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

www.bracpmo.navy.mil
Building 1, Suite 140, Community Conference Center
Alameda Point
Alameda, California

October 1, 2009

The following participants attended the meeting:

Co-Chairs:

Dale Smith	Restoration Advisory Board (RAB) Community Co-chair
Derek Robinson	Navy Base Realignment and Closure (BRAC) Program Management Office (PMO)-West Lead Remedial Project Manager (RPM)

Attendees:

Anna Marie Cook	U.S. Environmental Protection Agency (EPA)
Dave Cooper	EPA
David Darrow	Navy Project Manager (PM)
Doug Delong	U.S. Navy
Catherine Haran	Navy RPM
Fred Hoffman	RAB
George Humphreys	RAB
Craig Hunter	ChaduxTt
Joan Konrad	RAB
James Leach	RAB
Gretchen Lipow	Community member
Dot Lofstrom	California Environmental Protection Agency Department of Toxic Substances Control (DTSC)
John McGuire	Shaw Environmental, Inc. (Shaw)

Marsha Pendergrass	RAB Facilitator
Kurt Peterson	RAB
Dennis Robinson	PSC Environmental Services
Paul Ruffin	DTSC
Peter Russell	Alameda Reuse and Redevelopment Authority (ARRA)
Bill Smith	Community member
Radhika Sreenivasan	ChaduxTt
Jean Sweeney	RAB
Jim Sweeney	RAB
Michael John Torrey	RAB
Xuan-Mai Tran	EPA
Tommie Jean Valmassy	ChaduxTt
John West	San Francisco Regional Water Quality Control Board (Regional Water Board)

The meeting agenda is provided in Attachment A.

MEETING SUMMARY

I. Approval of August and September RAB Meeting Minutes

Dale Smith (RAB community co-chair) called the October 2009 Former Naval Air Station Alameda (Alameda Point) RAB meeting to order at 7:05 p.m.

Ms. Smith asked for comments on the August and September 2009 RAB meeting minutes. RAB members provided comments, which will be incorporated into the final sets of minutes for August and September 2009.

Comments on the August Minutes:

The following comments were provided by George Humphreys (RAB):

- Page 5 of 9, section III, last paragraph, first sentence: "Mr. Humphreys said that the dredge soils came from the Seaplane Lagoon and..." will be revised to "Mr. Humphreys said that the dredge soil in Site 2 came from the Seaplane Lagoon and…."

The August RAB meeting minutes was approved with the above modifications.

Comments on the September Minutes:

The following comments were provided by Fred Hoffman (RAB):

- Page 8 of 11, section III, first paragraph, first sentence, "Mr. Hoffman asked if he could have permission to talk to Murray Anderson (AMEC)" will be revised to, "Mr. Hoffman asked Mr. Brooks if he could authorize Mr. Murray Einarson (AMEC) to talk to him."

- Page 8 of 11, section III, first paragraph, after last sentence insert "Mr. Hoffman requested to be allowed to attend the BCT meeting to discuss the VOC plume."

The following comments were provided by George Humphreys (RAB):

- Page 7 of 11, section III, first paragraph, second sentence, "Mr. Humphreys suggested that the barge be removed or covered because it causes a nuisance" will be revised to "Mr. Humphreys suggested that the barge be removed or covered because it constitutes an attractive nuisance."

- Page 7 of 11, section III, second paragraph, third sentence, "Mrs. Sweeney said that the rodents…" will be corrected to "Ms. Smith said that the rodents…."

- Page 9 of 11, section IV, first paragraph, after first sentence insert, "Among the items of interest were the existence of a firing range near the officer's quarters and sinking of Navy ship as part of the site filling operations. Mrs. Sweeney also said that there was a well where the officer's club is."

- Page 9 of 11, section IV, second paragraph, after last sentence insert, "Mr. Humphreys noted that the structure is no longer performing a useful function as a pier and hence the exemption for creosote should no longer apply."

- Page 9 of 11, section IV, third paragraph, first sentence, "Ms. Smith said that the Navy has repeatedly said that the RAB is responsible to provide information to the public" will be revised to "Ms. Smith said that the Navy has repeatedly said that the RAB is responsible to provide information from the public to the Navy."

- Add Mr. Kurt Peterson to the list of attendees.

The following comments were provided by Ms. Smith:

- Page 7 of 11, section III, first paragraph, fourth sentence, "Ms. Smith added that because rip-rap will be present along that area, the barge will not be accessible to the bay" will be revised to "Ms. Smith added that because rip-rap will be present along that area, the barges will be accessible to the visitors."

- Page 9 of 11, section IV, third paragraph, second sentence, "She said the California EPA…" will be revised to "She said that the RAB guidelines of the California EPA…."

The September RAB meeting minutes was approved with the above modifications.

II. Co-Chair Announcements

Derek Robinson (Navy Lead RPM) announced that Pat Brooks (Navy Co-Chair) has accepted a new position within the Base Realignment and Closure (BRAC) Program Office starting September 28 and will no longer be the BRAC environmental coordinator (BEC) for Alameda. Mr. Brooks will, however, hold the position of Navy co-chair and BEC until his position is filled. He said that Mr. Brooks could not attend the meeting because of an issue with the Navy's travel arrangements within different departments. Mr. Robinson said that he will act as the Navy co-chair for the October RAB meeting. Michael John Torrey (RAB) asked if Mr. Brooks will attend the November RAB meeting. Mr. Robinson said that Mr. Brooks might attend if his position has not been filled by the meeting. Jean Sweeney (RAB) asked Mr. Robinson if he had applied for the BEC position. Mr. Robinson said that he had applied for the position. Ms. Smith said that Mr. Brooks was the most approachable BEC that she has encountered. She added that Mr. Brooks has been receptive to RAB issues regardless of agreement or disagreement. Ms. Smith said that she is sorry to see Mr. Brooks leave his position.

Ms. Smith reminded the RAB that the community co-chair elections are scheduled for December; hence, the nominations for the community co-chair position need to be submitted at the RAB meeting in November.

Ms. Lofstrom introduced Paul Ruffin as the new DTSC project engineer.

Mr. Hoffman put forth a motion for the RAB to allow the community co-chair to chair the meeting. He added that the role of a facilitator should be limited to processes where facilitation is needed or when called on by members of the RAB or the BRAC Cleanup Team (BCT). Mr. Hoffman said that he would want to maintain a facilitator but does not prefer that the facilitator chair the meeting. Mr. Torrey seconded the motion. Mr. Robinson said that he, as well as Mr. Brooks, thought that a facilitator will help the meeting stay focused. He added that the Navy also agreed to Mr. Hoffman's suggestion. The motion was passed unanimously.

Mr. Robinson reviewed the action items. (See Action Item list at the end of these minutes)

Action Item 1 – Pending. Presentation delayed to a later meeting.

Action Item 2 – Pending. Mr. Robinson indicated that the diver is scheduled to investigate the large, submerged, unidentified object on October 12. He added that the results of the investigation will be communicated during the next meeting.

Action Item 3 – Pending. Mr. Robinson said that the Navy is analyzing samples collected from the storm drain to see if it has any correlation to the constituents in the anomaly. Such a correlation would help in confirming whether the anomaly was a result of the storm drain cleanup and was discarded accidently near the Seaplane Lagoon. He added that the sample results are being reviewed and Mr. Brooks will provide an update on that next month.

Action Item 4 – Completed. Mr. Robinson distributed the *Summary of Site Cleanup at Alameda Point* (Attachment B-1). He indicated that this summary is taken from the Community Involvement Plan document.

Action Item 7 – Pending.

Action Item 8 – Completed. Mr. Robinson provided the map showing the extent of the Marsh Crust (Attachment B-2). Mr. Robinson said that this map is an old bathymetric map that shows the entire area.

Action Item 9 – Pending. It was discussed in the meeting that Mr. Robinson will schedule a date for the technical sub-committee meeting on the Site 27 remedial action before the next RAB meeting. Mr. Hoffman suggested that the RAB would prefer to meet on Thursdays.

Action Item 10 – Completed. Mr. Robinson distributed the handout *Site Progress – Alameda Point RAB Meeting – October 1, 2009* (Attachment B-3). He said that the handout lists all the sites and their abbreviated status in cleanup.

Action Item 11 – Pending. Mr. Robinson presented the latest semi-annual groundwater monitoring report to Mr. Hoffman. He also provided the handout *Site 1 (Operable Unit [OU-3]) Groundwater Plume Information* (Attachment B-4).

Mr. Hoffman said that he would like to discuss the RAB concern that the Site 1 groundwater plume has not been adequately characterized. He added that the last information provided on this plume was from Murray Einarson (AMEC). Mr. Hoffman said that Mr. Einarson had indicated that there was a dense nonaqueous phase liquid (DNAPL) source area in the plume. Mr. Hoffman added that no action has been taken to address the plume in the 11 years since the University of Waterloo project and that the newest information provided on the Site 1 groundwater plume was collected in 1992. Ms. Haran clarified that the data from well M028-E-OLD were the only data from 1992. Mr. Hoffman noted that the data used to generate the groundwater plume contour map were from multiple sampling events in the past 17 years. He added that this map was created in 2005 with data collected at multiple times over a decade. Mr. Robinson said that he does not read the contour map in the same manner and clarified that the wells are being sampled and the groundwater monitoring report shows the sampled wells. Mr. Hoffman asked how many wells in the plume are regularly sampled. Marsha Pendergrass (RAB facilitator) asked if Mr. Hoffman wanted the groundwater plume discussion as another action item or as an agenda item. Mr. Hoffman said he is concerned about postponing this discussion at every meeting. Mr. Hoffman said that he wants a contour map generated from data from the last

quarter. He added that, in his opinion, this contour plot is not acceptable to plan remediation. Mr. Robinson said that the Navy is collecting multiple samples as part of the remedial design (RD).

Mr. Hoffman asked if the BCT discussed this issue at the BCT meeting. Anna Marie Cook (EPA) confirmed that the BCT discussed this topic at the meeting. Ms. Cook agreed with Mr. Hoffman that using 1992 data to contour the plume is not appropriate to design the remediation system. She added that in 1992 University of Waterloo discovered a groundwater plume at Site 1. Since then, monitoring wells have been installed within the plume and are monitored on a regular basis. The monitoring results indicated that the concentrations are either stable or decreasing over time for most wells. Ms. Cook said that the record of decision (ROD) has selected a groundwater alternative to clean up the plume and the RD will require extensive delineation and characterization of the plume before the remediation system is in place. She added that the plume should be characterized fully before remediation begins. The cost of the characterization is included in the cost of the remedy. She indicated that since this plume is old, more extensive pre-design sampling will occur. Ms. Cook said that the Navy is not relying on old data and that the current sampling is to monitor the plume to insure that no significant changes have occurred. Mr. Hoffman said that the plume should be characterized during the remedial investigation (RI) and not post-ROD. Ms. Sweeney asked if it is common for a DNAPL plume to naturally attenuate. Ms. Cook said that she is not certain that the plume contains DNAPL and she would need to review the data. Mr. Robinson said that he will check whether the plume contains DNAPL. It was decided that a full discussion on the plan for the Site 1 groundwater plume will be planned during the next RAB meeting, and AMEC Geomatrix will be invited.

Action Item 12 – Completed. Ms. Haran said that the historical information of the site showed that the firing range contained a pistol range, a shotgun range, and the former firing range berm that was removed during the time-critical removal action (TCRA). She said that to the north is a separate skeet range; however there is no other evidence of other ranges at the site. Ms. Smith asked why the other range was not investigated. Ms. Haran said that the Navy has sampled in the area and based on the sampling results it was determined that the northern skeet range area did not present an urgent threat to human health or the environment and, therefore, was not included in the TCRA; however, the area will be addressed with the final remedy.

Action Item 13 – Completed. Ms. Smith distributed the handout *Documents Received, August and September 2009* (Attachment B-5). She said that the City of Alameda commented extensively on Site 1 and she can provide the RAB members with a copy if needed. Ms. Smith requested the RAB comment letter on the Site 2 proposed plan be included with the October meeting minutes. Ms. Smith indicated that she was pleased to see the detailed comments from DTSC on the Site 28 RD/remedial action (RA) work plan. She added that DTSC commented on the lack of characterization to justify the location of monitoring wells, indicated that heavy metals have not been adequately addressed, and that not enough information was available for remediation of soil.

Ms. Smith asked if Ms. Cook had any updates on the EPA project. Ms. Cook said that she would provide a brief update during the next RAB meeting.

III. Site 34 Feasibility Study

Mr. Robinson introduced David Darrow (Navy RPM) to begin the presentation on the Site 34 feasibility study (FS) (Attachment B-6). Mr. Darrow introduced Dr. Craig Hunter (ChaduxTt) to answer any questions on the wetland delineation report.

During the review of Slide 10, James Leach (RAB) asked which land use controls apply to Alternative 3. Mr. Darrow explained that since Alternative 3 leaves no contamination at the site, there are no restrictions on land use; there would be no prohibition to the land use as a result of contamination. Mr. Hoffman asked why Alternative 3 is less expensive than Alternative 2 when the contaminated soil is excavated. Mr. Darrow said that Alternative 2 is more expensive since institutional controls (ICs) need to be maintained for 30 years.

Mr. Humphreys asked if confirmation samples would be collected from the side as well as the bottom of the excavation. Mr. Darrow confirmed they would be collected from the sides as well as the bottom.

"*Notes - Ms. Sweeney asked if the excavation will be the usual 2-foot to 4-foot. Mr. Darrow responded that excavation will be for the full extent of the contamination. Ms. Smith indicated that the document, however, states that the vertical extent of excavation will only be to a maximum of 4 feet and horizontal excavation will be until no further contamination is encountered.*"

Ms. Smith said that the wetland delineation report was a well written document and WRA Environmental Consultants did an excellent job on the wetland delineation. She added that the only comment she had on the FS was that it does not state that the site is a suitable habitat for wildlife.

IV. BRAC Cleanup Team Update

Ms. Cook distributed a brief handout *IR Site 34 Summary* (Attachment B-7) as an addition to the presentation made by the Navy. Ms. Cook said that the BCT visited Site 27 during the meeting.

Ms. Cook distributed *Status of CERCLA Cleanup Activities and Transfer as of the end of Fiscal Year 2009 (September 30, 2009), Alameda Point* (Attachment B-8). Ms. Cook went through each site listed in the handout and provided an update on field work and cleanup efforts.

During Ms. Cook's update on Site 14, Ms. Smith asked if the lines of reagent injection looked liked gates at the site. Ms. Cook said that they appear as circles with modules that have been laid out methodically.

During her Site 5 update, Ms. Cook noted that the concentrations listed are not correct and the Navy has the accurate concentrations, which are higher at the start and lower at the end.

During her Site 28 update, Ms. Cook noted that cleanup of arsenic at the site will extend only to 2 feet and ICs will be placed restricting the use of the property. Copper in soil and groundwater will be remediated using a new technology called metal reducing compounds (MRC). The copper is reduced both in soil and groundwater and the reduced copper adheres to the soil particles, which will be excavated. Ms. Smith asked how the MRC would affect arsenic in groundwater. Ms. Cook said that arsenic was detected in one well, which was inland. Since the well was inland, it was determined that it would not affect the bay. She said that the Navy will monitor the well for at least 5 years to make sure that arsenic is not entering the bay. Ms. Smith asked if the MRC could interfere with the arsenic. Ms. Cook said that the Navy will consider the possibility of MRC reacting with arsenic, but testing indicates that it does not. However, the Navy has not evaluated it adequately to be definite. Ms. Cook said that the Navy will monitor for arsenic as well. Ms. Smith asked if wells can be added for analysis of arsenic. Ms. Cook thought that more wells were added but was not sure. She said that she would ask that Francis Fadullon (Navy) check.

