

FINAL
NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD
MEETING SUMMARY

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

September 04, 2008

The following participants attended the meeting:

Co-Chairs:

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

Attendees:

Cameron Crockett	Aerotec
Tommie Jean Damrel	Tetra Tech EM Inc. (Tetra Tech)
Doug DeLong	BRAC PMO West, Compliance Manager
Murray Einarson	AMEC/Geomatrix
Peter Guerra	AMEC/Geomatrix
Fred Hoffman	RAB
Chuck Holman	Antha
John Kaiser	San Francisco Regional Water Quality Control Board (Water Board)
Joan Konrad	RAB
John Kowalczyk	BRAC PMO West
James Leach	RAB
Gretchen Lipow	Community member
Jeremy Markham	Aerotec
John McMillan	Shaw Inc.
Lona Pearson	Tetra Tech
Dennis Robinson	PSEC

Derek Robinson	BRAC PMO West, Remedial Project Manager (RPM)
Peter Russell	Russell Resources/Alameda Reuse and Redevelopment Authority (ARRA)
Brant Smith	Xpert Design and Diagnostics (XDD), LLC
Dale Smith	RAB
Radhika Sreenivasan	St. George Chadux Corp.
Jim Sweeney	RAB
Jean Sweeney	RAB
Michael John Torrey	RAB
Xuan-Mai Tran	U.S. Environmental Protection Agency (EPA)
Philip Triguzio	Community member
John West	Water Board

The meeting agenda is provided in Attachment A.

MEETING SUMMARY

I. Approval of Previous RAB Meeting Minutes

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

Mr. Humphreys provided the following comments:

- Page 3 of 15, third paragraph, third sentence: “Alternative A was combined with Measure A” will be changed to “Alternative A was compliant with Measure A.”
- Page 3 of 15, third paragraph, fourth sentence: “Alternative B included 4,000 residences” will be changed to “Alternative B included 4,000 residences. Mr. Biggs said he thought there were 7,000 residences.”
- Page 3 of 15, third paragraph, seventh sentence: “...power generation plant east of a planned recreation complex.” Will be changed to “...power generation plant east of Sites 1 and 32 and west of a planned recreation complex.”
- Page 4 of 15, first sentence: “Mr. Humphreys said that he has provided the RAB” will be revised to “Mr. Humphreys provided the RAB.”
- Page 5 of 15, third paragraph, second sentence: “...hydrogen peroxide and ferric iron that produce hydroxyl” will be revised to “hydrogen peroxide and ferrous iron that produces hydroxyl.”

- Page 7 of 15, first paragraph, last sentence: "...Rosansky replied + 15 feet" will be revised to "...Rosansky replied 15 feet."
- Page 7 of 15, fourth paragraph, last sentence: "...is thick and slow like honey" will be revised to "...is thick and flows slowly like honey."
- Page 10 of 15, third paragraph, first sentence: "...of the high school in OU-2A." Will be revised to "...of Encinal High School into OU-2A."
- Page 10 of 15, middle of third paragraph: "...large piece of land" will be revised to "...larger piece of land."
- Page 11 of 15, last paragraph, after the second sentence, the following statement will be added: "He suggested it may be possible to create new wetlands at Site 2."
- Page 12 of 15, first paragraph, third sentence: "...dewatering of Seaplane Lagoon" will be revised to "...dewatering of dredged material from Seaplane Lagoon."
- Page 12 of 15, third paragraph, first sentence: "The Final ROD for OU-5 will be completed" will be revised to "the Final ROD for OU-5 was completed."
- Page 13 of 15, fourth paragraph, after the third sentence, the following statements will be added: "In response to Mr. Humphreys' summarization of his two papers, Mr. Brooks said that because he is a geologist he would not have said that there would not be liquefaction at Site 1. He is well aware that there is a potential for liquefaction in poorly consolidated soils during earthquakes in the Bay Area. Mr. Brooks also said the estimated displacements of 20 feet laterally and 1.5 feet vertically is based on engineering calculations in the seismic stability study. Mr. Brooks said he has not reviewed the report. Mr. Humphreys pointed out that, from the historical aerial photograph, there appears to be another possible waste disposal area south of the cells depicted in Figure 1-1 of the trenching study. He reported that a former Navy fighter pilot said they took their plane onto downward sloping ramps and test fired their 20-mm cannons into a below-grade pit."

Ms. Smith provided the following comment:

- Page 14 of 15, first paragraph, third sentence: "Ms. Smith agreed and said she is a member of the Treasure Island technical sub-committee" will be revised to "Ms. Smith confirmed there was a Treasure Island technical sub-committee and she was a member."

Mrs. Sweeney provided the following comment:

- Page 15 of 15, second paragraph, second sentence: "...were cut up during the site tour." Will be revised to "...were cut up."

Mr. Hoffman provided the following comment:

- Page 15 of 15, last paragraph, after the third sentence, insert the following statement: “Mr. Brooks agreed that hydraulic control is an important element in groundwater treatment.”

The minutes were approved as modified.

II. Co-Chair Announcements

Mr. Humphreys distributed his list of reports and correspondences received during August 2008 (Attachment B-1). Mr. Humphreys noted that document Item 8, “*Draft Final Remedial Design/Remedial Action Work Plan for Operable Unit 5/IR-02*,” involves the groundwater plume beneath Coast Guard housing, Alameda Landing development, and Bay Port development. Mr. Humphreys said that in September 2007 the Navy installed a pilot-scale testing system in Kollman Circle and is now planning the full-scale treatment system. He said the Navy has collected water and soil gas samples to prepare the remedial design. Mr. Humphreys said that he and Mr. Hoffman have a copy of the report if the RAB would like to review it. Mr. Brooks added that a copy of the report is also available in the Alameda RAB Library in Room 201. Mr. Hoffman requested a RAB presentation on the report, and Mr. Brooks agreed.

Mr. Humphreys distributed a RAB member contact list to the RAB members for review. Corrections should be submitted to Ms. Damrel, who will provide a final updated contact list at the October RAB meeting. The RAB briefly discussed the RAB membership rules and meeting attendance. Mr. Hoffman requested that each Navy RPM list their sites or areas of responsibility on the contact list, and Mr. Brooks agreed.

Mrs. Smith asked where petroleum site Area of Concern (AOC) 23G was located, noting that AOC 23G is not listed on the general base map. Mr. West responded that AOC 23G is located north of the runway, near the skateboard park.

Mr. Humphreys pointed out an *Alameda Journal* article published August 26, 2008, titled, “Navy Awards 20 Million for Base Cleanups.” He said the award went to a company called AMEC/Geomatrix and believes that this article pertains to Site 1. Mr. Brooks acknowledged that the article pertains to Site 1, which will be discussed later during this meeting. Mr. Humphreys questioned why the Navy would award a contract for cleanup of Site 1 before the Record of Decision (ROD) is finalized. Mr. Robinson responded that the ROD will soon be final and the cleanup will take years (through 2012) to complete. He said that the Navy is developing planning documents now; however, the ROD will be finalized by the time actions begin. Mr. Brooks added that the draft ROD was submitted in April 2007 and can be found in the information repository. The draft final ROD will contain a few changes from the draft ROD based on the results of the trenching report and subsequent time-critical removal action (TCRA); however, the ROD will be finalized.

Mr. Humphreys said that during the August RAB meeting Mr. Hoffman questioned the lack of sampling of the monitoring wells at Site 26 around in situ chemical oxidation (ISCO) injection points to determine whether contaminants were being displaced. He added that Mr. Brooks was

to check with the Navy contracting staff about whether additional sampling was possible. Mr. Brooks said that after consulting with the Navy contract staff and the contractors, it was decided that the field measurements already being collected would suffice. He said the Navy contractor will collect samples and field measurements of the major groundwater parameters discussed in August 2008, which will act as a proxy to understand subsurface conditions. He said that sample results will be provided to the RAB as soon as they are available.

