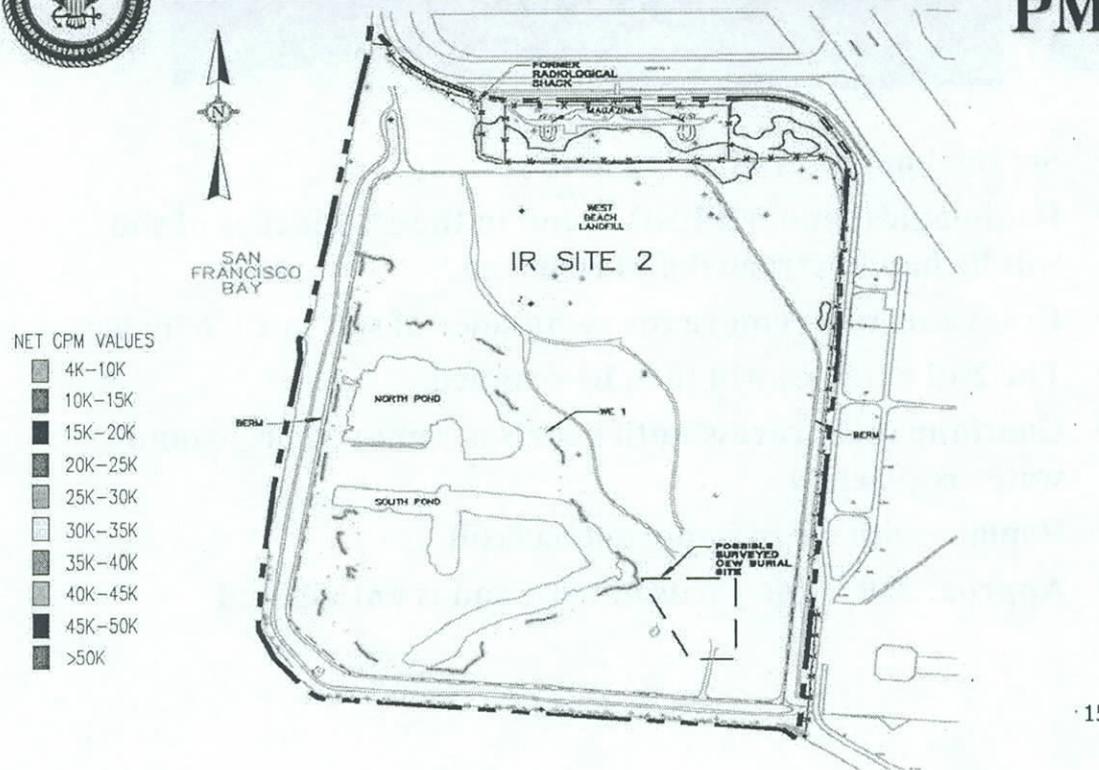
# IR Site 1 and 32 Radiological Survey

**BRAC  
PMO**



# IR Site 2 Radiological Survey

**BRAC  
PMO**





## Schedule

**BRAC  
PMO**

- **Action Memorandum submitted on 1/31/2007**
- **Final TCRA Work Plan scheduled 3/2/2007**
- **Mobilization – February 2007**
- **Start Removal Action– March 2007**
- **Finish Excavation and Demobilization – May 2007**

16



## Questions?

**BRAC  
PMO**



17

# SulTech

A Joint Venture of Sullivan Consulting Group and Tetra Tech EM Inc.

## TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. **N68711-03-D-5104**

Document Control No. TC . B130. 12403

TO: Contracting Officer  
Karen Rooney, Code 02RE  
Naval Facilities Engineering Command  
Southwest Division  
1230 Columbia Street, Suite 870  
San Diego, CA 92101-8517

DATE: 04/10/07  
CTO: 0130  
LOCATION: Alameda Point, Alameda, California

FROM:



**Steven Bradley, Contract Manager**

DOCUMENT TITLE AND DATE:

**Final March 1, 2007, Restoration Advisory Board Monthly Meeting Summary**

TYPE:  Contractual Deliverable  Technical Deliverable (DS)  Other (TC)

VERSION: Final REVISION #: NA  
(e.g., Draft, Draft Final, Final)

ADMIN RECORD: Yes  No  CATEGORY: Confidential

SCHEDULED DELIVERY DATE: 04/25/07 ACTUAL DELIVERY DATE: 04/25/07

NUMBER OF COPIES SUBMITTED TO NAVY: 0/5C/4E  
O = original transmittal form  
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<u>J. Howell-Payne (BPMOW.JH)</u>	<u>Craig Hunter</u>	
<u>1C + letter only</u>	<u>1C/1E</u>	
<u>Nars Ancog (03EN.NA)</u>	<u>Lona Pearson</u>	
<u>1C + letter only</u>	<u>1C/1E</u>	
<u>Diane Silva *(EVR.DS)</u>	<u>Alona Davis</u>	
<u>3C/3E</u>	<u>1C/1E</u>	

**Date/Time Received**

April 24, 2007

Thomas Macchiarella  
BRAC Environmental Coordinator  
BRAC Program Management Office-West  
1455 Frazee Road, Suite 900  
San Diego, California 92108

**Subject: Final RAB Monthly Meeting Summary Report  
Alameda Point, Alameda, California  
Contract Number N68711-03-D-5104, Delivery Order 130**

Mr. Macchiarella,

Please find enclosed the Restoration Advisory Board (RAB) final meeting summary report for the month of March 2007. As requested, your copy of the report has been submitted on compact disc.

The final RAB meeting summary reports for April through December 2007 will be submitted as they become available.

If you have any questions, please call me at (916) 853-4557.

Sincerely,



Lona Pearson  
Project Administrator

cc: Diane Silva (3 copies)  
Joyce Howell-Payne  
Nars Ancog  
Craig Hunter  
Alona Davis  
File

March – TC.B130.12403