During the update on the six-phase heating at Site 5, Ms. Smith said that the OU-2C FS indicates that the soil temperature exceeded 172 ºFahrenheit (77.8 ºCelsius) 6 to 8 months after the six-phase heating. She asked Ms. Cook whether this temperature would normally be reached. Ms. Cook said that six-phase heating heats to 90 ºCelsius (194 ºFahrenheit), but she said it seems odd to reach such high temperature in soil after 6 months. Ms. Haran said that once the six-phase heating is turned off the soil does not normally maintain the 90 ºC temperature for more than 2 weeks. Ms. Cook said that the high temperature reading is possible because there was a concrete slab above the soil that did not allow heat to radiate; in most cases, however, the soil would not maintain the high temperature.

During the review of storm drain system removal, Ms. Sweeney asked if the storm drain removal used freeze technology. Ms. Cook said it does not use freeze technology.

Mr. Humphreys said that several years ago Patrick Lynch stated a location near the water on the east end of Estuary Park contained high levels of pentachlorophenol and that the information was not included in the subsequent report. He said that no answer was provided to the RAB. Ms. Cook agreed that the earlier report listed a high detection that is not included in subsequent reports. She said that she does not have a good answer to the question but noted that the area has undergone excavation and remediation since then and all the contamination has been addressed.

Mr. Hoffman asked if the Navy prepares sequential contour plots for the groundwater remedy to show the progress of the plume cleanup. Ms. Cook said that as a part of the removal action completion report, the Navy uses data from the monitoring wells to show that objectives and RGs are met. Ms. Cook asked about the benefit of a sequential contour. Mr. Hoffman said that contour maps should be a part of the performance monitoring system. Ms. Cook said that monitoring helps to determine whether another round of in situ chemical oxidation (ISCO) is needed. She said that enough monitoring well points will be located within the entire plume to

verify the remedial action objectives are achieved. Mr. Hoffman thought that the data obtained from monitoring should be processed to show the progress of remediation with time.

V. Community and RAB Comment Period

Gretchen Lipow (Community) noted that Mr. and Ms. Sweeney are being honored for their work at Alameda on October 17. Ms. Lipow said that the research done by the Sweeneys have saved the City 40 million dollars. She indicated that the event will take place at the Alameda public library and invited all to attend.

Bill Smith (Community) said that on Monday night (September 28) the planning board approved the environmental impact report (EIR) work. Mr. Smith asked if Dr. Russell was involved with the City's EIR process in which, a city official will brief the RAB about the EIR process. Dr. Russell asked what the EIR was about. Mr. Smith replied that the EIR is for the Alameda Point Revitalization Plan Initiative. Dr. Russell said that he is not currently involved with it. Mr. Smith said that the city's report will provide an opportunity to obtain an independent report card showing the performance of the Navy and the regulatory agencies. He said that SunCal will be paying for the EIR and the city will supervise its execution. Mr. Smith suggested adding another column to the summary of the sites cleanup table named "RAB's concerns" to list the RAB's concerns on certain sites that are not being addressed and that may impact the land use. He indicated that the official announcement for the EIR would be in a couple of months. He noted that there is a scoping period for the EIR and suggested the RAB voice its concerns at that time. After comments are received and addressed, a final EIR will be produced. He said that the whole process usually takes a year or more; however, there are incentives for this EIR to move faster. He added that he believes this is where the RAB interface is missing - between the cleanup steps and the reuse - and that the EIR is the place where it comes together. He encouraged the RAB to get in touch with the city and be a part of the process.

Mr. Robinson noted that the next RAB meeting would be held on November 5, 2009.

VI. Meeting Adjournment

The meeting was adjourned at 9:20 p.m.

Action Items

Action Items:	Previous Item #/ Action Item Status/ Action Item Due date:	Initiated by:	Responsible Person:
1. Request for Presentations: **a.** Bayport sewer systems and change in the plumes over time.	1./ Pending/ TBD.	RAB	Mr. Brooks
2. Provide information on the large, submerged, unidentified object and radium-226.	2./ Pending/ November 5, 2009	RAB	Mr. Brooks
3. Provide update on basewide radiological investigation by RASO.	3./ Pending/ November 5, 2009.	RAB	Mr. Brooks
4. Provide a list of cleanup improvements for all sites.	4./ Completed/NA	RAB	Mr. Brooks
5. Add discussion topic "Methods of RAB communication of remedial work at Alameda to the community."	7./ Pending/ November 5, 2009	Ms. Konrad	Mr. Brooks
6. Provide RAB with the latest map on the extent of Marsh Crust	8./ Completed/ NA	Ms. Smith	Mr. Brooks
7. Schedule technical meeting on Site 27 remedial action	9./ Pending/ Before November 5, 2009	Mr. Hoffman	Mr. Robinson
8. Provide a monthly update on cleanup for all sites to the RAB	10./ Completed/ NA	Mr. Hoffman	Mr. Brooks
9. Review the basewide annual groundwater monitoring report and send a copy of the report to Mr. Hoffman. Also provide information on VOC plume.	11./ Completed/ NA	Mr. Hoffman	Mr. Brooks
10. Provide information on the second firing range at Site 1	12./ Completed/ NA	Ms. Smith	Ms. Haran
11. Provide the list of documents received	13./ Completed/ NA	Mr. Humphreys	Ms. Smith
12. Add a discussion on the Site 1 groundwater plume with AMEC to the agenda	0./New/ November 5, 2009	Mr. Hoffman	Mr. Robinson

Action Items:	Previous Item #/ Action Item Status/ Action Item Due date:	Initiated by:	Responsible Person:
13. Provide a brief update on the EPA project	0./ New/ November 5, 2009	Ms. Smith	Ms. Cook
14. Include the RAB comment letter on Site 2 Proposed Plan in the October meeting minutes	0./ New/ November 5, 2009	Ms. Smith	Mr. Robinson

ATTACHMENT A

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA

October 1, 2009

(1 page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

OCTOBER 1, 2009, 6:30 PM

ALAMEDA POINT – BUILDING 1 – SUITE 140
COMMUNITY CONFERENCE ROOM
(FROM PARKING LOT ON W MIDWAY AVE, ENTER THROUGH MIDDLE WING)

TIME	SUBJECT	PRESENTER
6:30 – 7:00	**Site 34 Field Visit**	**David Darrow**

RAB members should meet in front of Building 1 promptly at 6:30. The Navy will provide transportation, which will depart at 6:30. We will drive to the site and observe the site features, including the wetlands.

7:00 – 7:15	**Approval of Minutes**	**Ms. Dale Smith**
7:15 - 7:30	**Co-Chair Announcements**	**Co-Chairs**
7:30 – 8:00	**Site 34 Feasibility Study**	**David Darrow**
8:00 – 8:15	**BCT Update**	**Anna-Marie Cook**
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 Summary of Site Cleanup at Alameda Point. Distributed by Derek Robinson, Navy Lead RPM (10 pages)

B-2 Map on Extent of Marsh Crust. Distributed by Derek Robinson, Navy Lead RPM (1 page)

B-3 Site Progress – Alameda Point RAB Meeting – October 1, 2009. Distributed by Derek Robinson, Navy Lead RPM (1 page)

B-4 Site 1 (OU-3) Groundwater plume information. Distributed by Derek Robinson, Navy Lead RPM (15 pages)

B-5 Documents Received, August and September 2009. Distributed by Dale Smith, RAB Co-Chair (1 page)

B-6 Site 34 Feasibility Study Presentation Handout. Distributed by David Darrow, Navy PM (6 pages)

B-7 IR Site 34 Summary. Distributed by Xuan-Mai Tran, EPA (1 page)

B-8 Status of Alameda Point CERCLA Cleanup Activities and Transfer as of the end of Fiscal Year 2009 (September 30, 2009). Distributed by Anna Marie Cook, EPA (2 pages)

B-9 October upcoming documents for RAB review. Distributed by Derek Robinson, Navy Lead RPM (1 page)

B-10 Restoration Advisory Board Rule Handbook. Distributed by Derek Robinson, Navy Lead RPM (28 pages)

B-11 RAB comment letter on Site 2 Proposed Plan (4 pages)

ATTACHMENT B-1

SUMMARY OF SITE CLEANUP AT ALAMEDA POINT

(10 pages)

Summary of Site Cleanup
Alameda Point
Alameda, California

Source: *Draft Community Involvement Plan Update – Alameda Point - August 14, 2009*

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION

Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 1 (OU-3)	1943 – 1956 Disposal Area	Used primarily as a disposal area for waste/garbage generated on the facility. Portions of the site were also used to store aircraft parts and petroleum and as a pistol and skeet range	**Soil:** PAHs, pesticides, PCBs, metals, RAD **Groundwater:** Vinyl Chloride, Surface Water - VOCs, SVOCs, metals	Final ROD submitted September 2009. TCRA Completion Report submitted August 2009. Pre-Design field work in Fall 2009.	Recreational	TCRA to address radiological contamination and MPPEH conducted from 2006 - 2008. 790 cubic yards of radiologically contaminated soil and 105 discrete radiological items were removed from IR Site 1 and disposed of offsite. Former Firing-Range Berm and Debris Pit containing 54,503 MPPEH items or 11,500 lbs of MPPEH was also removed.
IR Site 2 (OU-4A)	West Beach Landfill and Wetlands	Constructed as a landfill for NAS Alameda and used from 1950's through 1978	**Soil/Groundwater:** PCBs, pesticides (dieldrin), dioxin/furans;bis-2-ethylhexyl phthalate; acenaphthene (a PAH); metals; RAD	Draft TCRA report submitted April 2009. PP should be finalized August 2009.	Recreational	TCRA to address radiological contamination conducted from 2006 - 2008. 48 cubic yards of radiologically contaminated soil and 11 discrete radiological items were removed from IR Site 2 and disposed of offsite.
IR Site 3 (OU-2B)	Abandoned Fuel Storage Area	Site of five aviation fuel storage tanks. Tanks cleaned and closed in place in 1987	**Soil:** TPH, lead **Groundwater:** TPH, lead	Revised OU2B Draft FS submitted September 2009. Final expected early 2010.	Residential and commercial/ industrial	DVE system in operation since 2007 to remove TPH. Successfully removed 115,000 pounds (lb.) of TPH at CAA 3; 4,000 lb removed at CAA 6; and 9,000 lb. removed at CAA 7.
IR Site 4 (OU-2B)	Building 360, Aircraft Engine Facility	Aircraft engine and airframe overhaul facility	**Soil:** lead, cadmium, PCBs, pesticides **Groundwater:** Chlorinated VOCs (TCE, TCA, DCE, DCA, VC), metals	Revised OU2B Draft FS submitted September 2009. Final FS expected early 2010.	Residential and commercial or light industrial	1) January 2009: Removal of OWS 163 adjacent to Bldg. 163. Approximately 47 cubic yards of soil removed from excavation. 2) A DNAPL source removal action utilizing three-phase heating occurred from 2006 to 2007. Removed approximately 2,000 lbs of total VOCs within IR Site 4. Reduced average total DNAPL groundwater concentration in Plume 4-2 from 56,000 ppb to 1,600 ppb.

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 5 (OU-2C)	Building 5, Aircraft Rework Facility	Aircraft component repair and maintenance	**Soil:** VOCs, Metals, RAD **Groundwater:** VOCs	Final FS expected December 2009. Radiological TCRA for storm/sewer lines expected to be completed in 2010. 6-phase heating TCRA ongoing	Commercial/ Industrial	1) A DNAPL source removal action utilizing six-phase heating occurred from 2005 to 2009. Removed approximately 3,250 lbs of total VOCs within IR Site 5. Reduced average total DNAPL groundwater concentration in Plume 5-1 from 54,000 ppb to 120 ppb and in Plume 5-3 from 28,000 ppb to 85 ppb. 2) TCRA for storm/sewer lines with RAD currently being conducted; for IR Sites 5 and 10, over 6,000 feet of piping removed and 18,000 cubic yards of soil removed through July 2009.
IR Site 6 (OU-1)	Building 41, Aircraft Intermediate Maintenance Facility	Seaplane Hangar and aircraft maintenance facility	**Groundwater**: DCE, PCE, TCE, vinyl chloride	RD/RAWP submitted May 2009. Remedial action being conducted.	Commercial/ industrial	DVE system and free product removal system operated between 2002 and 2004. In 2004, remaining piping and 1,100 tons of soil were removed
IR Site 7 (OU-1)	Navy Exchange Service Station	Most recently used as automotive repair and servicing facility; before that, the site of an incinerator	**Soil:** Lead **Groundwater:** TPH	Draft Final RD/RAWP submitted July 2009. Remedial action planned Summer/Fall 2009.	Residential	—
IR Site 8 (OU-1)	Building 114, Pesticide Storage Area	Building 191 used as storage for Public Works Dept. Building 391 used to store paints, degreasers, petroleum products, and hazardous waste	**Soil:** PCBs, pesticides **Groundwater:** TPH	Draft Final RD/RAWP submitted July 2009. Remedial action planned Summer/Fall 2009.	Residential	—

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 9 (OU-2A)	Building 410, Paint Stripping Facility	Corrosion Control Facility - paint stripping and aircraft cleaning	**Groundwater:** VOCs, TPH	Revised OU2A Draft FS submitted September 2009. Final expected early 2010.	Combination of business park/light industrial, open space, and civic/institutional support	1) 2002 ISCO pilot test 2) 2006 full scale ISCO on Site 9, shallow aquifer using Fenton's Reagent modified with chelated iron: average 70% reduction (DCE) and 73% reduction (VC) in wells with baseline concentrations greater than the MCL. VC was reduced to non-detect in a majority of wells with MCL exceedances. 3) 2006 full scale ISCO on Site 9, intermediate Aquifer using Fenton's Reagent modified with chelated iron: Average 41% reduction of DCA, and 33% reduction of VC.
IR Site 10 (OU-2C)	Building 400, Missile Rework Operations	Location used to repair and refurbish missile control systems and avionics.	**Soil:** RAD	Radiological TCRA for storm/sewer lines expected to be completed in 2010. Final RI report recommended no further action for IR Site 10 soil and groundwater (following completion of the TCRA).	Commercial/ Industrial	TCRA for storm/sewer lines with RAD currently being conducted; for IR Sites 5 and 10, over 6,000 feet of piping removed and 18,000 cubic yards of soil removed through July 2009.
IR Site 11 (OU-2B)	Building 14, Engine Test Cell	Aircraft and engine test facility including aircraft repair	**Groundwater:** VOCs	Revised OU2B Draft FS submitted September 2009. Final expected early 2010.	Residential and commercial or light industrial	–
IR Site 12 (OU-2C)	Building 10, Power Plant	From the late 1930s to the early 1970s, Building 10 was used as the power plant that generated steam and compressed air.	None	Final RI report recommended no further action for IR Site 12 soil and groundwater.	Commercial/ Industrial	–

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)

Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 13 (OU-2A)	Former Oil Refinery	Former site of historical oil refinery. Also includes building used for jet engine test cells.	**Soil:** PAHs **Groundwater:** VOCs, SVOCs related to Tarry Refinery Waste	Revised OU2A Draft FS submitted September 2009. Final expected early 2010.	Business park/light industrial, open space, and civic/ institutional support	—
IR Site 14 (OU-1)	Former Fire Fighter Training Area	Maintenance facilities and fire-fighter training area	**Groundwater:** VC	RD/RAWP submitted December 2008.	Recreational	Ongoing groundwater remediation using chemical oxidation from September 2008 to present. Reduced VC concentrations by around half (from a max of 390 µg/L) after first treatment; performed second round of treatment from February to April 2009 and awaiting treatment results.
IR Site 15 (OU-1)	Former Transformer Storage Area	Maintenance facilities used to decommission electrical transformers	None	NFA ROD signed June 2006.	Recreational (Portions of IR 15 are included in PBC-1 which was transferred to the ARRA in 2009)	—
IR Site 16 (OU-1)	Shipping Storage Container Area	Auto shop, storage sheds	**Groundwater:** VOC	RD/RAWP submitted May 2009. Remedial action being conducted.	Commercial/ industrial	—