Mr. Hoffman clarified that his original comment was “*in a complex geological environment with essentially a new approach to injection, extraction and in situ cleanup, it is important to monitor before, during and after the cleanup.*” He said that his concern was that the injection had started without sufficient monitoring to understand what occurred during injection. Mr. Brooks responded that the Navy identified initial conditions by collecting baseline groundwater samples. The baseline conditions will be compared to the results from each round of sampling. Mr. Brooks added that the Navy discussed the usefulness of collecting additional samples, and the contractor responded that extra sampling was not necessary.

Mr. Hoffman requested another presentation highlighting the sampling results because other Alameda sites are undergoing in situ work and the issue of hydraulic control and how the reagents contact the contaminant would be pertinent to the other sites. He added that the approach may be successful, but it must be proved with monitoring. Mr. Brooks suggested that he would bring the data and provide a small presentation during an upcoming RAB meeting.

Mr. Brooks announced the following activity highlights;

- The Site 17 debris pile removal kick-off meeting was held September 4, 2008.
- Work is continuing on the storm drain removal inside Building 5.
- The Corrective Action Area (CAA) 3 groundwater treatment system has been expanded. This treatment system removes petroleum hydrocarbons from groundwater and above the water table.
- The Navy is preparing for Phase 3 of the six-phase heating treatment at Building 5 (Site 5). Work will begin after the storm drain removal in Building 5 is completed.
- The Navy is in the contractor selection phase for: Site 17 Seaplane Lagoon dredging; Operable Unit (OU)-1 remedial action, which includes excavation and chemical oxidation; and the OU-2B Feasibility Study (FS).

Mr. Brooks distributed a 2-page response to questions letter, responding to Mr. Humphreys' comments presented during the August RAB meeting (Attachment B-2). Mr. Brooks said that he is still working on question 5 and noted that he will need to review more reports to give a complete answer, but he should be able to provide an answer at the next RAB meeting.

III. Site 1 Proposed Remedial Design and Remedial Action

Mr. Brooks introduced Mr. Derek Robinson, the Site 1 RPM, to begin the presentation (Attachment B-3).

Mr. Robinson said that AMEC was awarded the Site 1 remedial action contract and introduced Mr. Peter Guerra and Mr. Murray Einarson from AMEC. He said that the contract award is approximately \$14 million with options to increase, depending on the size of the project area after the remedial design is completed. He said the contract could increase to \$20 million. Mr. Robinson said that AMEC is developing the technical approach and asked the RAB members to provide input.

Mr. Robinson explained that the map of Site 1 (Slide 7) was taken from the FS and Proposed Plan (PP) reports for the site. He said that Area 3a, Area 3b, and a portion of the runway will be removed from the Site 1 ROD and included with Site 32. He noted this change in the site boundary was in response to conditions that were discovered during the TCRA. He said that the radiological anomalies found during the TCRA were larger than was expected.

Mrs. Sweeney asked Mr. Robinson to explain the areas of Site 1. Mr. Robinson said Areas 2a and 2b are runways, Areas 5a and 5b are beaches, Area 4 is the firing range, Area 1a is the approximate location of waste cells, and Area 1b is the burn area. Areas 3a and 3b were removed from Site 1 and added to Site 32.

Mrs. Sweeney asked if Area 1a included the groundwater contaminant plume, and Mr. Robinson affirmed her statement was correct. Mr. Robinson said that the outline of Area 1a is slightly larger than in the old site photographs. Mr. Humphreys asked if the depression south of the firing range area at Area 1a was another waste cell. Mr. Robinson said that nothing has been excavated but it was a high radiation area. Mr. Robinson said this depression was found during the TCRA; however, he has never seen the pit. Mr. Robinson said that the total area of the landfill will be defined as a part of the Site 1 remedial design work.

Mr. Hoffman asked whether part of the waste cell extension, as shown on the map (Slide 4), would extend to Site 32. Mr. Robinson replied that if the waste cell area was extended it would be found as a part of the perimeter trenching planned by AMEC to find the lateral extent of the waste areas before remedial field work begins. The results of the trenching will be included in the remedial design. Mr. Humphreys asked Mr. Guerra about the number of trenches planned. Mr. Guerra said 17 trenches are planned on the outside areas. Mrs. Sweeney said that a map should display the location of the trenches. Mr. Robinson said that the exact location of the trenches is not yet determined, but it will be discussed in the remedial design. Mrs. Sweeney said that the RAB was promised a map with the locations of the trenches completed, but has not received one. Mr. Robinson said that a map showing the trenches was included in the trenching report. Mrs. Sweeney said that the trenching report did not define the directions of the trenches. Mr. Robinson replied that the text in the trenching report with the existing report figures discusses in detail the direction of the trenches. Mr. Robinson offered to translate the report's text detail onto a figure for Mrs. Sweeney. Mr. Humphreys asked about the placement of the 17

trenches. Mr. Robinson replied that the 17 trenches would be located to delineate the waste cells and will also be along the outside (perimeter) of Area 1a.

Mr. Humphreys said that a part of the TCRA was the removal of polycyclic aromatic hydrocarbons (PAH)-contaminated soil in the burn area. Mr. Robinson responded that the TCRA was only for radioactivity and to remove radioactive anomalies. He said that the initial site model for Site 1 was based on waste transportation (old dials and plane parts) to the landfill and waste potentially falling from the trucks. The plan was to scan the area and detect any surface anomalies. He said that findings of the TCRA indicated that the anomalies were more numerous and in a wider area than expected. The TCRA findings led to the change in the site model and the removal of Areas 3a and 3b from Site 1. Mr. Humphreys said that the letter from the Navy to the regulators stated “deeper than expected” rather than “surface,” so the Navy must have explored at depth. Mr. Robinson said that the maximum depth explored was 2 feet. Mr. Humphreys commented that items such as radium-contaminated rags and paint brushes would have disintegrated and left particulate matter in a form that no longer can be seen as residue. Mr. Robinson acknowledged his statement.

Mr. Robinson explained the formation of the burn area (Slide 11), was caused by burning trash and then spreading the burn residue towards the bay, which over time increased the land mass. Mr. Torrey asked about the kind of trash that was burned. Mr. Robinson said he would need to find out.

The remedial plan for Area 1b (burn area) is excavation, characterization of waste for proper disposal, and backfilling per the seismic design. During implementation (Slide 13), an in situ radiological (RAD) screening pad will be set up. Soil areas hot with RAD activity, identified by a drive-over scan, will be removed with an additional 1 foot of soil and transported to a secondary RAD screening. RAD items would be taken to the intermodal radioactive bin and RAD disposal area. Mr. Hoffman asked if anything other than RAD would be screened, and Mr. Robinson said that other chemical constituents will be evaluated. Mr. Hoffman asked if excavation would continue to the depth of the water table and whether water samples would be collected. Mr. Robinson said that the current proposed plan includes excavation to the water table, which is 3 to 7 feet below ground surface (bgs) at Site 1, but water samples would not be collected. Mr. Hoffman commented that it would be a good opportunity to collect water samples because the area is downgradient of the waste cells.

Mrs. Konrad asked what will be done with the excavated soil. Mr. Robinson said that the excavated soil will be characterized and, if hazardous, disposed of properly. If the soil is not hazardous (according to the current plan), the soil will be used for the initial grading at Area 1a, and eventually located under the 4-foot soil cover. Mrs. Konrad said that SunCal suggested developing a wetland in that area instead of a golf course. She noted concerns that work might be done that is not needed, depending on the plan. Mr. Brooks said that SunCal’s plans are in the conceptual stage and SunCal will need to coordinate with the Navy and regulators before any development occurs at the site. He said the first meeting with SunCal is planned for September 23, 2008. Mrs. Sweeney said that a wetland area would be appropriate near 1a landfill area, and the Navy should plan for it.

Mr. Hoffman asked about the orientation of the photograph shown on Slide 14. Mr. Robinson said that north is to the left. Mr. Robinson explained that the beaches (Areas 5a and 5b) are exposed during the low tide. The soils at the beach are being evaluated for future potential human receptors, and 60 shallow soil borings are planned to characterize the area and identify soil that needs to be removed. Mrs. Sweeney asked about the primary contamination near the beach, and Mr. Robinson said that it would be volatile organic compounds (VOCs). Mr. Humphreys asked if RAD contaminants are next to the beach. Mr. Robinson said that RAD contamination is not expected in the beach areas, but AMEC will screen for RAD during soil sampling and excavation. Mr. Humphreys said that there could also be a potential for lead shot or finely divided lead contamination at the beach. Mr. Robinson said lead contamination will be sampled for.