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 17 (OU-4B)	Seaplane Lagoon	Ship and seaplane mooring	**Sediments:** Total PCBs, DDx, cadmium, lead, and chromium in sediment	RD finalized July 2008. RAWP to be finalized December 2009.	Commercial marina surrounded by a mixed-use marina-related district	Ongoing TCRA to remove debris piles on northern bank of Seaplane Lagoon; removed 45,000 tons of soil and debris (mostly Cal-hazardous waste due to metals) since Sept 2008; expected to remove an additional ~4,000 tons of soil and debris through Nov 2009
IR Site 18	Storm Sewers	N/A	N/A	No longer a site; storm sewers grouped with other IR Sites.	N/A	–
IR Site 19 (OU-2A)	Yard D-13, Hazardous Waste Storage	Permitted hazardous waste storage area	None	Revised OU2A Draft FS submitted September 2009. Final expected early 2010.	Combination of business park/light industrial, open space, and civic/institutional support	–
IR Site 20 (OU-4C)	Oakland Inner Harbor	Oakland Inner Harbor Channel is a major industrial waterway serving marine terminals and repair facilities in the Cities of Oakland and Alameda. The shoreline of IR 20 extends approx. 3,960 feet. There are four storm sewer outfalls along the IR 20 shoreline.	None	Final NFA ROD for IR Site 20 signed in October 2008.	Water taxi/ferry stop	Storm sewer lines removed and replaced and/or cleaned in 1990s.
R Site 21 (OU-2B)	Building 162, Ship Fitting and Engine Repair	Ship and aircraft maintenance	**Soil:** Metals **Groundwater:** VOCs	Revised OU2B Draft FS submitted August 2009. Final expected early 2010.	Residential and commercial or light industrial	–

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 22 (OU-2A)	Building 547, Former Service Station	Formerly a gasoline distribution and service station, with 3 USTs	**Soil:** Lead, benzene related to petroleum **Groundwater:** Petroleum	Revised OU2A Draft FS submitted September 2009. Final expected early 2010.	Combination of business park/light industrial, open space, and civic/institutional support	—
IR Site 23 (OU-2A)	Building 530, Missile Rework Operations	Missile control systems repair and refurbishment	**Soil:** Metals	Revised OU2A Draft FS submitted September 2009. Final expected early 2010.	Combination of business park/light industrial, open space, and civic/institutional support	-
IR Site 24 (OU-4B)	Pier Area	Ship Berthing	**Sediments:** PCBs and certain pesticides and metals	Proposed Plan issued in May 2009 recommended cleanup for northeastern corner of IR Site 24 and no action for the remainder of the site. Record of Decision expected in 2010	Commercial marina	Storm sewer lines removed and replaced and/or cleaned in 1990s.
IR Site 25 (OU-5)	Estuary Park and Coast Guard Housing Area	Used historically for military housing	**Soil:** PAH **Groundwater:** Benzene and naphthalene plume being addressed under the FISCA IR2/OU5 groundwater program	Final ROD for soil signed October 2007; Final ROD for groundwater issued September 2007. RD for soil LUC planned for October 2009. Final RD/RAWP for groundwater issued October 2008.	Residential	TCRA for Clover Park Playground completed in 2000; TCRA for North Housing and Estuary Park completed in 2002; over 66,700 cubic yards of PAH-contaminated soil removed.

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 26 (OU-6)	Western Hangar Zone	Four former aircraft hangars and aircraft washdown areas. Has AST, UST, OWS, and fuel lines.	**Groundwater:** DCE, TCE, VC	Final RD/RAWP submitted October 2008.	Mixed-use area (industrial, residential, commercial, and open space)	Ongoing groundwater remediation from July 2008 to present; reduced lateral footprint of total chlorinated VOC concentrations significantly (up to 50 µg/L reduction or 90% reduction) after two chemical oxidation treatments. Additional treatment, which may include in situ bioaugmentation, is planned to further reduce chlorinated VOC concentrations.
IR Site 27 (OU-6)	Dock Zone	historically used for ship docking, repair, and staging, and storing painting equipment and materials; vehicle wash-down; and chemical storage and handling	**Groundwater:** VOCs	Final RD/RAWP submitted June 2009. July 2009 - began Remedial Action.	Residential, recreational, light industrial and commercial	—
IR Site 28 (OU-6)	Todd Shipyards	Property used by Todd Shipyards for ship repair	**Soil:** PAHs, arsenic, and lead **Groundwater:** Copper	Final RD/RAWP expected September 2009.	Recreational	Pilot test in 2009 removed 19 cubic yards of soil and treated 21,000 gallons of groundwater by use of an innovative technology (MRC) for immobilizing metals.
IR Site 29 (OU-4C)	Skeet Range	Had 2 shooting ranges (Northern and Southern) actively used for 30 to 40 years until they were closed in 1993. Lead shot was discharged from guns toward clay pigeon targets projected westerly over San Francisco Bay	None	Final NFA ROD signed September 2005.	Recreational and open space	—

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 30 (OU-5)	Woodstock Child Development Center and Island High School	Formerly used for military housing, storage, parking, and for residential and educational purposes	**Groundwater:** Benzene and naphthalene addressed under the OU5/FISCA IR-02 groundwater program	Final ROD for soil expected September 2009; NFA recommended. Groundwater being addressed as part of OU5/FISCA IR-02 remedial action program.	Educational for public benefit	TCRA in November 2004 to remove 50 cubic feet of shallow soil and addition of soil cover materials.
IR Site 31 (OU-5)	Marina Village Housing	Served as a private airfield, military housing, warehouses, and storage.	**Groundwater:** Benzene and naphthalene addressed under the OU5/FISCA IR-02 groundwater program	Final NFA ROD for soil signed October 2008. Groundwater being addressed as part of OU5/FISCA IR-02 remedial action program.	Residential	—
IR Site 32 (no OU)	Northwest Ordnance Storage Area	Storage for diesel fuel and gasoline; runways and bunker	**Soil:** RAD(Ra-226) **Groundwater:** VOCs (VC, TCE, Chlorobenzene)	Revised draft RI/FS expected December 2009 to address additional RAD contamination found in soil.	Recreational	TCRA to address RAD contamination conducted from 2006 - 2008. 222 cubic yards of RAD contaminated soil and 37 discrete radiological items were removed from IR Site 32 and disposed of offsite.
IR Site 33 (no OU)	South Tarmac and Runway Wetlands	Used as tarmac, former runway, and wetlands area	**Soil:** PAHs (in tarmac/runway portion only)	Draft SI submitted May 2008. Supplemental SI WP is being prepared.	Wetland/open space; located in close proximity to least tern sanctuary	—
IR Site 34 (no OU)	Former Northwest Shop Area	Maintenance shops	**Soil:** VOCs, PAHs, PCBs, pesticides, TPH, metals	Final FS expected Dec. 2009.	Recreational	—

TABLE 6-1: ALAMEDA POINT SITE/AREAS DESCRIPTION (CONTINUED)
Alameda Point, Alameda, California

IR Site Number/ Operable Unit	Site Name	Historic Use	Current Contaminants of Interest	Current CERCLA Status	Planned Future Reuse	Work Performed
IR Site 35 (no OU)	West Housing Area	Residential, office space, pesticide use, chemical storage, fuel storage, and hazardous material storage	**Soil:** PAHs, heptachlor, lead, and TPH	Final ROD expected September 2009. RA expected to begin January 2010 after RD/RAWP completed.	Mixed-use area (industrial, residential, commercial, and open space)	1) TCRA for storm sewer sediment removal between 1995-1997 removed 194,000 linear feet of storm drain lines. 2) Previous PAH removal action: 7,600 tons of PAH-impacted soil removed in 2003. 3) Previous lead removal action: 1,620 cubic yards of lead-impacted soil were removed in 2002-2003. Pesticide/fertilizer storage shed (Building 195) and 203 cubic yards of soil was removed in 2004.

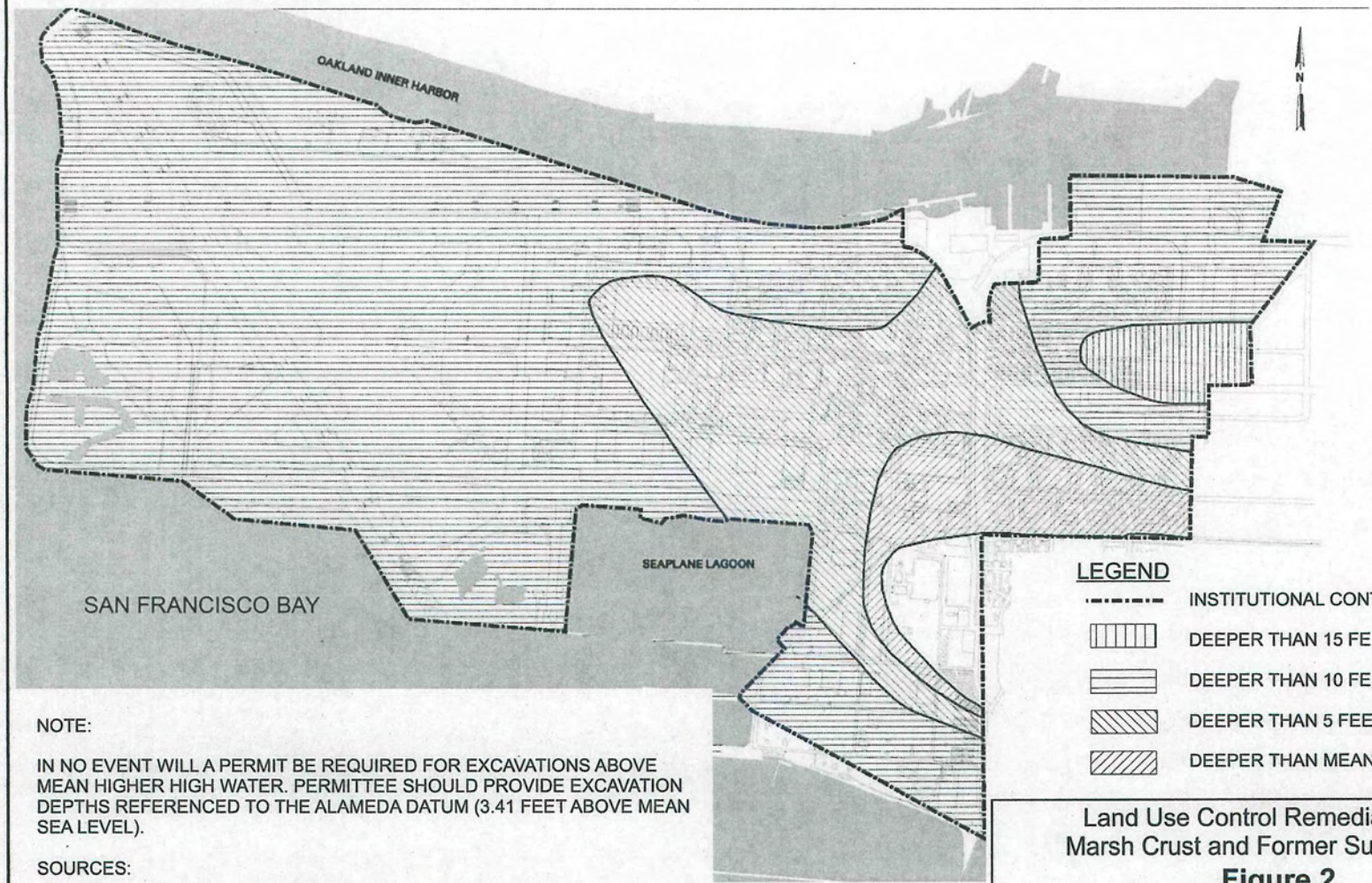
Glossary:

ARRA	Alameda Reuse and Redevelopment Authority
AST	Aboveground storage tank
CAA	Corrective action area
COC	Contaminant of Concern
DCA	Dichloroacetylene
DCE	Dichloroethene
DDT	Dichlorodiphenyltrichloroethane
DDx	Breakdown products of DDT
DNAPL	Dense nonaqueous phase liquid
DVE	Dual phase vapor extraction
FISCA	Fleet and Industrial Supply Center Oakland, Alameda Facility/Alameda Annex
FS	Feasibility Study
HHRA	Human health risk assessment
IR	Installation Restoration
ISCO	In situ chemical oxidation
LUC	Land Use Control
MCL	Maximum contaminant level
MPPEH	Material potentially presenting an explosive hazard
MRC	Metals Remediation Compound
NFA	No further action
OU	Operable Unit
OWS	Oil/Water separator
PAH	Polycyclic aromatic hydrocarbon
PBC	Public benefit conveyance
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PP	Proposed Plan
Ppb	Parts per billion
RAD	Radionuclides
RD/RAWP	Remedial Design/Remedial Action Work Plan
ROD	Record of Decision
SI	Site Inspection
SVOC	Semi-volatile organic compounds
TCA	Trichloroethane
TCE	Trichloroethene
TCRA	Time-critical removal action
TPH	Total petroleum hydrocarbons
UST	Underground storage tank
VC	Vinyl chloride
VOC	Volatile organic compounds
WP	Work plan

ATTACHMENT B-2

MAP ON EXTENT OF MARSH CRUST

(1 page)



LEGEND

- INSTITUTIONAL CONTROL BOUNDARY
- DEEPER THAN 15 FEET
- DEEPER THAN 10 FEET
- DEEPER THAN 5 FEET
- DEEPER THAN MEAN HIGHER HIGH TIDE

NOTE:

IN NO EVENT WILL A PERMIT BE REQUIRED FOR EXCAVATIONS ABOVE MEAN HIGHER HIGH WATER. PERMITTEE SHOULD PROVIDE EXCAVATION DEPTHS REFERENCED TO THE ALAMEDA DATUM (3.41 FEET ABOVE MEAN SEA LEVEL).

SOURCES:

MAP BASED ON "FINAL FEASIBILITY STUDY FOR THE MARSH CRUST AND GROUNDWATER AT THE FLEET INDUSTRIAL SUPPLY CENTER OAKLAND ALAMEDA FACILITY/ALAMEDA ANNEX AND FEASIBILITY STUDY FOR THE MARSH CRUST AND FORMER SUBTIDAL AREA AT ALAMEDA POINT" MARCH 31, 2000. PREPARED FOR THE DEPARTMENT OF THE NAVY BY TETRA TECH ENVIRONMENTAL MANAGEMENT, INC.

CITY OF ALAMEDA MARSH CRUST EXCAVATION ORDINANCE NO. 2824, DATED FEBRUARY 16, 2000

0 1100 2200

Land Use Control Remedial Design
Marsh Crust and Former Subtidal Area

Figure 2

Extent and Threshold Depth of Institutional Controls

Former FISCA and Alameda Point, Alameda, CA

Bechtel Environmental, Inc.
CLEAN 3 Program

Date: 4/21/08
File No.: 086L14810
Job No.: 23818-086
Rev No.: F

ATTACHMENT B-3

SITE PROGRESS – ALAMEDA POINT RAB MEETING – OCTOBER 1, 2009

(1 page)

Site Progress – Alameda Point RAB Meeting – October 1, 2009

Site	Activity
OU-1 6, 7, 8, 16	• Finalized planning documents for remedial action
OU-2A 9, 13, 19, 22, 23	• Preparing Revised Draft Feasibility Study • Implemented recommendations in the Data Gaps Investigation Report (soil and groundwater sampling)
OU-2B 3, 4. 11. 12	• Preparing pre-draft work plan for groundwater treatability study • Preparing Revised Draft Feasibility Study • Monitoring well installation near Building 163 • Implemented recommendations in the Data Gaps Investigation Report (soil and groundwater sampling)
1	• Finalized Record of Decision
2	• Completed Public Comment Period for Proposed Plan
5, 10	• Continued Storm Drain TCRA
14	• Preparing for additional groundwater monitoring
17	• Completing Debris Removal • Preparing Remedial Design for Dredging
24	• Preparing Record of Decision
26	• Preparing for additional groundwater monitoring
27	• Beginning Remedial Action (ISCO)
28	• Preparing Remedial Design (metals immobilization)
30	• Finalized Record of Decision
32	• Preparing Revised Draft RI/FS Planning Documents
34	• Preparing Draft Final Feasibility Study and Wetlands Evaluation
35	• Preparing Record of Decision

ATTACHMENT B-4

SITE 1 (OU-3) GROUNDWATER PLUME INFORMATION

(12 pages)

Alameda Point RAB Meeting – October 1, 2009

SITE 1 (OU-3) VOC PLUME BACKGROUND

A VOC plume was identified in the OU-3 RI report as an area requiring remediation. It consists of an area 200 by 100 feet near the western shoreline, where elevated concentrations of VOCs were detected. Groundwater samples were analyzed from 23 locations in the VOC plume area. A data gap investigation was performed at OU-3 (Tetra Tech 2001) to delineate the eastern boundary and assess whether contaminated groundwater is impacting the shoreline in concentrations that would adversely impact aquatic receptors in San Francisco Bay. Eight additional locations were sampled for groundwater.

Site 1 was selected for demonstration of a funnel and gate system to treat groundwater contaminated with chlorinated solvents using in situ reactive iron and petroleum hydrocarbons using biosparging. It was installed in December 1996. Groundwater sampling was conducted to evaluate VOC concentrations and assess the performance of the treatment systems. Groundwater was sampled for four quarters at forty-six locations.

GROUNDWATER MONITORING

The Basewide Groundwater Monitoring Program includes 19 first water bearing zone wells and eight second water bearing zone wells at Site 1. Another eight groundwater monitoring wells are used for quarterly groundwater-level measurement only.

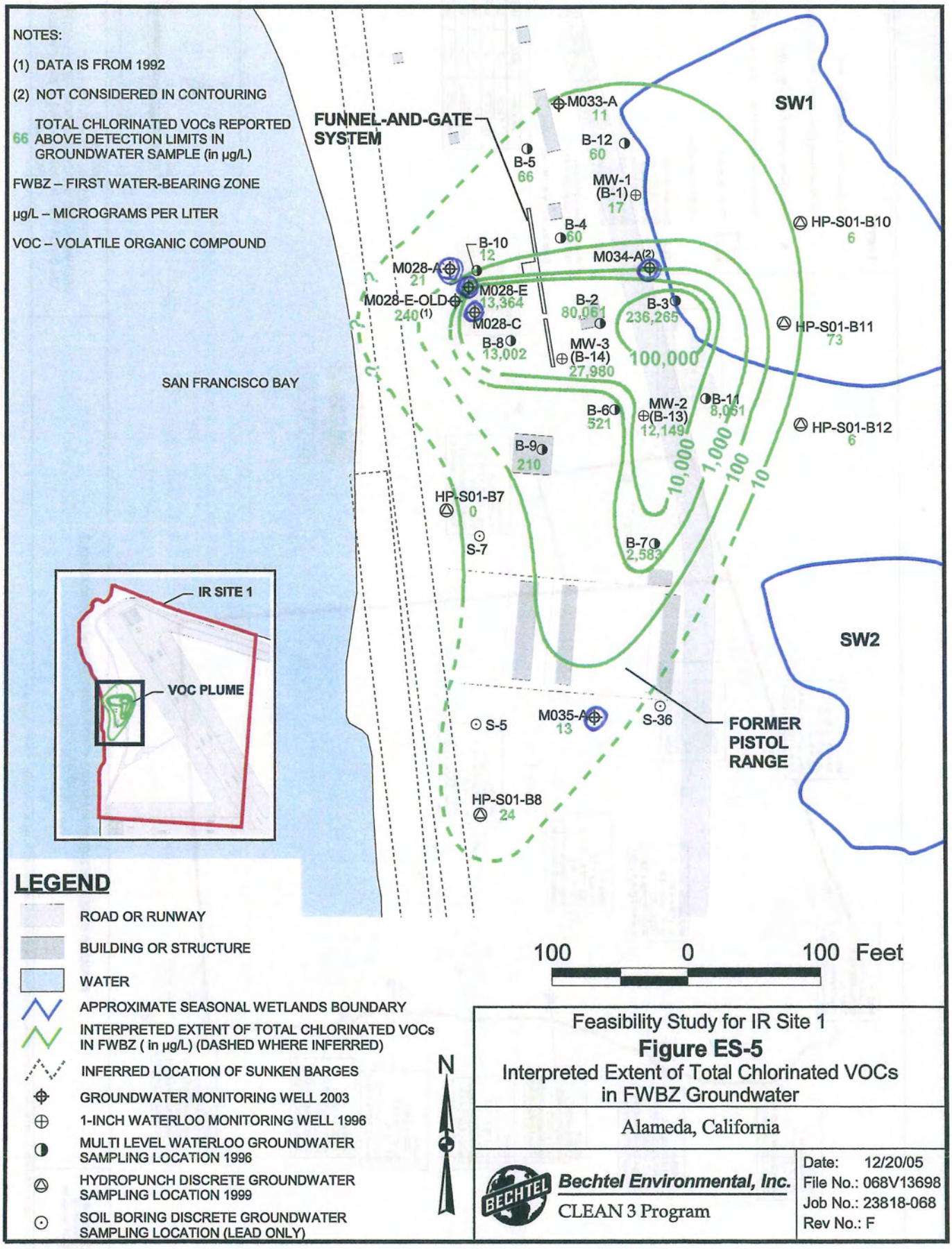
The Basewide Groundwater Monitoring Program samples the following Site 1 wells in the VOC plume area:

- M028-A
- M028-C
- M028-E
- M034-A
- M035-A

These wells have been sampled semiannually since the summer 2002. Since 2002, the highest VOC with the highest concentrations was vinyl chloride at well M028-E. Well M028-E is screened in the lower portion of the FWBZ in fill material, about 100 feet from the shoreline. Vinyl chloride is not particularly toxic in the marine environment with a value of 525 micrograms per liter established as the Ambient Water Quality Criteria (AWQC) for the protection of saltwater organisms.

CONCLUSION

Groundwater monitoring data indicate a localized VOC groundwater plume in the first water bearing zone. Available data are more than sufficient to support evaluation and selection of a groundwater remedial alternative. The Navy's engineering team have reevaluated all the data and believe that the areas containing the highest VOC concentrations may be smaller in area and in thickness ("sourcelets") than previously thought. Migration of contaminated groundwater to the Bay at levels that would cause an exceedance of AWQC is not likely. The Navy's pre-design investigation will include a thorough groundwater sampling effort to help estimate the mass and three-dimensional distribution of VOCs. These additional data will help ensure successful groundwater cleanup. Investigation details will be presented in the Site 1 Pre-design Work Plan planned for submittal in Fall 2009.



Feasibility Study for IR Site 1

Figure ES-5

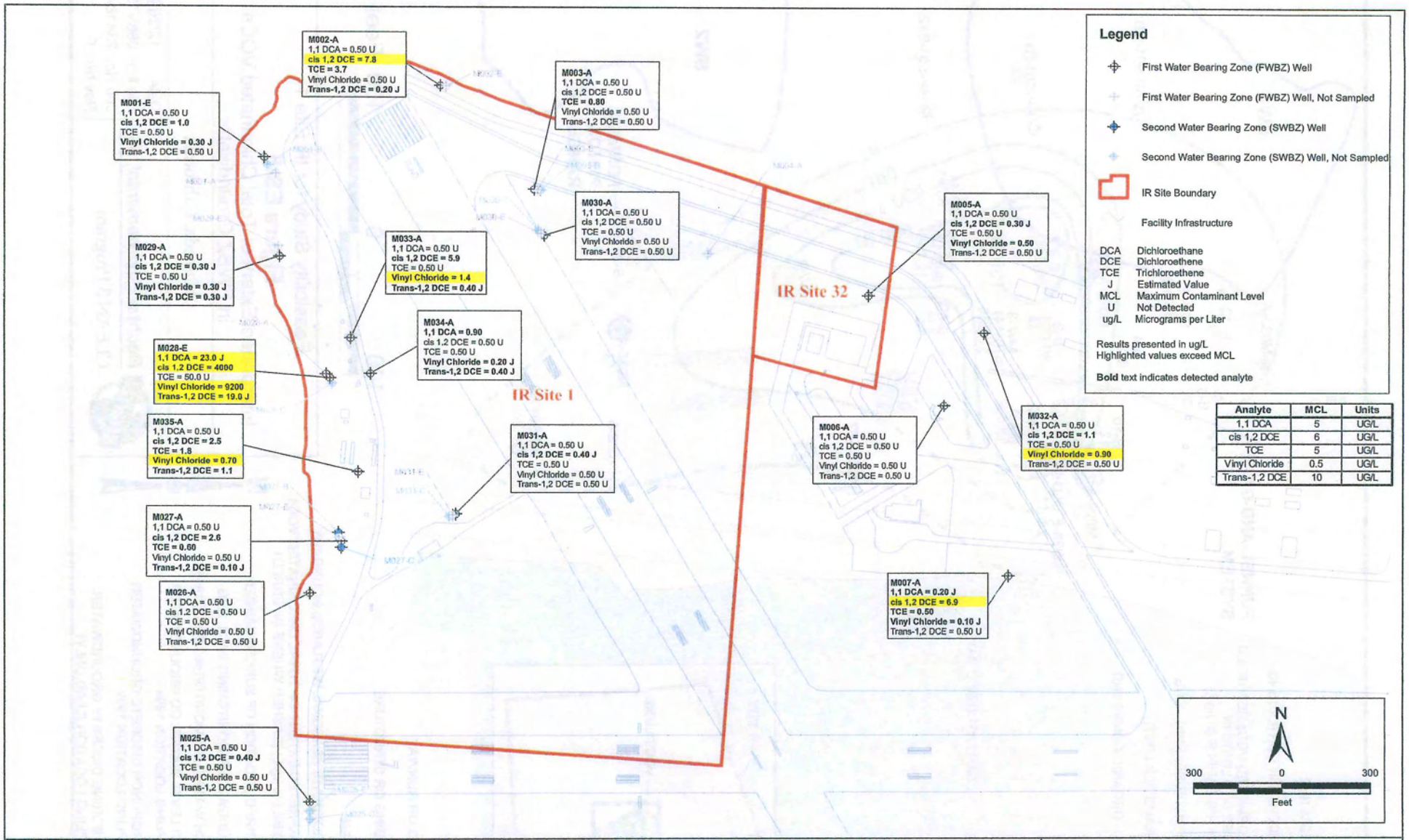
Interpreted Extent of Total Chlorinated VOCs in FWBZ Groundwater

Alameda, California

Bechtel Environmental, Inc.

CLEAN 3 Program

Date: 12/20/05
File No.: 068V13698
Job No.: 23818-068
Rev No.: F



Analyte	MCL	Units
1,1 DCA	5	UG/L
cis 1,2 DCE	6	UG/L
TCE	5	UG/L
Vinyl Chloride	0.5	UG/L
Trans-1,2 DCE	10	UG/L

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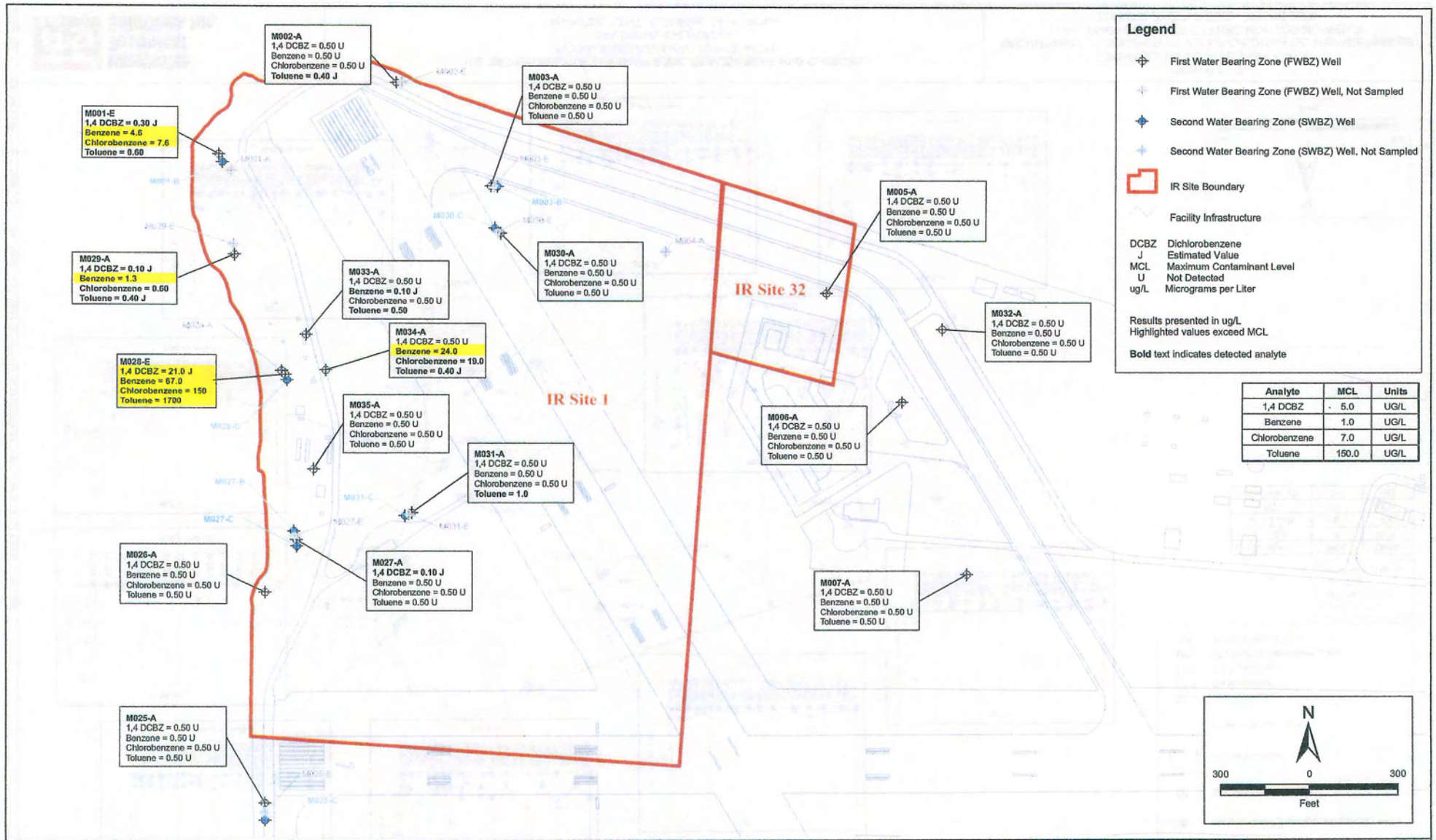
ALAMEDA BASEWIDE 2008 SEMIANNUAL GROUNDWATER MONITORING REPORT
ALAMEDA POINT
ALAMEDA, CALIFORNIA

FIGURE 7.1-3
OPERABLE UNIT 3 - IR SITES 1 & 32
GROUNDWATER CONCENTRATIONS OF SELECTED
CHLORINATED HYDROCARBONS IN FWBZ WELLS
FALL 2008

G:\ArcGIS\Navy\ALMDA\PROJECTS\07033.0015 CTO-015 Basewide Ground Water Monitoring\2008 Maps\Plume Maps\Fall 08 1&32 Chlorinated HC Map.mxd 7/31/2009 ITSI-WC Eloise Anderson



Analyte	MCL	Units
1,4 DCBZ	5.0	UG/L
Benzene	1.0	UG/L
Chlorobenzene	7.0	UG/L
Toluene	150.0	UG/L