Mr. Humphreys asked if there was any RAD analysis of groundwater, and if so, about the results. Mr. Brooks said that he would share the results with him in the next month. Mr. Humphreys requested the Navy evaluate the beach to the south as well. Mr. Humphreys asked what would be done with the half-sunken barges near the beaches. Mr. Robinson said that this area is not in the scope of Site 1.

Mr. Robinson explained planning for Area 1a (Slide 17). Mr. Humphreys noted from Slide 17 that there will be no geofabric under the waste isolation cover (WIC), which Mr. Robinson confirmed. Mr. Humphreys said that recently the Navy had stated that there would be both a rodent barrier and a high density polyethylene (HDPE) membrane under the soil cover. Mr. Robinson said that the Navy selected AMEC for the project because AMEC's proposal included highly qualified seismic staff with extensive experience in the bay area. He said John Eagan from AMEC/Geomatrix has a design plan to deal with the potential seismic problems using his experience from Hunter's Point Shipyard and Treasure Island. Mr. Robinson said that along with excellent seismic design personnel, AMEC is also utilizing highly qualified groundwater experts with direct experience at Site 1, noting that Mr. Einarson did a study of Site 1 groundwater contamination in 1995 to 1998 and has a historical understanding of the Site 1 groundwater plume.

Mr. Humphreys asked the definition of WIC (Slide 18). Mr. Robinson said WIC is a waste isolation cover, or soil cover. Mr. Robinson said that soil gas samples will be collected to determine if methane was being produced. Mr. Humphreys said that the soil gas sampling should also include vinyl chloride.

Mr. Robinson explained the overall construction progression for Area 1a (Slide 20). The Navy will start work with Area 1b excavation, and then address the beaches because both of those have potential for producing soil that can be used to fill in low spots for initial grading at Area 1a. For the shoreline, which is a seismic concern area, 4 feet of soil will be excavated 200 feet away from the shoreline. This area will then be backfilled and compacted to stabilize the shoreline. Ms. Smith asked if rip-rap will be added. Mr. Guerra replied that the existing rip-rap will be used. Mr. Robinson added that excavating to 4 feet may remove the soil that contributes to the plume. Mr. Hoffman suggested that the plume could be removed by excavating to the bottom of the waste. Mr. Robinson said that this option will be discussed with the contractors.

Mr. Leach said that some of the previous diagrams show that the landfill was below the sea level, so water intrusion must not have been a concern during original excavation. Mr. Guerra said that the material that was placed in the disposal pits was not adapted to the engineering requirements, and the problem is trying to build under water to engineering standards.

Mr. Robinson said that the WIC will cover all of Area 1a and that one of the methods to keep the soil cover in place is by curbing. Mr. Guerra added that the curbs would be 12-inch concrete curbs and will be installed where the soil cover contacts the runway. Mr. Sweeney asked about the composition of the soil cover, and Mr. Robinson said that it was not yet determined. Mr. Guerra said that low-permeable soil is not required and could cause sand boils. Soil material should be close to existing materials.

Mr. Humphreys said that the paved area of the runway would have low permeability. Mr. Robinson stated that the Navy does not expect sand boils to appear through the 18-inch concrete. Mr. Guerra explained that the sand boils would be worse where the water table is close to the ground surface. The design of the runway is crowned and will shed seismic pressure laterally. The runway is expected to be more stable compared with the rest of the site, but its stability will be analyzed through the design process. Mrs. Sweeney said that, according to the map, the runway will be covered by the soil cover. Mr. Robinson clarified that only a part of the runway will be covered with soil and the area outside the soil cover will be tack coated and maintained. Mr. Guerra explained that the tack coat is a resin plus coke powder spread over the top of the runway to create a semi-permeable layer. Mr. Robinson said that the intent is to maintain the pavement and isolate the potentially contaminated soil underneath it.

Mr. Robinson said that AMEC's contract includes a RAD scan after construction of the WIC as well as delineation of the lateral extent of Site 32 RAD contamination. Mr. Humphreys said that the results of two RAD surveys conducted in 2004 and 2006 indicated that most anomalies were located in Area 1. Mr. Brooks noted that the Navy had reviewed the most recent RAD surveys and the Site 32 anomalies were not seen before.

Mr. Robinson said that there is an expected loss of 2 acres of low-quality seasonal wetlands in Site 1. He said that the current function of the wetland will be evaluated and the Navy will coordinate with the U.S. Fish and Wildlife Service to mitigate the wetlands loss. Mrs. Smith asked about the flora investigations. Mr. Robinson said that he did not have specific information pertaining to flora investigations. Mrs. Smith added that there are also vertebrate issues and investigations for reptiles and other mammals (ground squirrel and migratory birds) should be completed. Mr. Robinson said the current plan includes a 1 to 1 replacement ratio for wetland losses. The proposed ratio appears appropriate as the Navy will be replacing a low-quality seasonal wetland with a high-quality tidal wetland. The vegetative layer would be 6 inches thick on top of the 4 feet of cover, which includes 1-foot animal intrusion prevention layer constructed of compacted angular rocks. Mr. Humphreys noted the need to extend the animal intrusion layer onto the slope at the shoreline.

Mr. Robinson asked Mr. Einarson to describe his study on groundwater at Site 1. Mr. Einarson said that the study was a 5-year research project funded by the Department of Defense (DoD) for

innovative technologies to treat mixed plumes, such as solvents and petroleum hydrocarbons, and Site 1 was chosen for the focus for this study. Mr. Einarson described the technology as a funnel and gate system using a treatment cell and reactive barrier. He noted the project included geotechnical work and plume definition using one-time groundwater samples. The knowledge gained from that project and information on the nature and extent of the contaminants of the area will be input into the model for the conceptual design.

Mr. Humphreys asked what chemical form the radium was in and Mr. Brooks said that he did not know. Mr. Humphreys said that one of his concerns was mobilizing metals such as radium by chemical oxidation processes using Fenton's reagent, which was mentioned in the Site 32 FS report. He suggested collecting soil samples and subjecting them to treatment to check whether radium mobilizes. He said that this information would be valuable. Mr. Robinson said that Mr. Einarson and his team will complete pilot testing and a detailed assessment of this plume before the remedial action phase of groundwater treatment.

Mr. Hoffman asked Mr. Einarson if he could describe the present plume. Mr. Einarson replied that he expects VOCs and, potentially, dense nonaqueous phase liquids (DNAPL) and is excited to use new technologies to characterize the plume. Mr. Robinson explained the VOC plume depicted in the slides (Slide 35 and 36) is based on results from AMEC's earlier study that the plume core is relatively small and shallow. He noted that the results, however, needed to be confirmed by resampling. Mr. Einarson said that the initial phase of direct-push sampling wells were installed along three different transects, west of the road, between the road and the rip-rap, and 1 year later a higher-resolution transect of multilevel wells was installed 20 feet upgradient of the reactive barrier. Mr. Hoffman asked if these wells were still available. Mr. Einarson replied that some of the wells remain and are accessible. Mr. Humphreys said that one of the earlier reports showed that the plume contained benzene and toluene. Mr. Einarson acknowledged that petroleum hydrocarbons were present in the area 10 years ago and the site was chosen for the original study because it was a mixed plume.

Mr. Robinson explained the general VOC plume design (Slide 39). Mrs. Sweeney stated that the wells would be injected after the soil cover was installed, and Mr. Robinson confirmed her statement. Mr. Humphreys said that there are some extraction wells at the edge of the bay about 30 to 40 feet from the shoreline. Mr. Robinson replied that plume migration will be considered and mitigated, if necessary.

Mr. Robinson discussed the schedule (Slide 41). Mrs. Smith asked whether the ROD would be completed before the construction begins or would some work be done using the Draft ROD. Mr. Robinson said that the Final ROD is expected to be complete before the remedial design.