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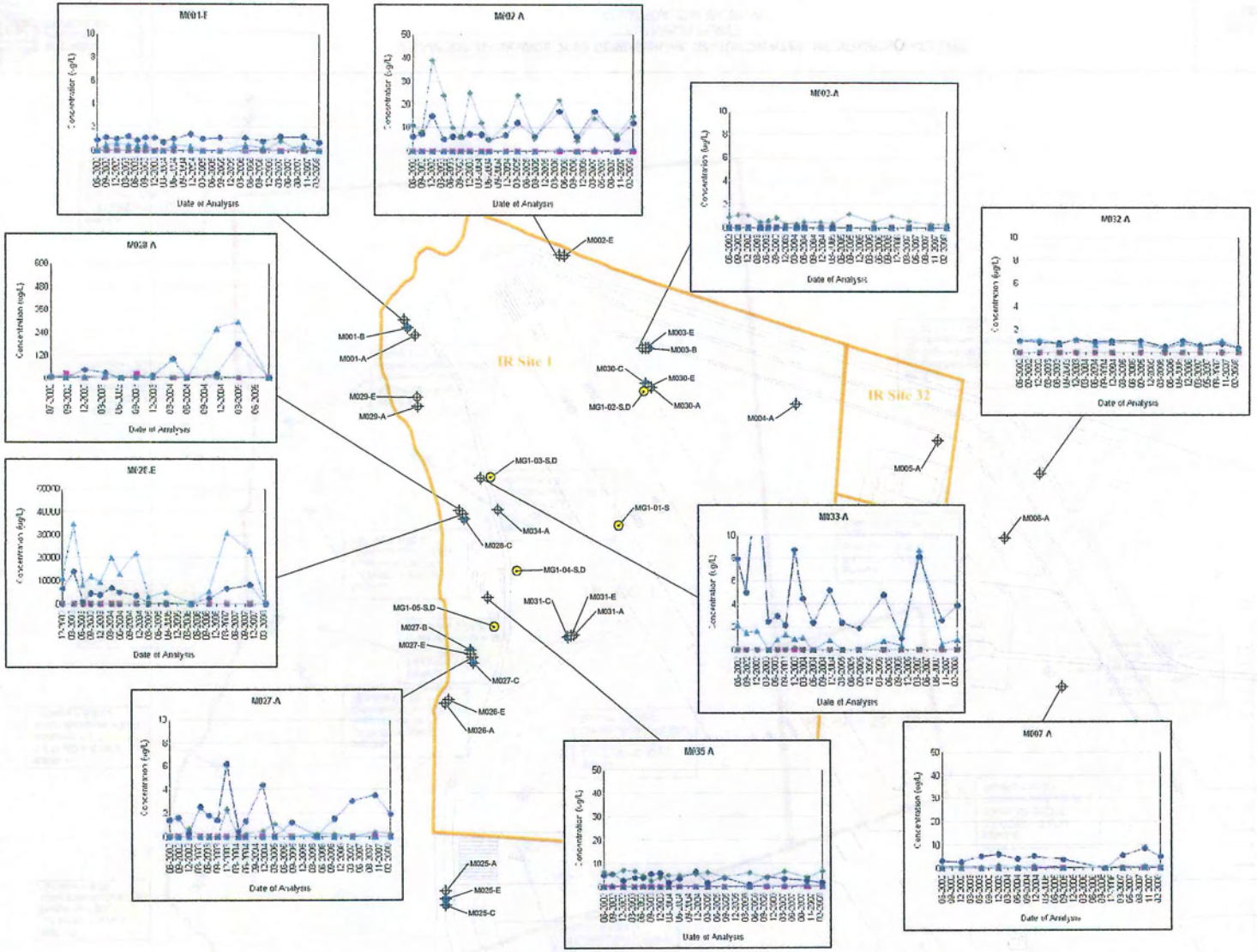
ALAMEDA BASEWIDE 2008 SEMIANNUAL GROUNDWATER MONITORING REPORT
ALAMEDA POINT
ALAMEDA, CALIFORNIA

FIGURE 7.1-4
OPERABLE UNIT 3 - IR SITES 1 & 32
GROUNDWATER CONCENTRATIONS OF SELECTED
AROMATIC HYDROCARBONS ABOVE CRITERIA
FALL 2008

G:\Arc GIS\Navy\ALMDA\PROJECTS\07033.0015 CTO-015 Basewide Ground Water Monitoring\2008 Maps\Plume Maps\Fall 08 1&32 Aromatic HC Map.mxd 7/29/2009 ITSI-WC Eloise Anderson



Analyte	MCL	Units
1,1 DCA	5	UG/L
cis 1,2 DCE	6	UG/L
TCE	5	UG/L
Vinyl Chloride	0.5	UG

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PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA
ALAMEDA POINT, ALAMEDA, CALIFORNIA

FIGURE 7.1-7
OPERABLE UNIT 3 - IR SITES 1 AND 32
GROUNDWATER CONCENTRATIONS OF CHLORINATED HYDROCARBONS
OVER TIME FOR SELECTED FWBZ MONITORING WELLS
SUMMER 2002 THROUGH SPRING 2008

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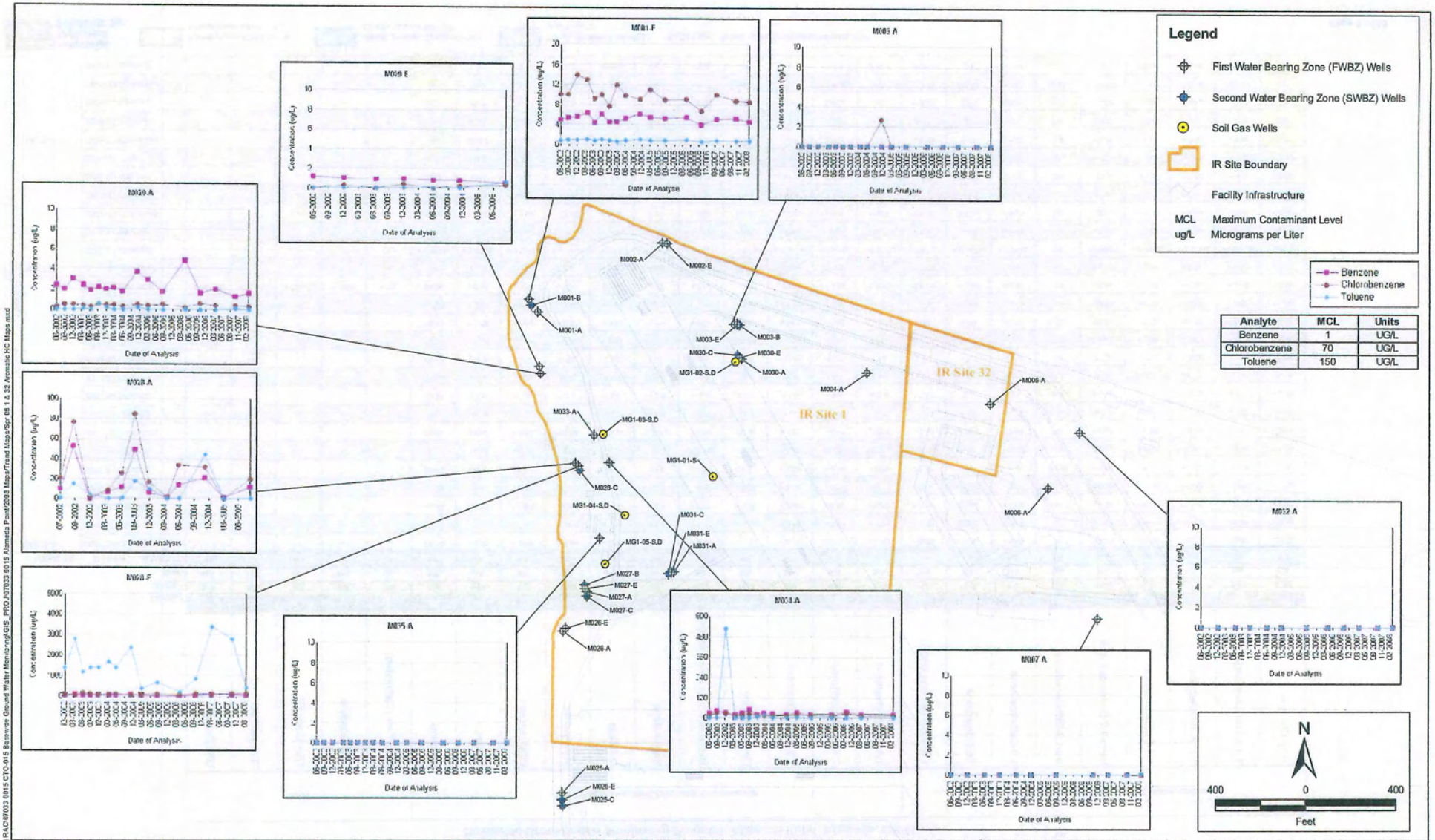

Analyte	MCL	Units
Benzene	1	UG/L
Chlorobenzene	70	UG/L
Toluene	150	UG/L

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FIGURE 7.1-8
OPERABLE UNIT 3 - IR SITES 1 AND 32
GROUNDWATER CONCENTRATIONS OF AROMATIC HYDROCARBONS
OVER TIME FOR SELECTED FWBZ MONITORING WELLS
SUMMER 2002 THROUGH SPRING 2008

Table 7.1-3

Groundwater Sample Analytical Results: Total Petroleum Hydrocarbons and Volatile Organic Compounds at Operable Unit 3 - IR Sites 1 and 32

Summer 2002 through Spring 2008

Basewide Groundwater Monitoring Program, Alameda Point, Alameda, California

			TPH					Commonly Detected Aromatic Compounds											Commonly Detected Chlorinated Hydrocarbons								
			TPH-Diesel	TPH-Jet Fuel	TPH-Motor Oil	TPH-Gasoline	Total TPH (Calculated)	Benzene	Toluene	Ethylbenzene	M,P-xylenes	O-xylene	Naphthalene	Methyl tert-butyl ether (MTBE)	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Tetrachloroethene (PCE)	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride
		Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
		MCL:	NA	NA	NA	NA	NA	1.0	150	300	1750	1750	NA	13.0	70.0	600	NA	5.0	5.0	5.0	6.0	6.0	10.0	5.0	0.50	200	0.50
		BV:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Well No.	Event AWQC:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RWQ2	M027-A	2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.0	0.20 J	< 0.50	< 0.50	< 0.50	< 0.50
		2006 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	1.5	0.10 J	< 0.50	< 0.50	< 0.50	< 0.50
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	0.10 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	0.50	< 0.50	4.4	0.40 J	< 0.50	0.20 J	< 0.50	< 0.50
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0 J	< 0.50	< 0.50	< 0.50	< 0.50	0.10 J	< 0.50	0.20 J	< 0.50	1.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 01 (Spring)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.45 J	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	1.1	2.3	< 1.0	6.2	0.47 J	< 1.0	< 0.50	< 1.0	< 0.50
		2003 03 (Fall)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	< 0.50 UJ	< 0.50	2.5	0.20 J	< 0.50	0.20 J	< 0.50	< 0.50
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	0.50 J	< 0.50	< 0.20 J	0.50	0.70	< 0.50	0.30 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 50.0	< 300	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
	M027-E	2005 02 (Summer)	-	-	-	-	-	< 0.50	0.60	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	0.10 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 01 (Spring)	-	-	-	-	-	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 2.0 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	1.5	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.9	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7	0.20 J	< 0.50	< 0.50	< 0.50	< 0.50
		2004 01 (Spring)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.27 J	< 1.0	2.9	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 03 (Fall)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
	M028-A	2005 02 (Summer)	-	-	-	-	-	12.0	0.40 J	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	20.0	4.0	0.30 J	2.0	< 0.50	0.60	< 0.50	1.8	< 0.50	1.9	< 0.50	< 0.50	1.1
		2005 01 (Spring)	-	-	-	-	-	1.0 J	< 2.0	< 2.0	< 2.0	< 2.0	< 8.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3.1	< 2.0	180	< 2.0	< 2.0	< 2.0	< 2.0	300
		2004 04 (Winter)	-	-	-	-	-	21.0	45.0	8.5	23.0	8.6	5.1	< 0.50	32.0	4.4	0.40 J	3.2	< 0.50	0.90	< 0.50	20.0	< 0.50	6.8	0.30 J	< 0.50	260
		2004 02 (Summer)	-	-	-	-	-	14.0	0.60	1.4	< 0.50	< 0.50	< 2.0	< 0.50	34.0	7.3	0.40 J	3.9	< 0.50	< 0.50	< 0.50	0.80	< 0.50	2.4	< 0.50	< 0.50	1.0
		2004 01 (Spring)	-	-	-	-	-	1.9	0.23 J	0.25 J	0.42 J	0.46 J	< 2.0	< 5.0	1.6	0.44 J	< 1.0	0.25 J	0.28 J	2.1	< 1.0	100	0.25 J	0.02 J	< 0.50	< 1.0	190

Innovative Technical Solutions, Inc.

Result exceeds Maximum Contaminant Level (MCL)

Result exceeds Ambient Water Quality Criteria (AWQC)

Result exceeds both MCL and AWQC

Bold Text: Result exceeds background value (BV)

Table 7.1-3

Groundwater Sample Analytical Results: Total Petroleum Hydrocarbons and Volatile Organic Compounds at Operable Unit 3 - IR Sites 1 and 32

Summer 2002 through Spring 2008

Basewide Groundwater Monitoring Program, Alameda Point, Alameda, California

			TPH					Commonly Detected Aromatic Compounds											Commonly Detected Chlorinated Hydrocarbons								
			TPH-Diesel	TPH-Jet Fuel	TPH-Motor Oil	TPH-Gasoline	Total TPH (Calculated)	Benzene	Toluene	Ethylbenzene	M,P-xylenes	O-xylene	Naphthalene	Methyl tert-butyl ether (MTBE)	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Tetrachloroethene (PCE)	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride
		Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
		MCL:	NA	NA	NA	NA	NA	1.0	150	300	1750	1750	NA	13.0	70.0	600	NA	5.0	5.0	5.0	6.0	6.0	10.0	5.0	0.50	200	0.50
		BV:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Well No.	Event AWQC:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SWMZ	M027-C	2008 01 (Spring)	-	-	-	-	-	2.3	< 0.50	0.20 J	0.30 J	< 0.50	< 2.0	< 0.50	3.3	1.2	< 0.50	0.70	0.20 J	1.1	< 0.50	60.0	0.20 J	0.40 J	0.10 J	< 0.50	46.0
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 UJ	< 1.0	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	0.70	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 50.0	< 300	< 0.50	0.20 J	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
	M028-C	2008 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 01 (Spring)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 UJ	< 1.0	< 0.50	< 1.0	< 0.50
		2003 03 (Fall)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 50.0	< 300	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
	M030-C	2008 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0 UJ	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.80	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

ITSI Innovative Technical Solutions, Inc.