IV. BCT Update

Mr. West provided the BCT update. He said at Term 1 (Breakwater Beach), an aboveground tank, near the Hornet, has been removed and confirmation samples have been collected. The samples were non-detect and a closure summary report will be submitted. The CAA 3 dual-vapor extraction system has been expanded and piping and orange fencing can be seen at the

Atlantic Street entrance to the base. CAA C near Building 510 and Site 26 is operating and removing approximately 1,000 pounds of jet fuel a day.

V. Community and RAB Comment Period

Mrs. Lipow commented that she attended the SunCal developer meeting and that she is concerned with its plans. She said that at the end of that meeting the developers talked about excavating about 2.8 million cubic yards of soil from the highly contaminated Northwest Territories that would be spread on Alameda Point and elevate the soil level in anticipation of the sea level rise. She said she wanted to bring this issue in front of the RAB members. Mr. Brooks said that the plan was to fill and raise the flood plain at Alameda Point. He added that a meeting among the developers, Navy, and regulators will be held on September 23, 2008, and that he would be able to provide more information on this issue after that meeting.

Mr. Philip Triguzio commented that he also attended the developer's meeting. He noted that the plans included constructing a wetland, which he believes is a waste of real estate and could be a health issue. Mr. Triguzio added that money spent on development should be for construction that adds value to the community, and not on a wetland.

Ms. Smith said that she has not received her copy of the Site 14 Remedial Action Plan. It is currently in the public comment period and she would like to review the document. Mr. Brooks noted she would receive a copy. Mr. Humphreys said that he received his copy by mail on September 2, 2008, but the document is dated August 25, 2008.

VI. Meeting Adjournment

The meeting was adjourned at 9:10 p.m.

ATTACHMENT A

**NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA**

September 4, 2008

(1 page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

SEPTEMBER 4, 2008, 6:30 PM

ALAMEDA POINT – BUILDING 1 – SUITE 140

COMMUNITY CONFERENCE ROOM

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

<u>TIME</u>	<u>SUBJECT</u>	<u>PRESENTER</u>
6:30 - 6:45	Approval of Minutes	Mr. George Humphreys
6:45 - 7:00	Co-Chair Announcements	Co-Chairs
7:00 – 8:00	Preliminary Discussion of Proposed Site 1 Remedial Action	Derek Robinson
8:00 – 8:15	BCT Update	John West
8:15 – 8:30	Community & RAB Comment Period	Community & RAB
8:30	RAB Meeting Adjournment	

ATTACHMENT B

NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD MEETING HANDOUT MATERIALS

- B-1 List of Reports and Correspondence Received During August 2008. Distributed by Mr. George Humphreys, RAB Community Co-Chair (2 pages)
- B-2 Response to questions from August 14, 2008, RAB meeting. Provided by Mr. Pat Brooks, Navy Co-Chair (2 pages)
- B-3 Site 1 Proposed Remedial Design and Remedial Action. Provided by Mr. Derek Robinson, Navy RPM (22 pages)

ATTACHMENT B-1

**LIST OF REPORTS AND CORRESPONDENCE RECEIVED
DURING AUGUST 2008**

(2 pages)

Restoration Advisory Board
Documents and Correspondence
Received during August 2008

Documents

1. July 31, 2008(received August 4, 2008), "Final, Remedial Design, IR Site 17, Seaplane Lagoon, Former Naval Air Station Alameda, Alameda Point, Alameda, California", prepared by SES-Tech for BRAC Program Management Office West.
2. August 6, 2008, "Draft Final, Action Memorandum, Time-Critical Removal Action, Installation Restoration Site 17, Construction Debris Piles, Alameda Point, Alameda, California, BRAC Program Management Office West.
3. August 6, 2008 (received August 7, 2008), "Draft Final, Work Plan, Time-Critical Removal Action, Installation Restoration Site 17, Construction Debris Piles", prepared by Weston Solutions, Inc., for BRAC Program Management Office West.
4. August 13, 2008(received August 18, 2008), "Final, Petroleum Corrective Action Summary Report, JP-5 Hydrocarbon Spill, Corrective Action Area 6, Alameda Point, Alameda, California", prepared by Shaw Environmental, Inc. for BRAC Program Management Office West.
5. August 15, 2008(received August 13, 2008), "Final, Petroleum Corrective Action Summary Report, Former Naval Exchange Service Station, Corrective Action Area 7, Alameda Point", prepared by Shaw Environmental Group, Inc. for BRAC Program Management Office West.
6. August 13, 2008(received August 15, 2008), "Technical Memorandum for Second Quarter 2008, CAA 3, Alameda Point, Alameda, California", prepared by Shaw Environmental Group Inc. for BRAC Program Management Office West.
7. August 20, 2008(received August 22, 2008), "Remedial Design/Remedial Action Workplan, Installation Restoration Site 28, Alameda Point, Alameda, California", prepared by Innovative Technical Solutions, Inc. for BRAC Program Management Office West.
8. August 25, 2008(received August 27, 2008), " Draft Final, Remedial Design/Remedial Action Work Plan, Operable Unit 5/IR-02, Groundwater", prepared by Tetra Tech, E.C. Inc. for BRAC Program Management Office West.
9. August 28, 2008(received August 29, 2008), "Final, Petroleum Investigation Report, Petroleum Site Investigation AOC 23G, Alameda Point, Alameda, California", prepared by Shaw Environmental, Inc. for BRAC Program Management Office West.

Correspondence

1. July 29, 2008(received August 1, 2008), "Review Comments on the Draft Site Investigation Report for Transfer Parcels FED-1A, FED-2B and FED-2C, Alameda Point, Alameda, California, May 2008), letter from Ms. Xuan-Mai Tran, U. S. EPA, Region IX, to Mr. George Patrick Brooks, BRAC Program Management Office West.

2. July 30, 2008(received August 9, 2008), "Review of the Draft Pre-Design Work Plan for Installation Restoration Site 27, Alameda Point", letter from Ms. Anna-Marie Cook, U. S. EPA Region IX, to Mr. George Patrick Brooks, BRAC Program Management Office West.
3. July 31, 2008(received August 9, 2008), "Draft FY 2009 Amendment to the Site Management Plan, Alameda Point", letter from Ms. Anna-Marie Cook, U.S. EPA Region IX to Mr. George Patrick Brooks, BRAC Program Management Office West.
4. August 13, 2008(received August 15, 2008) "Final Petroleum Corrective Action Summary Report, Corrective Action 6, Alameda Point, Alameda, California", letter from Mr. George Patrick Brooks, BRAC Program Management Office West to Mr. John West, Regional Water Quality Control Board.
5. August 13, 2008(received August 16, 2008), "Technical Memorandum for Second Quarter 2008, CAA 3, Alameda Point, Alameda, California", letter from Mr. George Patrick Brooks, BRAC Program Management Office West, to Mr. John West Regional Water Quality Control Board.
6. August 15, 2008(received August 16, 2008), "Final Petroleum Corrective Action Summary Report, Corrective Action 7, Alameda Point, Alameda, California", letter from Mr. George Patrick Brooks, BRAC Program Management Office West to Mr. John West, Regional Water Quality Control Board.
7. August 14, 2008(received August 20, 2008), "Review of Draft Remedial Investigation Report for Operable Unit 2C-Revision 1, Alameda Point, Alameda, California", letter from Ms. Dot Lofstrom, P. G., DTSC (with attached memoranda from Mr. Mark Vest, P. G., CEG, and Mr. James M. Polisini, PhD), to Mr. George Patrick Brooks, BRAC Program Management Office West.

ATTACHMENT B-2
RESPONSE TO QUESTIONS
(2 pages)

Responses to questions from 14 August 2008 RAB Meeting

Q1) What were the volumes and locations of wastes moved from Site 1 to Site 2 during construction of the runway? Where in Site 1 did the wastes originate? Where in Site 2 were the wastes deposited?

A1) Because little waste was discovered during trenching at Site 1, it was theorized that waste material may have been removed to facilitate soil compaction during runway construction. It was further theorized that the waste material may have been moved to Site 2. The Navy is investigating this theory, but no records have been found to substantiate waste removal from Site 1 or transfer of waste material to Site 2.

Q2) During the TCRA, for each location in Site 1, Site 2, and Site 32 what were the volumes and depths of radiologically impacted soil excavated and removed? (Note that during the site tour, [we] were told that there was very little waste and that it was only on the surface at the "radium disposal pit". This seems counterintuitive in view of the Navy's letter that stated that radiologically impacted soil in Areas 3a and 3b were deeper than expected.

A2) At site 1, approximately 350 cubic yards of soil was removed from depths ranging from the surface to 4 feet below grade. At Site 2, approximately 150 cubic yards of soil were removed at depths ranging from the surface to 2 feet below grade. At Site 32, approximately 50 cubic yards of soil were removed at depths ranging from the surface to 2 feet below grade.

Q3) Where was the radiologically impacted soil taken for disposal?

A3) Approximately 90 percent of the impacted soil was transported offsite for disposal at the Waste Control Specialists facility in near Andrews, Texas. Approximately 10 percent of the soil was transported to the US Ecology in Clive, Utah.

Q4) During the TCRA, for each location in Site 1 what were the volumes and depths of soil contaminated with PAH's that were excavated and removed? Was the burn area the 1b the only location involved?

A4) This information is not available because the TCRA was conducted to address radiologically-impacted soil, and discrete soil samples were not analyzed for PAHs.

Q5) During the TCRA, what were the volumes of soil excavated from the firing range berm? What volume of lead-contaminated soil was disposed of offsite and where did it go? How far below grade did the excavation go? What was the volume of below-grade material that was excavated and removed? (A former Navy fighter pilot stationed at Alameda said that they took their Corvairs onto downward sloping ramps and test fired their 20-mm cannons into a

below grade pit.) Was the soil removed from the firing range berm surveyed for radioactivity? (Note that the exploratory trench in the area showed "all rad contaminated".)

A5) Volume of soil excavated:

Volume of soil removed:

Disposal location:

STILL BEING RESEARCHED

Depth of excavation:

Q6) During the exploratory trenching, of the 57 cu yd of radiologically impacted soil removed, what volumes came from the respective trenches?

A6) T-1, 1.5 cubic yards; T-2, 1.5 cubic yards; T-3, 10 cubic yards; T-4, 2 cubic yards; T-5, 2 cubic yards; T-6, 20 cubic yards; T-7 5 cubic yards; T-8, None; T-9, 2 cubic yards; T-10, 3 cubic yards; and T-11, 10 cubic yards.

Q7) Why are groundwater-monitoring wells, sampled for groundwater monitoring reports, approximately 100 yd apart? At this spacing, contaminated plumes as reports, approximately 100 yd apart? At this spacing, contaminated plumes as large as the known plume could be entering the Bay between monitoring wells.

A7) Interim groundwater monitoring at Site 1 is being conducted until the remedial action is put in place. The remedial action will include a site-wide groundwater monitoring plan with special focus on the VOC plume. Details will be provided in the upcoming Remedial Design documents.

Q8) Will the barge(s) that protrude from the bank along the shoreline be removed before transfer of the site? This situation appears to present an attractive nuisance and danger to those (especially children) using the shoreline park and beach area.

A8) The Navy does not have plans to remove any barges from the shoreline area.

Q9) Is excavation and removal of the most southern waste cell planned because of its proximity to the Bay, shoreline seismic weakness and the prevalence of radiologically impacted soil?

A9) Some of the material in the southern waste cell area is proposed for excavation for seismic considerations and to promote surface water drainage. The actual extent of the excavation will be finalized in the Remedial Design documents.

ATTACHMENT B-3

PROPOSED REMEDIAL DESIGN AND REMEDIAL ACTION SITE 1

(22 pages)



ALAMEDA SITE 1



PROPOSED REMEDIAL DESIGN & REMEDIAL ACTION



04 SEPTEMBER 2008



ALAMEDA SITE 1 - CHALLENGES





SESSION AGENDA



- INTRODUCTION
- SITE 1 REVIEW
- GENERAL TECHNICAL APPROACH
- SCHEDULE

3



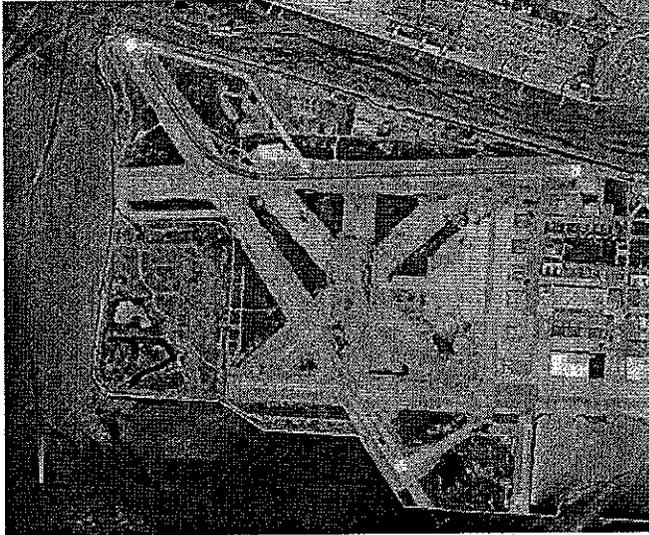
INTRODUCTION



- PROPOSED APPROACH
- CONTRACTOR SELECTED
- CONTRACTOR DEVELOPING TECHNICAL APPROACH
- NEED RAB INPUT ON TECHNICAL APPROACH

4

 **SITE 1 REVIEW** 

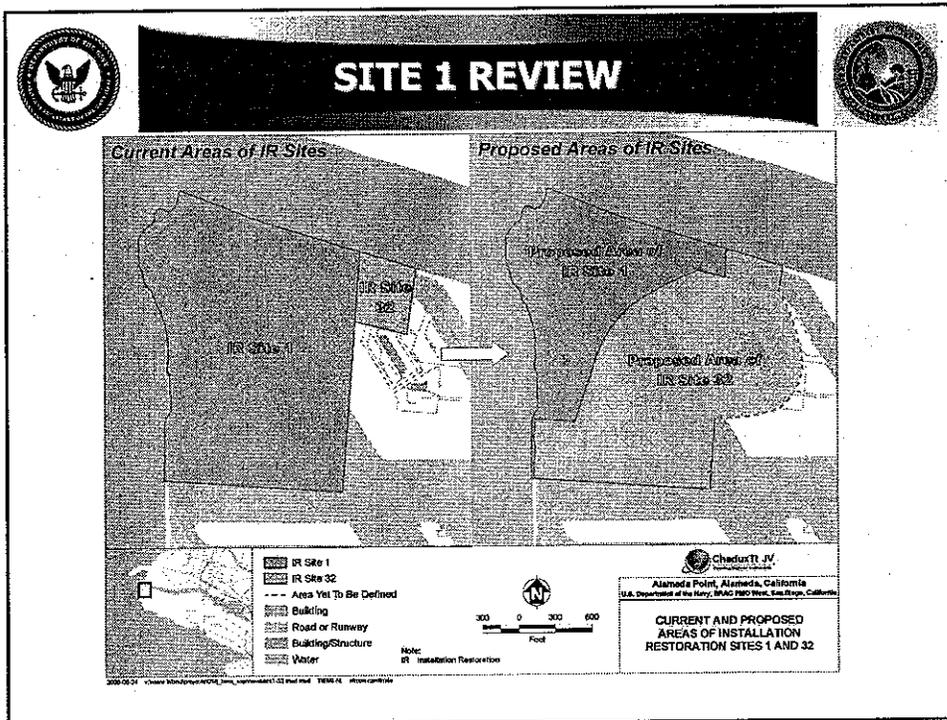
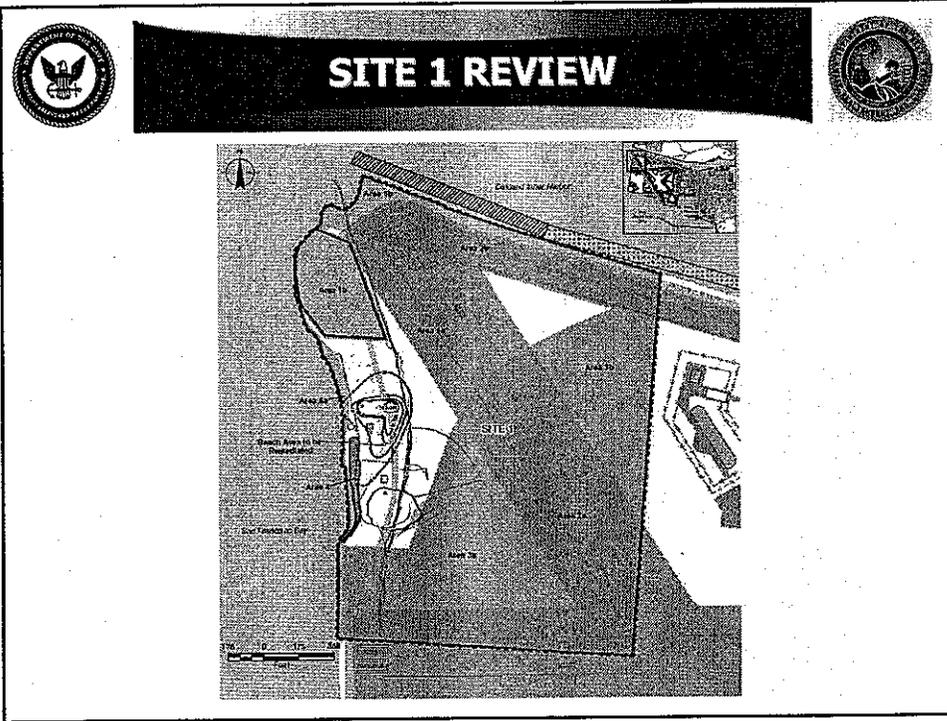