Result exceeds Maximum Contaminant Level (MCL)

Result exceeds Ambient Water Quality Criteria (AWQC)

Result exceeds both MCL and AWQC

Bold Text: Result exceeds background value (BV)

Table 7.1-3

Groundwater Sample Analytical Results: Total Petroleum Hydrocarbons and Volatile Organic Compounds at Operable Unit 3 - IR Sites 1 and 32

Summer 2002 through Spring 2008

Basewide Groundwater Monitoring Program, Alameda Point, Alameda, California

			TPH					Commonly Detected Aromatic Compounds											Commonly Detected Chlorinated Hydrocarbons								
			TPH-Diesel	TPH-Jet Fuel	TPH-Motor Oil	TPH-Gasoline	Total TPH (Calculated)	Benzene	Toluene	Ethylbenzene	M,P-xylenes	O-xylene	Naphthalene	Methyl tert-butyl ether (MTBE)	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Tetrachloroethene (PCE)	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride
		Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
		MCL:	NA	NA	NA	NA	NA	1.0	150	300	1750	1750	NA	13.0	70.0	600	NA	5.0	5.0	5.0	6.0	6.0	10.0	5.0	0.50	200	0.50
		BV:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Well No.	Event	AWQC:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FWBZ	M033-A	2004 01 (Spring)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.5	0.49 J	< 1.0	< 0.50	< 1.0	1.1
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.23 J	< 1.0	8.7	0.42 J	< 1.0	0.27 J	< 1.0	0.97
		2003 03 (Fall)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2	< 1.0	< 1.0	< 0.50	< 1.0	1.4
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.0	0.30 J	< 1.0	< 0.50	< 1.0	0.94
		2003 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.50 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 UJ	< 0.50	2.5	0.20 J	< 0.50	< 0.50	< 0.50	< 0.50
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	0.50 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	16.0	0.80	< 0.50	< 0.50	< 0.50	1.7
		2002 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.0	< 0.50	< 0.50	< 0.30 J	< 0.50	1.5
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 140	< 300	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.9	0.50 J	< 0.50	0.30 J	< 0.50	2.2
	M034-A	2008 01 (Spring)	-	-	-	-	-	20.0	< 1.5	4.3	12.0	1.4	2.7	< 0.50	12.0	2.2	0.60	2.3	< 0.50	< 0.50	< 0.50	0.80	0.40 J	0.20 J	< 0.50	< 0.50	1.3
		2007 01 (Spring)	-	-	-	-	-	21.0	0.70	4.6	14.0	1.6	1.8 J	< 0.50	9.7	2.4	0.50	1.9	< 0.50	< 0.50	< 0.50	0.90	0.40 J	0.30 J	< 0.50	< 0.50	1.7
		2006 03 (Fall)	-	-	-	-	-	38.0	0.80	0.70	4.8	0.30 J	0.90 J	< 0.50	22.0	2.3	0.80	3.3	< 0.50	< 0.50	< 0.50	0.20 J	0.40 J	0.50	< 0.50	< 0.50	0.20 J
		2006 01 (Spring)	-	-	-	-	-	19.0	1.9	7.3	23.0	3.2	8.6	< 0.50	11.0	4.8	0.70	2.9	< 0.50	< 0.50	0.20 J	1.2	0.50	0.30 J	< 0.50	< 0.50	2.2
		2005 02 (Summer)	-	-	-	-	-	21.0	0.80	0.60	2.7	0.30 J	0.90 J	< 0.50	14.0	1.3	0.80	2.5	< 0.50	< 0.50	< 0.50	0.20 J	0.30 J	0.30 J	< 0.50	< 0.50	< 0.50
		2005 01 (Spring)	-	-	-	-	-	35.0	2.8	11.0	35.0	6.4	14.0	< 0.50	17.0	6.6	0.90	4.2	< 0.50	< 0.50	0.40 J	1.1	0.50	0.50	< 0.50	< 0.50	2.1
		2004 04 (Winter)	-	-	-	-	-	21.0	0.80	1.6	7.2	0.70	6.3	< 0.50	13.0	3.5	0.70	3.3	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	0.50	< 0.50	< 0.50	0.40 J
		2004 02 (Summer)	-	-	-	-	-	27.0	0.50	0.60	6.6	0.20 J	9.5	< 0.50	14.0	1.9	0.60	2.6	< 0.50	< 0.50	< 0.50	0.40 J	0.30 J	0.30 J	< 0.50	< 0.50	0.40 J
		2004 01 (Spring)	-	-	-	-	-	31.0	18.0	12.0	33.0	10.0	22.0	< 5.0	13.0	6.0	0.67 J	3.3	< 1.0	< 1.0	0.39 J	1.2	0.48 J	0.58 J	< 0.50	< 1.0	4.0
		2003 04 (Winter)	-	-	-	-	-	21.0	7.6	5.9	20.0	4.1	29.0	< 5.0	13.0	4.9	0.74 J	3.4	< 1.0	< 1.0	0.20 J	0.86 J	0.41 J	0.40 J	< 0.50	< 1.0	< 0.50
		2003 03 (Fall)	-	-	-	-	-	49.0	1.0	2.6	14.0	0.40 J	24.0	< 5.0	23.0	2.2	0.69 J	3.4	< 1.0	< 1.0	< 1.0	< 1.0	0.39 J	1.6	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	30.0	0.70 J	1.4	7.4	0.31 J	20.0	< 5.0	14.0	1.7	0.51 J	2.3	< 1.0	< 1.0	< 1.0	0.32 J	0.23 J	0.35 J	< 0.50	< 1.0	0.43 J
		2003 01 (Spring)	-	-	-	-	-	19.0	0.90	7.7	19.0	1.1	17.0 J	< 0.50	12.0	4.3	0.80	3.3	< 0.50	< 0.50 UJ	< 0.50	0.90	0.40 J	< 0.50	< 0.50	< 0.50	0.50
		2002 04 (Winter)	-	-	-	-	-	35.0	530	16.0	50.0	22.0	63.0	< 1.0	25.0	9.2	1.0	5.4	< 1.0	0.70 J	2.9	32.0	1.0 J	2.0	< 1.0	< 1.0	65.0
		2002 03 (Fall)	-	-	-	-	-	45.0	1.7	6.5	29.0	1.6	46.0	< 0.50	28.0	3.4	0.80	4.5	< 0.50	< 0.50	< 0.50	< 0.50	0.40 J	2.2	< 0.50	< 0.50	< 0.50
		2002 02 (Summer)	46.0 J	190 J	< 300 UJ	490	726	30.0	1.2	4.0	10.0	0.40 J	82.0	< 0.50	13.0	2.6	0.60	2.6	< 0.50	< 0.50	< 0.50	0.40 J	0.30 J	0.50 J	< 0.50	< 0.50	0.50 J
	M035-A	2008 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.60	6.7	< 0.50	1.8	0.90	< 0.50	< 0.50	< 0.50	0.30 J
		2007 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.1	0.20 J	2.7	1.8	< 0.50	0.10 J	< 0.50	0.90
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 UJ	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.60	6.6	0.20 J	3.3	1.9	< 0.50	< 0.50	< 0.50	0.60

Innovative Technical Solutions, Inc.

Result exceeds Maximum Contaminant Level (MCL)

Result exceeds Ambient Water Quality Criteria (AWQC)

Result exceeds both MCL and AWQC

Bold Text: Result exceeds background value (BV)

Table 7.1-3

Groundwater Sample Analytical Results: Total Petroleum Hydrocarbons and Volatile Organic Compounds at Operable Unit 3 - IR Sites 1 and 32

Summer 2002 through Spring 2008

Basewide Groundwater Monitoring Program, Alameda Point, Alameda, California

			TPH					Commonly Detected Aromatic Compounds											Commonly Detected Chlorinated Hydrocarbons								
			TPH-Diesel	TPH-Jet Fuel	TPH-Motor Oil	TPH-Gasoline	Total TPH (Calculated)	Benzene	Toluene	Ethylbenzene	M,P-xylenes	O-xylene	Naphthalene	Methyl tert-butyl ether (MTBE)	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Tetrachloroethene (PCE)	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride
		Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
		MCL:	NA	NA	NA	NA	NA	1.0	150	300	1750	1750	NA	13.0	70.0	600	NA	5.0	5.0	5.0	6.0	6.0	10.0	5.0	0.50	200	0.50
		BV:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Well No.	Event AWQC:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FWBZ	M035-A	2006 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.30 J	3.9	0.30 J	4.1	2.8	< 0.50	0.30 J	< 0.50	0.60
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.40 J	6.1	< 0.50	0.90	0.30 J	< 0.50	< 0.50	< 0.50	< 0.50
		2005 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.10 J	4.3	0.20 J	3.8	3.2	< 0.50	< 0.50	< 0.50	< 0.50
		2005 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.50	6.3	< 0.50	1.8	1.1	< 0.50	< 0.50	< 0.50	< 0.50
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.30 J	5.5	0.40 J	6.5	5.1	< 0.50	0.20 J	< 0.50	0.40 J
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.40 J	5.0	0.20 J	3.5	2.5	< 0.50	< 0.50	< 0.50	0.40 J
		2004 01 (Spring)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	0.29 J	5.0	< 1.0	1.9	1.5	< 1.0	< 0.50	< 1.0	< 0.50
		2003 04 (Winter)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.9	0.34 J	5.9	3.1 J	< 1.0	< 0.50	< 1.0	< 0.50
		2003 03 (Fall)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.6	0.33 J	5.5	3.8	< 1.0	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.9	0.35 J	3.9	2.9	< 1.0	< 0.50	< 1.0	0.44 J
		2003 01 (Spring)	-	-	-	-	-	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 2.0 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	0.40 J	6.8 J	0.40 J	3.9 J	2.4 J	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.20 J	< 0.50	0.40 J	1.9 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.30 J	7.2	< 0.50	2.7	0.80	< 0.50	< 0.50	< 0.50	< 0.50
		2002 03 (Fall)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.2	0.50	5.5	3.8	< 0.50	< 0.50	< 0.50	0.50 J
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 50.0	< 300	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.30 J	6.5	0.50 J	4.9	2.9	< 0.50	< 0.50	< 0.50	< 0.50
SWBZ	M001-B	2008 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50 UJ	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2005 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2004 02 (Summer)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2003 04 (Winter)	-	-	-	-	-	0.74	< 1.0	0.20 J	< 1.0	< 1.0	< 2.0 UJ	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	0.25 J	< 1.0	< 1.0	0.49 J	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2003 02 (Summer)	-	-	-	-	-	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 5.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 1.0	< 0.50
		2002 04 (Winter)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 50.0	< 300	< 0.50	3.3	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.20 J	< 0.50	1.4	< 0.50
	M003-B	2008 01 (Spring)	-	-	-	-	-	< 0.50	0.10 J	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2007 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50 UJ	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
		2006 01 (Spring)	-	-	-	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Innovative Technical Solutions, Inc.

Result exceeds Maximum Contaminant Level (MCL)

Result exceeds Ambient Water Quality Criteria (AWQC)

Result exceeds both MCL and AWQC

Bold Text: Result exceeds background value (BV)

Table 7.1-3

Groundwater Sample Analytical Results: Total Petroleum Hydrocarbons and Volatile Organic Compounds at Operable Unit 3 - IR Sites 1 and 32

Summer 2002 through Spring 2008

Basewide Groundwater Monitoring Program, Alameda Point, Alameda, California

			TPH					Commonly Detected Aromatic Compounds											Commonly Detected Chlorinated Hydrocarbons								
			TPH-Diesel	TPH-Jet Fuel	TPH-Motor Oil	TPH-Gasoline	Total TPH (Calculated)	Benzene	Toluene	Ethylbenzene	M,P-xylenes	O-xylene	Naphthalene	Methyl tert-butyl ether (MTBE)	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Tetrachloroethene (PCE)	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	Vinyl Chloride
		Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
		MCL:	NA	NA	NA	NA	NA	1.0	150	300	1750	1750	NA	13.0	70.0	600	NA	5.0	5.0	5.0	6.0	6.0	10.0	5.0	0.50	200	0.50
		BV:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Well No.	Event AWQC:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FWBZ	M028-A	2003 04 (Winter)	-	-	-	-	-	6.3	10.0	5.8	20.0	9.6	8.3	< 5.0	17.0	3.0	0.34 J	2.4	< 1.0	1.1	< 1.0	13.0	< 1.0	1.7	< 0.50	< 1.0	5.1
		2003 03 (Fall)	-	-	-	-	-	50.0	18.0	21.0	58.0	32.0	16.0 J	< 5.0	85.0	9.6	0.84 J	6.2	< 1.0	0.42 J	< 1.0	1.8	0.22 J	19.0	< 0.50	< 1.0	2.3
		2003 02 (Summer)	-	-	-	-	-	12.0	0.94 J	1.2	< 1.0	0.23 J	< 2.0	< 5.0	26.0	6.3	0.38 J	2.7	< 1.0	< 1.0	< 1.0	1.1	< 1.0	1.3	< 0.50	< 1.0	1.5
		2003 01 (Spring)	-	-	-	-	-	6.7	0.30 J	0.30 J	0.30 J	0.20 J	< 2.0	< 0.50	8.7	3.0	0.20 J	1.2	0.20 J	0.80 J	< 0.50	27.0	0.20 J	1.3	< 0.50	< 0.50	18.0
		2002 04 (Winter)	-	-	-	-	-	< 0.50	3.9	0.50 J	1.6	0.70	1.3 J	< 0.50	1.1	0.30 J	< 0.50	< 0.50	0.30 J	3.8	< 0.50	43.0	< 0.50	0.40 J	< 0.50	< 0.50	3.6
		2002 03 (Fall)	-	-	-	-	-	53.0	15.0	20.0	56.0	30.0	11.0	< 0.50	77.0	9.6	0.80	6.5	< 0.50	< 0.50	< 0.50	1.7	< 0.50	21.0	0.40 J	< 0.50	2.2
		2002 02 (Summer)	< 50.0 UJ	< 50.0 UJ	< 300 UJ	< 150	< 300	10.0	0.60	2.8	1.4	1.3	< 2.0	< 0.50	21.0	5.1	0.40 J	2.7	< 0.50	< 0.50	< 0.50	7.7	< 0.50	3.1	< 0.50	< 0.50	12.0
	M028-E	2008 01 (Spring)	-	-	-	-	-	44.0	440	55.0	210	84.0	53.0	< 3.6	130	21.0	1.9 J	15.0	< 3.6	< 3.6	< 3.6	9.5	< 3.6	11.0	< 3.6	< 3.6	880
		2007 03 (Fall)	-	-	-	-	-	78.0	2800	68.0 J	210	59.0 J	< 800	< 71.0	110	56.0 J	< 71.0	< 71.0	< 71.0	< 71.0	22.0 J	8100	< 71.0	27.0 J	< 71.0	< 71.0	23000
		2007 01 (Spring)	-	-	-	-	-	85.0	3400	69.0	240	100	< 200 UJ	< 50.0	100	79.0	< 50.0	< 16.0	< 50.0	< 50.0	34.0 J	6500	64.0	35.0 J	< 50.0	< 50.0	31000
		2006 03 (Fall)	-	-	-	-	-	44.0	870	52.0	160	66.0	65.0 J	< 42.0	120	30.0 J	< 42.0	< 42.0	< 42.0	< 42.0	< 42.0	2500	11.0 J	15.0 J	< 42.0	< 42.0	5800
		2006 01 (Spring)	-	-	-	-	-	32.0	190	34.0	38.0	30.0	17.0	< 1.0	63.0	22.0	1.0	8.3	< 1.0	< 1.0	< 1.0	1.7	< 1.0	6.1	0.10 J	< 1.0	190
		2005 02 (Summer)	-	-	-	-	-	37.0	690	44.0	130	57.0	42.0	< 6.3	100	30.0	1.4 J	11.0	< 6.3	< 6.3	< 6.3	330	3.2 J	16.0	< 6.3	< 6.3	5000
		2005 01 (Spring)	-	-	-	-	-	44.0	380	35.0	67.0	45.0	15.0	< 3.1	70.0	21.0	0.70 J	8.3	< 3.1	< 3.1	< 3.1	70.0	< 3.1	12.0	< 3.1	< 3.1	3000
		2004 04 (Winter)	-	-	-	-	-	85.0 J	2400 J	77.0 J	220 J	110 J	56.0 J	< 25.0	64.0 J	53.0 J	< 25.0	14.0 J	< 25.0	< 25.0	< 25.0	3500 J	< 25.0	32.0 J	< 25.0	< 25.0	22000 J
		2004 02 (Summer)	-	-	-	-	-	56.0 J	1400	59.0 J	210	80.0	< 250 J	< 63.0	100	58.0 J	< 63.0	16.0 J	< 63.0	< 63.0	< 63.0	4900	< 63.0	18.0 J	< 63.0	< 63.0	13000
		2004 01 (Spring)	-	-	-	-	-	66.0	1700	53.0	150	82.0	32.0	< 50.0	73.0	42.0	< 10.0	10.0	< 10.0	< 10.0	5.5 J	6700	11.0	23.0	< 5.0	< 10.0	20000
		2003 04 (Winter)	-	-	-	-	-	59.0	1400	70.0	1.9	120	64.0	< 5.0	66.0	36.0	1.4	0.30 J	< 1.0	< 1.0	6.8	3900	30.0 J	24.0	3.1	< 1.0	9400
		2003 03 (Fall)	-	-	-	-	-	64.0	1400	61.0	230	100	74.0 J	< 5.0	110	42.0	1.2	< 1.0	< 1.0	< 1.0	5.1	4500	23.0	22.0	< 0.50	< 1.0	12000
		2003 02 (Summer)	-	-	-	-	-	66.0	1200	60.0	300	140	100	< 5.0	150	59.0	1.5	14.0	< 1.0	< 1.0	0.71 J	880	3.4	25.0	< 0.50	< 1.0	8300
		2003 01 (Spring)	-	-	-	-	-	85.0	2800	59.0	220	100	39.0 J	< 36.0	60.0	65.0	< 36.0	12.0 J	< 36.0	< 36.0 UJ	34.0 J	14000	20.0 J	35.0 J	< 36.0	< 36.0	35000
		2002 04 (Winter)	-	-	-	-	-	66.0	1400	72.0	240	110	< 200	< 13.0	66.0	53.0	< 13.0	13.0	< 13.0	13.0	4.0 J	6400	8.5 J	18.0	< 13.0	< 13.0	11000
	M029-A	2008 01 (Spring)	-	-	-	-	-	1.6	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	0.30 J	< 0.50	< 0.50	0.10 J	< 0.50	< 0.50	< 0.50	0.30 J	0.20 J	< 0.50	0.20 J	< 0.50	0.30 J
		2007 03 (Fall)	-	-	-	-	-	1.3	0.10 J	< 0.50	0.10 J	0.070 J	< 2.0	< 0.50	0.40 J	< 0.50	< 0.50	< 0.50	< 0.50	0.10 J	< 0.50	0.30 J	0.20 J	< 0.50	0.20 J	< 0.50	0.60
		2007 01 (Spring)	-	-	-	-	-	2.0	< 0.50	< 0.50	0.20 J	0.090 J	< 2.0	< 0.50	0.40 J	0.060 J	< 0.070	< 0.10	< 0.50	0.10 J	< 0.50	0.30 J	0.30 J	< 0.50	0.30 J	< 0.50	0.40 J
		2006 03 (Fall)	-	-	-	-	-	1.6	< 0.50	0.10 J	0.20 J	0.10 J	0.070 J	< 0.50	0.60	0.090 J	< 0.50	0.20 J	< 0.50	< 0.50	< 0.50	0.30 J	0.30 J	0.060 J	0.20 J	< 0.50	0.30 J
		2006 01 (Spring)	-	-	-	-	-	4.8	< 0.50	0.090 J	0.20 J	< 0.50	< 2.0	< 0.50	0.20 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.40 J	0.20 J	0.10 J	0.20 J	< 0.50	0.30 J