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 **SITE 1 REVIEW** 

- SEPT 2006 PROPOSED PLAN
- APRIL 2007 DRAFT ROD
- MAY 2008 EXPLORATORY TRENCH REPORT
- JULY 2008 TCRA COMPLETED, REPORT PENDING (~OCT 2008)

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TECHNICAL APPROACH



- PLANNING
- AREA 1b BURN AREA
- AREA 5 BEACH AREA
- AREA 1a MAIN DISPOSAL AREA
- AREA 2 PAVED AREAS
- AREA 6 SITE-WIDE RADIUM
- GROUNDWATER VOC PLUME

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PLANNING



- PROJECT MANAGEMENT AND QUALITY CONTROL TOOLS ARE IN PLACE.
- PLANNING DOCUMENTS ARE BEING PREPARED.
 - PRECONSTRUCTION RESPONSIBILITY MATRIX
 - ROLES AND RESPONSIBILITIES ARE DEFINED
- STAKEHOLDER INTERESTS ARE BEING INTEGRATED (RAB, BCT, ETC.)

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 **AREA 1b – BURN AREA FORMATION** 



1953 AERIAL PHOTOGRAPH 1957 AERIAL PHOTOGRAPH

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 **AREA 1b – BURN AREA** 

- EXCAVATE AREA
- CHARACTERIZE WASTES FOR PROPER DISPOSAL
- BACKFILL PER SEISMIC DESIGN

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AREA 1b - IMPLEMENTATION

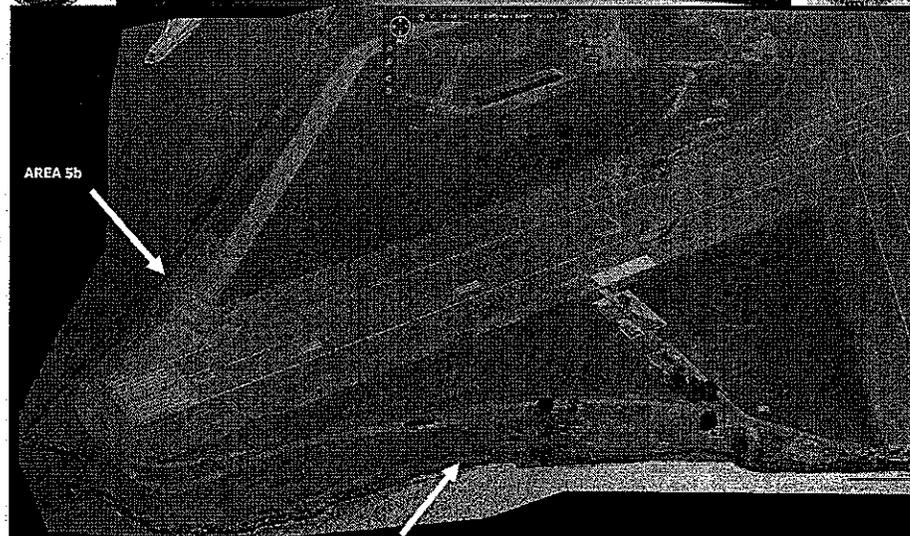


- IN-SITU RAD SCREENING
- SECONDARY RAD SCREENING AREA
- SCREEN PLANT
- INTERMODAL BIN STAGING AREA
- SOIL MANAGEMENT

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AREA 5 – BEACH AREA



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AREA 5 –PLANNING / CHARACTERIZATION



- SIXTY SHALLOW SOIL BORINGS AT 50 FOOT INTERVALS
- TWO SOIL SAMPLES PER BORING FOR ANALYSIS OF VOCs, SVOCs, PCBs AND TOTAL METALS
- RADIOLOGICAL MONITORING WILL BE CONDUCTED DURING THE ADVANCEMENT OF THE SOIL BORINGS
- SAMPLING WILL COMPLY WITH CULTURAL RESOURCE ARARS (WILL NOT PENETRATE OR DISTURB THE TRAINING WALL)

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AREA 5 –DESIGN



IF REMEDIAL GOALS ARE EXCEEDED:

- IMPACTED AREAS WILL BE EXCAVATED
- RELOCATE UNDER AREA 1a WASTE ISOLATION COVER (W.I.C.)
- CONFIRMATION SAMPLES WILL BE COLLECTED FROM WALLS AND FLOORS OF EXCAVATION(S).
- BACKFILL WITH CLEAN IMPORTED SOIL UPON RECEIPT OF CONFIRMATORY SOIL SAMPLING RESULTS



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AREA 1a – PLANNING



- **REGULATORY CONCURRENCE ON TITLE 27 DESIGN PLAN CRITERIA**
 - NO LOW-HYDRAULIC CONDUCTIVITY LAYER
 - NO MINIMUM 3% SLOPE
 - SHORELINE SETBACK APPROACH
- **REGULATORY CONCURRENCE FOR TIME SCHEDULES AND DELIVERABLES**
- **PUBLIC OUTREACH PROGRAM**

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AREA 1a – CHARACTERIZATION



- **DETERMINE EXTENT OF WASTE**
 - TEST TRENCHES WITH VISUAL OBSERVATION
 - ROTOSONIC BORINGS THROUGH RUNWAY
 - IS WASTE UNDER RUNWAY? IF SO, EXTENT?
 - CAN RUNWAY BE INCORPORATED AS PART OF W.I.C.?
- **SUPPLEMENT EXISTING GEOTECH DATA**
 - SELECT ROTOSONIC BORINGS DOWN TO MERRITT SAND
 - COORDINATE W/ GW REMEDIATION TO COLLECT SOIL/SEDIMENT SAMPLES FOR BENCH SCALE TESTING
- **PERFORM A VERIFICATION SOIL-GAS SAMPLING PROGRAM**

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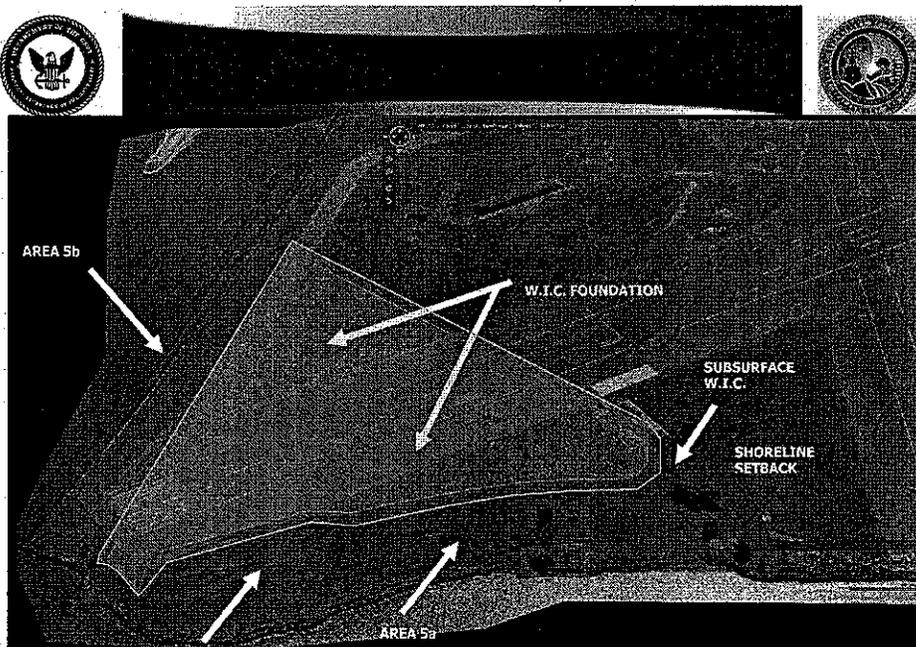


AREA 1a – DESIGN

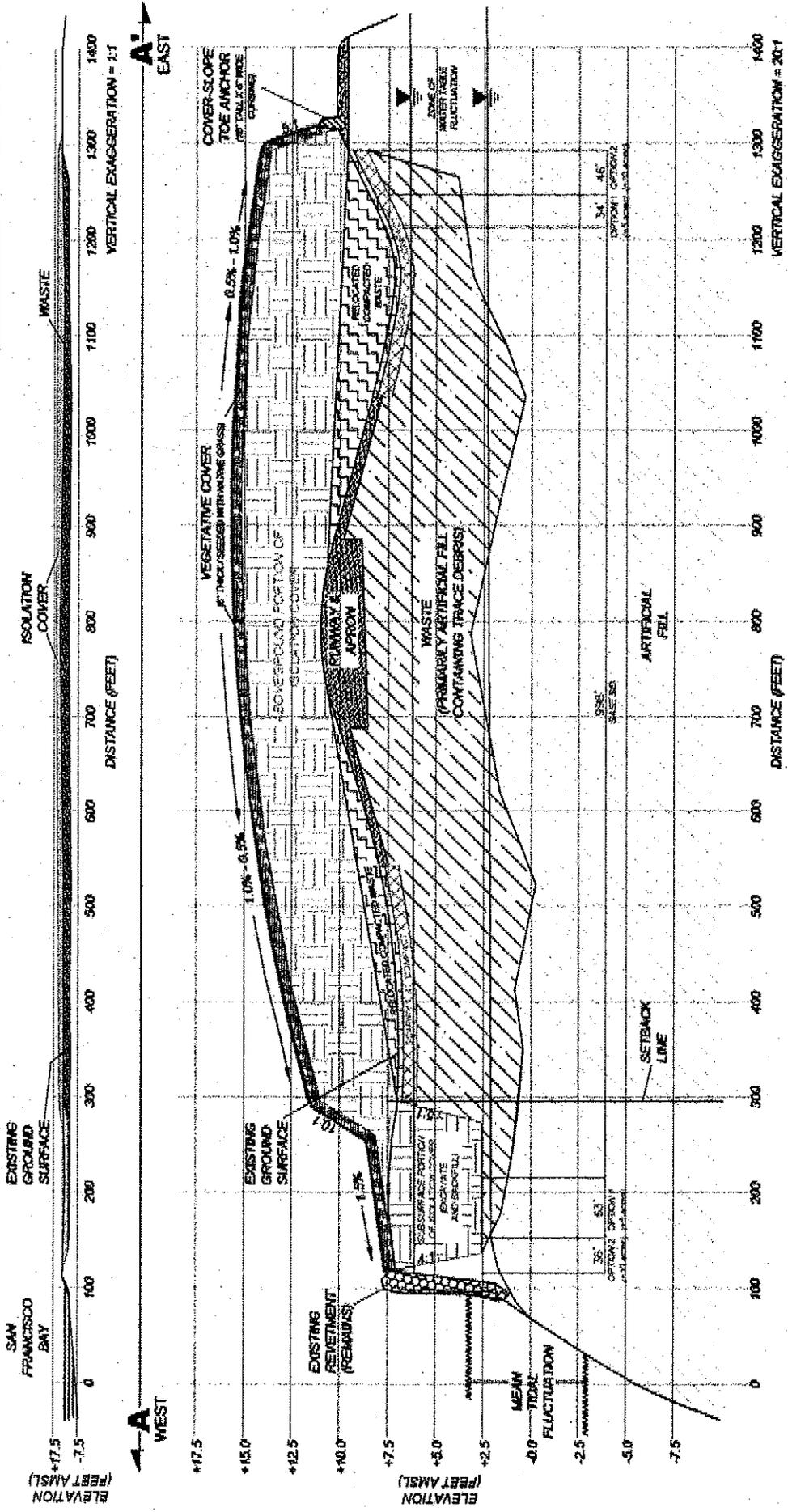


- TITLE 27 DESIGN ELEMENTS
 - SEISMIC STABILITY
 - SHORELINE SETBACK EXCAVATION/FILL
 - LANDFILL GAS MONITORING PLAN (if necessary)
 - PRECIPITATION AND DRAINAGE PLAN
 - LAND AND WATER USE PLAN
 - OPERATION & MAINTENANCE PLAN AND LONG TERM MONITORING PLAN
 - EMERGENCY RESPONSE PLAN
 - EROSION RESISTANT VEGETATIVE COVER

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AREA 1a – BACKFILL OPERATIONS

- ESTABLISH RAD-FREE STAGING AREA AND HAUL CORRIDOR
- FILL PROGRESSION
 - INITIAL LIFT TO ISOLATE RAD
 - PROMOTES WASTE MINIMIZATION

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AREA 1a – CONSTRUCTION PROGRESSION

AREA 5b

ABOVEGROUND W.I.C.

W.I.C. FOUNDATION

SUBSURFACE W.I.C.

AREA 1b

AREA 5a

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AREA 2 – PAVED AREAS



- PAVED AREAS OUTSIDE AREA 1A
- MANAGED WITH INSTITUTIONAL CONTROLS (ICs)
- ICs WILL INCLUDE APPLICATION OF TACK COAT OVER EXISTING PAVED SURFACES
- 1.2MM SQUARE FEET WILL BE CLEANED AND TACK COATED

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AREA 6 – SITE-WIDE RADIUM



- AREA UNDERSTANDING & PERFORMANCE OBJECTIVE
- IMPLEMENTATION STRATEGY
 - PLANNING
 - DESIGN
 - IMPLEMENTAION

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AREA 6 – SITE-WIDE RADIUM BACKGROUND



- A SITE-WIDE RADIUM SURVEY WAS CONDUCTED AT SITE 1 IN 2004
- RESULTS INDICATED THAT MOST OF THE ANOMALIES WERE LOCATED IN THE FORMER WASTE DISPOSAL AREA (AREA 1)
- SUPPLEMENTAL SURVEY PERFORMED IN 2006, INCLUDING THE SHORELINE
- RESULTS OF THE SURVEYS ARE DOCUMENTED IN THE TIME CRITICAL REMOVAL ACTION (TCRA) COMPLETION REPORT

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AREA 6 – PLANNING



- MARSSIM FINAL STATUS SURVEY (FSS) WILL BE DEVELOPED FOR ALL AREA LOCATED OUTSIDE OF AREA 1b
- SURFACE SCAN WILL BE CONDUCTED OVER THE TOP OF THE NEWLY INSTALLED WIC (AREA 1a)

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AREA 6 - PLANNING



- **PLAN WILL INCLUDE:**
 - PROCEDURES FOR SURFACE SCANNING
 - SYSTEMATIC (OR RANDOM) AND JUDGMENTAL SOIL SAMPLING
 - STATISTICAL EVALUATION OF DATA COLLECTED