ITSI Innovative Technical Solutions, Inc.

Result exceeds Maximum Contaminant Level (MCL)

Result exceeds Ambient Water Quality Criteria (AWQC)

Result exceeds both MCL and AWQC

Bold Text: Result exceeds background value (BV)

ATTACHMENT B-5

DOCUMENTS RECEIVED, AUGUST AND SEPTEMBER 2009

(1 page)

Documents Received
August and September 2009

Documents

1. *Fact Sheet – Remedial Action at IR Site 27, Dock Zone,* Tetra Tech, August 2009
2. *Draft Final Record of Decision for IR Site 1, 1943-1956 Disposal Area,* Chadux Tetra Tech, August 3, 2009
3. *Proposed Plan for IR Site 2,* Department of the Navy, August 2009
4. *Draft Community Involvement Plan Update,* Chadux Tetra Tech, August 14, 2009
5. *Draft Final Record of Decision for IR Site 35,* Tetra Tech EC Inc, August 20, 2009
6. *Draft Removal Action Completion Report, IR Site 5, Plume 5-3, DNAPL Removal Action,* Shaw, August 21, 2009
7. *Final Time-Critical Removal Action Post-Construction Report IR Sites 1, 2, and 32,* Tetra Tech, September 1, 2009
8. *Revised Draft Final Sampling and Analysis Plan for Remedial Action Work Plan at OU-1 Sites 6, 7, 8, and 16,* URS, September 9, 2009
9. *Final Alameda Point Petroleum Strategy Update,* URS, September 14, 2009
10. *Final Time-Critical Removal Action Post-Construction Report, IR Sites 1, 2, and 32,* Tetra Tech, September 17, 2009

Responses

1. *Comments on the July 31, 2009 Draft Final Record of Decision for IR Site 1, 1943-1956 Disposal Area,* City of Alameda, September 16, 2009
2. *Review of the Revised Draft Remedial Design/Remedial Action Work Plan, IR Site 28, Volumes 1 and 2,* State of California, Department of Toxics Substances Control, September 28, 2009

ATTACHMENT B-6

SITE 34 FEASIBILITY STUDY PRESENTATION HANDOUT

(6 pages)

IR Site 34

Installation Restoration (IR) Site 34 Feasibility Study (FS)

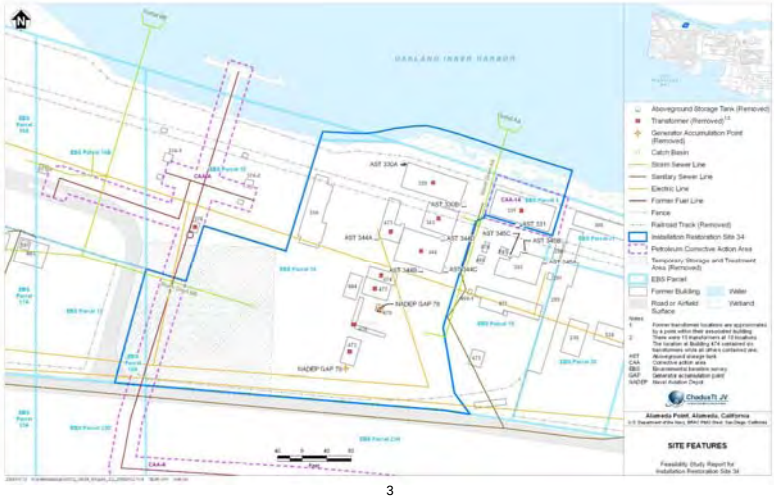
David Darrow
Navy Project Manager
October 2009

Introduction and Presentation Outline

- Site Background
- Environmental Investigations
- Chemicals of Concern
- Remedial Action Objectives
- Remedial Alternatives
- Schedule

Site Background

IR Site 34 is located on the north-central edge of Alameda Point, adjacent to the Oakland Inner Harbor.



3

Environmental Investigations

Investigations at IR Site 34 Included:

- Environmental Baseline Survey – Phases 1, 2A, and 2B (1994, 2001)
- Fuel Pipeline Removal (1999)
- Site Investigation (2003)
- Remedial Investigation (2008)
- Data Gap Sampling (2009)
- Wetland Delineation (2009)
- Refined Conceptual Site Model and Revised Human Health Risk Assessment (2009)

4

Human Health Remediation Goals for Chemicals of Concern in Soil

Exposure Scenario	Exposure Medium	Chemical of Concern	Remediation Goal (mg/kg)
Future Industrial Worker	Surface and Subsurface soil	1-4-dichlorobenzene	3.9
		PCBs	1.0
		Arsenic	9.1
		Lead	800
Future Construction Worker	Subsurface Soil	Arsenic	9.1
		Lead	800
Future Recreational User	Surface Soil	PCBs	1.0
		Arsenic	9.1
		Lead	800
Future Resident	Surface and Subsurface soil	1-4-dichlorobenzene	1.3
		PCBs	1.0
		Arsenic	9.1
		Dieldrin	0.0033
		Heptachlor Epoxide	0.0017
		Lead	400

5

Remedial Action Objectives

Remedial Action Objectives (RAOs) for IR Site 34 are as follows:

- Soil: Protect human health by preventing unacceptable exposure to impacted soil.
- Groundwater: No RAOs were identified for groundwater.

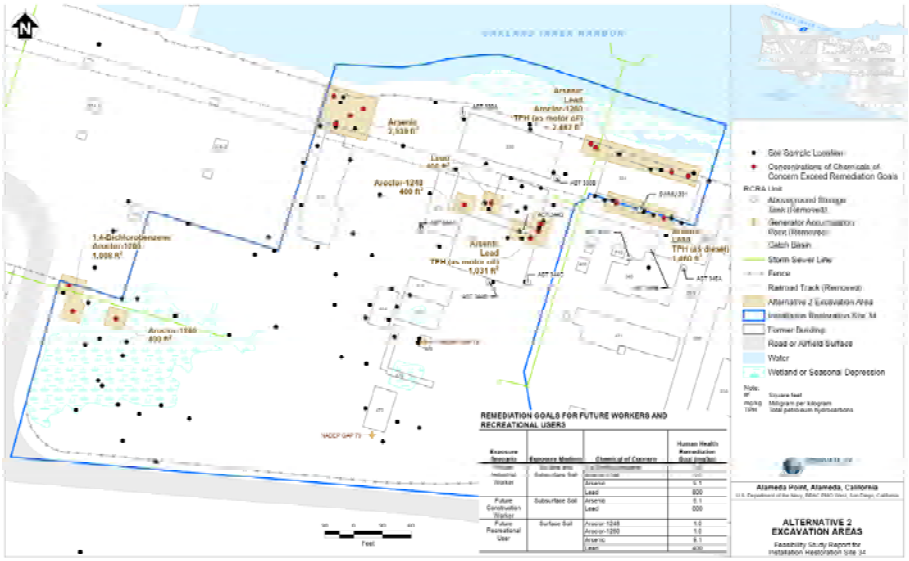
Findings are supported by the results of the human health and ecological risk assessments together with frequency of detection and other site factors.

6

Remedial Alternatives

- **Removal Alternative 1 – No Action**
  - No actions are performed
  - No cost
  - Provides a baseline for comparing all other alternatives
- **Removal Alternative 2 – Institutional Controls, Excavation, and Off-Site Removal**
  - Surface and subsurface soil that poses unacceptable risk to industrial workers, construction workers, or recreational users would be removed
  - Implements institutional controls to prohibit residential land use
  - Removes approximately 1,440 cubic yards of soil
  - Restores wetlands affected by remedial action
  - Estimated cost is $1,645,000

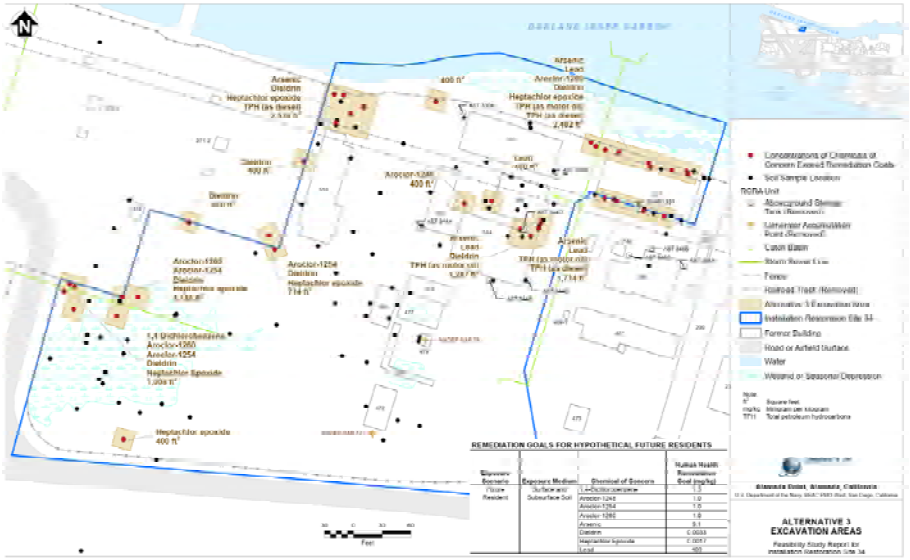
Proposed Remediation Area – Alternative 2



Remedial Alternatives

- **Removal Alternative 3 – Excavation and Off-Site Disposal**
  - Surface and subsurface soil that poses unacceptable risk to industrial workers, construction workers, recreational users or future residents would be removed and disposed at an off-site location
  - Removes approximately 2,000 cubic yards of soil
  - Restores wetlands affected by remedial action
  - Estimated Cost is $1,303,000

Proposed Remediation Area – Alternative 3



REMEDIATION GOALS FOR HYPOTHETICAL FUTURE RESIDENTS

Exposure Scenario	Exposure Medium	Chemical of Concern	Human Health Remediation Goal (mg/kg)
Future Resident	Surface and Subsurface Soil	1,4-Dichlorobenzene	1.0
		Aroclor-1242	1.0
		Aroclor-1254	1.0
		Aroclor-1260	1.0
		Arsenic	3.1
		Dieldrin	0.0033
		Heptachlor epoxide	0.0017
		Lead	400

Schedule / Questions

Task	Date
BCT Comments Due	October 8, 2009
Draft Final FS	December 8, 2009
Final FS	January 8, 2010

QUESTIONS?

11

ATTACHMENT B-7

IR SITE 34 SUMMARY

(1 page)

IR Site 34 Summary
October 1, 2009

IR Site 34 consists of 4.18 acres and is located in the north-central portion of Alameda Point. It is a partially paved and relatively flat open space. Navy activities within IR Site 34 consisted primarily of painting services, storage, wood and metal shop activities, and sandblasting activities. The site formerly contained structures including buildings, aboveground storage tanks (ASTs), generator accumulation points (GAPs), transformers, and an aviation gasoline fuel line. However, all buildings, ASTs, GAPs, transformers, and fuel lines were removed between 1996 and 2000. Today only the concrete pads from these structures remain.

Proposed future reuse for IR Site 34 is as part of the golf course area. In addition, IR Site 34 has been identified as a tideland trust area that is subject to the limitations expressed in the Coastal Zone Management Act, including a restriction on residential use.

The IR Site 34 Remedial Investigation (RI) Report was completed in May 2008. Sampling investigations showed metals, VOC, PAHs, pesticides, PCBs, and TPH detected at concentrations above residential (unrestricted) use criteria in soil samples. No groundwater detected concentrations exceeded Water Board environmental screening levels. Groundwater at the site is impacted by salt water intrusion and cannot be used as potential drinking water. The data collected prior to and during the RI sampling were used to evaluate site conditions for both the human health risk assessment and screening-level ecological risk assessment. After the IR Site 34 RI was completed, two additional investigations were conducted to (1) answer questions that had come up regarding vapor intrusion, verify previous contaminants results at the southwest corner of the site and further investigate soil for fuel-related contamination north of Building 331 where a layer of black sand with a strong diesel odor was identified; and (2) address the issue of potential wetlands at the site. Groundwater, soil gas, and soil samples were collected at the southwest corner of the site and analyzed for VOCs and PCBs. The vapor intrusion risk evaluation which incorporated the data gap sampling results showed no risk to human health for residential (unrestricted) use. Soil samples were collected in the vicinity of Building 331 and analyzed for naphthalene, metals, TPH, and PCBs. Metals, TPH (as diesel and motor oil), and PCBs were detected in soil samples in the vicinity of Building 331. Wetland delineation was conducted at IR Site 34 to identify potential wetlands. Mitigation or restoration of wetland areas where remediation might occur will be incorporated into remedial actions at the site.

IR Site 34 is at the Draft Feasibility Study (FS) stage in which soil remedial alternatives are developed to address any contamination that poses an unacceptable risk to human health or the environment. The soil alternatives evaluated during the Draft FS are: (1) No action ($0); (2) Institutional Controls, Excavation, and Off-Site Disposal ($1,645,000); and (3) Excavation and Off-Site Disposal allowing for residential (unrestricted) use ($1,303,000). The Draft FS does not include any groundwater alternatives because groundwater does not pose a threat to human health or ecological receptors.