- **SCANNING SURVEY OBJECTIVE: IDENTIFY LOCATIONS THAT EXCEED CLEANUP LEVEL AND CONDUCT ADDITIONAL INVESTIGATION OF THESE AREAS**

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WETLAND MITIGATION



- **EXISTING WETLANDS: EVALUATE CURRENT FUNCTIONS AND VALUES (using Army Corps of Engineers criteria)**

- **CREATION SITE EVALUATION**
 - HYDROLOGY
 - SOILS
 - EXISTING VEGETATION
 - WATER SOURCE/QUALITY

- **AGENCY COORDINATION: INCORPORATE SUBSTANTIVE REQUIREMENTS AND INPUT**

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WETLAND MITIGATION



- CREATION DESIGN – Site 2
 - 1:1 REPLACEMENT RATIO
 - ECOLOGICAL VALUE OF DESIGN
 - NATIVE PLANTS
 - WILDLIFE HABITAT
 - REPLACEMENT OF WETLAND FUNCTIONS
 - SITE PREPARATION
 - HEAVY EQUIPMENT
 - REVEGETATE
 - SITE MAINTENANCE
 - INVASIVE SPECIES CONTROL
 - MONITORING (Cover, Density, Diversity)

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GROUNDWATER VOC PLUME



- AREA UNDERSTANDING & PERFORMANCE OBJECTIVE
- IMPLEMENTATION STRATEGY
 - PLANNING
 - CHARACTERIZATION
 - DESIGN
 - IMPLEMENTATION

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GROUNDWATER VOC PLUME BACKGROUND

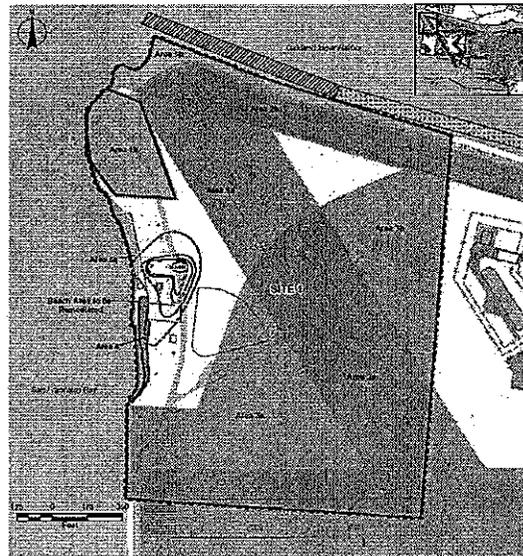


- VOCs IN SHALLOW GROUNDWATER (FWBZ) AT AREA 1a
- HIGH CONCENTRATIONS – DNAPL?
- REMEDIAL ACTION = ISCO FOLLOWED BY MNA
- PREVIOUS DETAILED INVESTIGATIONS INDICATE PLUME CORE RELATIVELY SMALL AREA AND SHALLOW DEPTH

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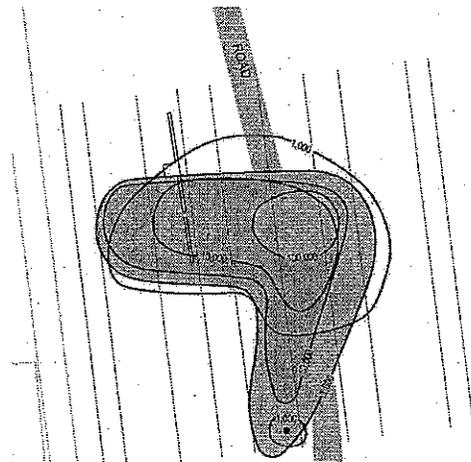


GROUNDWATER VOC PLUME

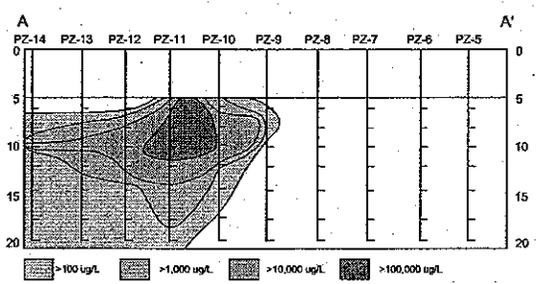




GROUNDWATER VOC PLUME DESIGN



GROUNDWATER VOC PLUME DESIGN





GROUNDWATER VOC PLUME PLANNING



- COORDINATE CHARACTERIZATION AND REMEDIATION WITH AREA 1a
- STEP 1: CHARACTERIZE TO IDENTIFY HOT SPOTS FOR TREATMENT
- STEP 2: DESIGN (includes bench testing and installing injection and monitoring wells for field pilot testing)
- STEP 3: AFTER AREA1a CAPPING IS COMPLETED, MOBILIZE TO INSTALL AND OPERATE ISCO TREATMENT SYSTEM

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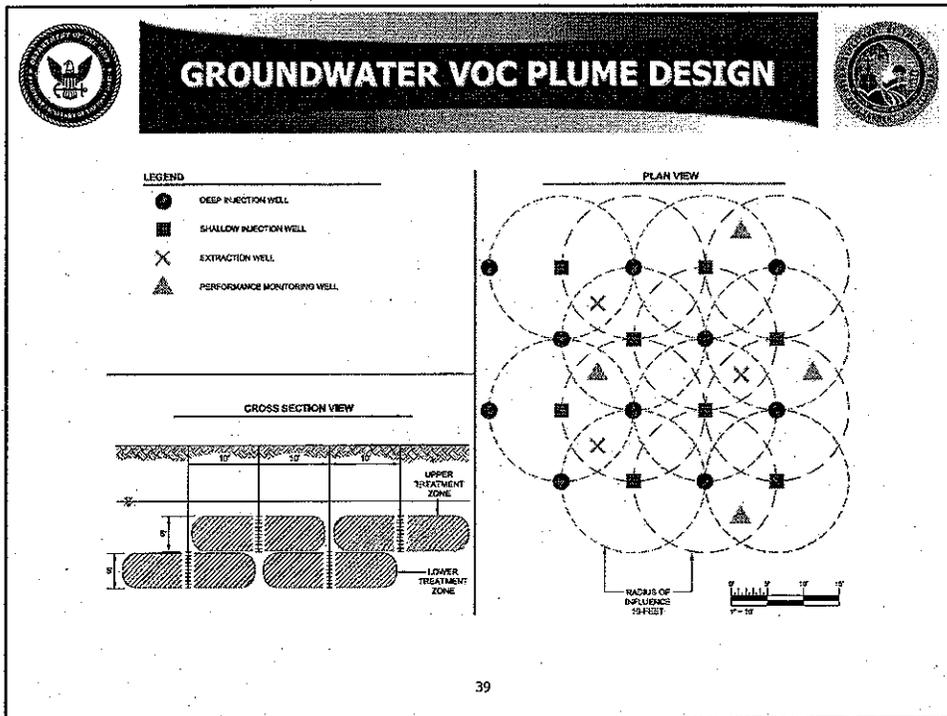


GROUNDWATER VOC PLUME DESIGN



- CONCEPTUAL DESIGN
- BENCH TESTING
- FIELD PILOT TESTING: INSTALL PILOT
- INJECTION AND RECOVERY WELLS
- FINAL DESIGN

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-
- GROUNDWATER VOC PLUME IMPLEMENTATION**
- CHARACTERIZE
 - DESIGN
 - CONSTRUCT AND OPERATE ISCO TREATMENT SYSTEM
 - COMPLETE LTM/O&M PLAN FOR POST-TREATMENT MNA
- 40



SCHEDULE



- OCT 2008 - DRAFT FINAL ROD
- OCT 2008 – BEGIN SITE CHARACTERIZATION
- JUNE 2009 – REMEDIAL DESIGN COMPLETE
- SEPT 2009 – CONSTRUCTION BEGINS
- DEC 2011 – REMEDIAL ACTION COMPLETE

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ALAMEDA SITE 1



QUESTIONS??

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