ATTACHMENT B-8

STATUS OF ALAMEDA POINT CERCLA CLEANUP ACTIVITIES AND TRANSFER AS OF THE END OF FISCAL YEAR 2009 (SEPTEMBER 30, 2009)

(2 pages)

Status of CERCLA Cleanup Activities and Transfers as of the end of Fiscal Year 2009 (September 30, 2009)
Alameda Point

- The IR Site 30 ROD was signed in September 2009. No further action is the selected remedy for soil at the site. The property is currently leased to Alameda Unified School District and it appears they will also be the recipient when the property is transferred.

- A Finding of Suitability to Transfer (FOST) for Estuary Park was finalized in September and the Park will now transfer to the City of Alameda.

- The groundwater remediation system for IR Site 27, the Dock Zone near Ferry Point Road, is up and running and from the initial sampling results appears to be effectively treating the VOCs in groundwater. The remediation technology is an in-situ chemical oxidation (ISCO) system using sodium persulfate as the reagent to treat the VOCs. The layout and operation of the system uses recirculation modules, moving from the outside of the plume inward, and is based on the design and lessons learned from treating the groundwater with ISCO at IR Sites 14 and 26.

- Groundwater in the OU 5 plume is undergoing the first phase of full scale remediation using a biosparge system that bubbles air into the deeper portions of the first water bearing zone. The system has been installed in the eastern plume as the first phase in the remediation. After four months of operation, concentrations of naphthalene have dropped in all six biosparge zone monitoring wells within the plume to between 1/10 and 1/100 of the initial baseline concentrations. Benzene concentrations have dropped in five of six biosparge zone monitoring wells from to between ½ and 1/10 of the initial baseline concentrations.

- IR Site 14 groundwater is almost at the residential cleanup levels required in the IR Site 14 ROD and is undergoing a "polishing" step in the ISCO treatment. The sodium persulfate is being injected into a few remaining areas where contamination levels still exceed the clean up goals. After this step, the site will undergo a monitoring program to check for rebound, if any, and then the next steps will be determined based on that monitoring.

- IR Site 26 is still undergoing ISCO treatment, and is not quite as far along as IR Site 14 yet. However, although the cleanup goals have not yet been reached, concentrations of

contaminants in groundwater have decreased from 10 times less to a 1000 times less than the original baseline concentrations.

- The six-phase heating removal action at IR Site 5 is now complete. Plume 5-1 (outside Bldg 5) covered 1/3 acre in plan view (looking down on it from above) and Plume 5-3 (inside Bldg 5) covered 1 acre. The removal action was conducted in 4 phases, with each phase capable of treating groundwater beneath 1/3 acre of land. Concentrations in the both plumes have dropped from an average of 15,000 ug/l to less than 300 ug/l. In some portions of the treated plumes, the concentrations are now so low they meet drinking water standards (Maximum Contaminant Levels – MCLs).

- The remedial design is almost complete for IR Site 28, Todd Shipyards. The groundwater remediation system is planning to go full-scale by the beginning of next year to treat copper contamination to prevent it entering the Bay. At the same time the soil remediation effort, using excavation and off-site disposal will be underway.

- The Remedial Design for the soil remediation components of OU 1, for Sites 6, 7, 8 and 16, has been finalized and the Navy is planning to start field work up in October.

- The two debris piles from Seaplane Lagoon have been removed and disposed of off-site, and the last (third) debris pile is currently being excavated. The buried block in the SPL is also being investigated, with the Navy arranging for divers to explore the block in mid-October.

- The radiological storm drain system removal is 80% complete. The last leg of the removal is the portion leading to the Seaplane Lagoon's northwest outfall. Once this section is completed, the northwest area of the SPL can be excavated for remediation. The only portion of the radiologically impacted storm drains that has not been addressed by this removal action is that running under the east-west breezeway in Bldg 5. This section presents huge structural difficulties in terms of access and building support, and options for remediation have been included as part of the Draft OU 2C Feasibility Study.

ATTACHMENT B-9

OCTOBER UPCOMING DOCUMENTS FOR RAB REVIEW

(1 page)

Upcoming Documents for RAB Review

October 2009

Size	Document		Available for Review
Medium	Basewide	Draft Community Involvement Plan	Ongoing
Medium	Site 35	Draft Final Record of Decision	Ongoing
Medium	Site 34	Draft Feasibility Study	Ongoing
Medium	Site 1	Draft Pre-design Work Plan	Ongoing
Medium	Site 24	Draft Record of Decision	Ongoing
Medium	Basewide	Basewide Groundwater Monitoring & Sampling Plan	October
Large	OU-2A	Draft Feasibility Study	October
Medium	32	Draft Radiological Characterization Survey Work Plan	October
Small	OU-2B	Draft Soil Gas/Indoor Air Sampling Report (Building 163 area)	October
Medium	OU-2B	Draft Plume 4-1 Treatability Study Work Plan (SERDP Project)	November
Large	Fed Parcel	Draft Expanded SI Work Plan	November
Medium	32	Draft Final Remedial Design/Remedial Action Plans	November
Medium	Basewide	Draft Radiological Basewide Survey Work Plan	November
Small	32	Draft Groundwater Monitoring Well Installation and Sampling Work Plan	November

ATTACHMENT B-10

RESTORATION ADVISORY BOARD RULE HANDBOOK

(28 pages)

RAB Rule Handbook

Executive Summary

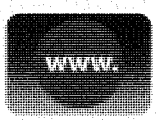
The Department of Defense (DoD) encourages community involvement in the environmental restoration process through Restoration Advisory Boards (RABs). Since 1994, RABs have been established at over 300 military installations and properties in the United States and its territories to encourage communities and installations to identify and discuss potential environmental restoration issues. By facilitating open communication and understanding, RABs serve as a forum for discussion among the parties involved in the Defense Environmental Restoration Program (DERP) at affected sites and installations. RABs provide a collaborative forum for the community, government agencies, tribes, and installation decision makers to discuss and identify the most efficient and productive means to restore the environment.

DoD developed this handbook as an accompaniment to the RAB Rule, which was issued on May 12, 2006 *(71 Federal Register 27610)*. The handbook is intended to supplement the rule. It is written to be flexible enough to guide individual RABs in addressing their own unique concerns and to offer suggestions to the communities and members involved in the RAB.

This handbook follows the structure of the RAB Rule using a question and answer format designed to serve as a quick reference manual for major topics that may be discussed by RABs and local communities. The RAB Handbook is composed of the following nine chapters:

1. What is a RAB?
2. How is a RAB established?
3. Who can participate in a RAB?
4. What are the roles and responsibilities of RAB participants?
5. How does a RAB operate?
6. How does a community or installation know when a RAB has completed its work and is no longer needed?
7. What happens if a RAB becomes ineffective?
8. Can an adjourned or dissolved RAB be reestablished?
9. What happens to RABs at installations that are closing or have been closed under BRAC?

DENIX RAB Rule Web site



Please refer to the RAB Rule for specific requirements of RABs. The rule may be found at: https://www.denix.osd.mil/denix/Public/News/OSD/RAB/rabrule.html or at *32 Code of Federal Regulations Part 202*.

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1 What is a Restoration Advisory Board?

Each military installation is part of a community, and actions the installation undertakes in environmental restoration may impact its neighbors. Environmental restoration on DoD installations requires local community input and exchange of information. A RAB provides a forum for this input and exchange at operating and closing installations as well as formerly used defense sites (FUDS). Additionally, having a RAB at an operational installation often helps to ease the concern that neighbors might feel when an installation is undergoing environmental restoration.

What is a RAB?

A RAB is a stakeholder group that meets on a regular basis to discuss environmental restoration at a specific property that is either currently or was formerly owned by DoD, but where DoD oversees the environmental restoration process. RABs enable people interested in the environmental cleanup at a specific installation to exchange information with representatives of regulatory agencies, the installation, and the community. While the general public can comment on DoD's environmental restoration program, RABs offer a focused and interactive opportunity to participate in the environmental restoration process.

In most cases, a RAB addresses cleanup activities at one particular installation; however, there is no prohibition on convening a RAB to address cleanup activities at multiple installations, especially when the same community members are involved. A decision to have a RAB address multiple installations should include input from the communities involved as well as the installations and regulators.

What is the purpose of a RAB?

A RAB provides the community with the opportunity to become involved in the environmental restoration process at DoD installations either as a RAB member or through attendance at RAB meetings. RABs offer members the opportunity to influence cleanup decisions through discussion and to provide input to the installation decision makers. Because representatives of the environmental agencies overseeing cleanup participate in the RAB, the RAB offers members and the public the opportunity to share their questions, concerns, and ideas with agencies involved in the cleanup.

Can a RAB's mission statement and goals be amended?

Establishing a RAB's mission statement and goals should be one of the first undertakings of a RAB. A mission statement and goals help to focus the RAB and give it direction. Since the RAB members generate the mission statement and goals, they have the ability to change them. The process for changing the mission statement and goals should be one of the items addressed by the operating procedures of the RAB. In all cases, the decision to change these items should be joint. If, after consultation, the installation and community co-chairs determine there is a valid need to alter the mission and goals, then these items may be amended using the process outlined in the operating procedures.

What issues do RABs address?

RABs may only address issues associated with environmental restoration activities. Funding for RABs is received from the Service's Environmental Restoration accounts; therefore, RABs may only discuss environmental restoration topics. If another issue of community interest arises in the course of a RAB's discussions, then the RAB installation co-chair should refer the issue to the appropriate offices or individuals at the installation. Limiting the RABs to discussions of environmental restoration helps to ensure that RABs remain focused and provides maximum opportunity to discuss issues related to environmental restoration activities.

What if I want to discuss other issues?

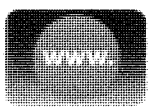
Individuals hoping to discuss activities other than environmental restoration, such as noise or water quality concerns, should contact the RAB installation co-chair. The co-chair will identify the point of contact (POC) or office responsible for handling the issues of interest and pass along the names of inquirers to the appropriate offices for resolution.

What activities can RABs undertake?

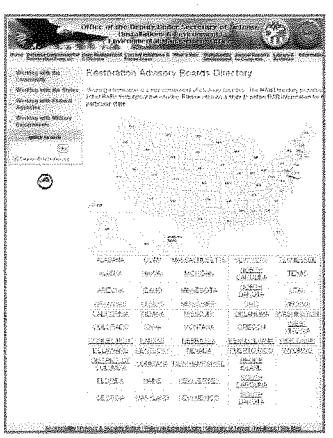
Examples of activities a RAB may undertake are:

- Reviewing and commenting on environmental restoration documents and activities;
- Providing information to the community;
- Receiving input from the community; and
- Obtaining information regarding the schedule, type, and status of environmental restoration activities.

How can I find out about a RAB's activities?



The RAB directory is located on DENIX at https://www.denix.osd.mil/denix/Public/Library/Cleanup/CleanupOfc/stakeholder/rabdirectory.html



DoD maintains records of RAB activities, procedures, and meeting minutes in an information repository (IR). This repository is publicly available and can be found in a local library or other community location. The location of the information repository should be based on information provided by the community. It should be accessible and convenient for the community. To find out where the RAB maintains its IR, contact the POC or co-chairs by browsing the RAB directory online.

In some cases, RAB activities are documented in meeting minutes posted on project web sites on the World Wide Web. The POC or RAB co-chairs can provide those Web sites to interested parties.

Are RABs required?

RABs fulfill a statutory requirement for DoD to establish, whenever possible and practical, a committee to review and comment on DoD actions and proposed actions regarding environmental restoration. DoD strongly encourages RABs at installations where environmental restoration activities occur and where there is community interest in establishing a RAB. Technical Review Committees (TRCs) satisfy the same statutory requirements as a RAB, but RABs are the preferred forum. If the community is not interested in establishing a RAB at the installation, then a RAB is not required; however, DoD must make the opportunity to establish a RAB available if the community becomes interested and must assess community interest every 24 months while environmental restoration activities are still ongoing.

Are RABs decision making bodies?

RABs provide valuable input to the installation and environmental agencies on environmental restoration decisions, but RABs are not decision making bodies.

Is consensus necessary for a RAB?

No, consensus is not necessary. The Department of Defense is trying to make decisions based on input from as many constituencies as possible and appreciates advice from individuals.

Must an installation follow RAB recommendations?

The installation decision makers will listen closely to and consider the input RAB members provide regarding environmental restoration activities; however, the installation is not required to follow RAB recommendations. A RAB is a community stakeholder group that meets on a regular basis to discuss environmental restoration at a specific property that is either currently or was formerly owned by DoD, but where DoD oversees the environmental restoration process. RABs enable persons interested in the environmental cleanup at a specific installation to exchange information with representatives of regulatory agencies, the installation, and the community. While the general public can comment on DoD's environmental restoration program, RABs offer a focused and interactive opportunity to participate in the environmental restoration process.

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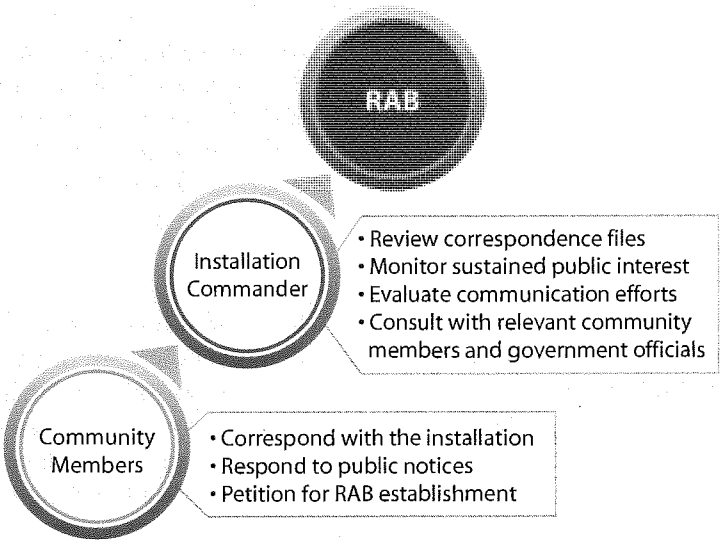
2 How is a RAB established?

The Department of Defense defined a process for establishing RABs to ensure consistency and fairness among communities and installations. This process defines authority to determine the need to establish a RAB, the criteria by which the need for a RAB is determined, and the actions necessary to form a RAB. A RAB ensures interested individuals and groups from the community have an opportunity to thoughtfully participate in the decision making process of environmental restoration activities in a timely manner.

Who determines the need to establish a RAB?

The public plays a vital role in determining whether a RAB should be established, as sufficient and sustained community interest is a threshold criterion for establishing a RAB. The Installation Commander reviews and considers input and sustained interest from the public when evaluating whether the criteria for establishing a RAB are met.



If I live near an installation without a RAB, how can I help establish one?

When environmental restoration activities at installations where there is no RAB are of interest to members of the public, they should contact the installation POC or Public Affairs (PA) Office. The Installation Commander will review community interest to establish a RAB at least every 24 months.

What can I do if I am only one of a few people interested in environmental restoration at the installation?

Individuals interested in environmental restoration at the installation should contact the installation POC or PA Office to express their interest in obtaining more information. Interested persons may also consider requesting a copy of the Community Relations Plan (CRP). Each installation is responsible for developing a CRP to outline cleanup actions and ways the community can participate. Through this plan, the public and community may become active participants in the environmental restoration process.

Interested individuals may also become involved by asking the installation whether a RAB or TRC is currently operating at an installation. If neither exist at an installation, an individual may contact the installation and ask about opportunities for involvement.

How is a RAB established?

What are the criteria for establishing a RAB?

The installation will form a RAB when there is sufficient and sustained community interest and one of the following criteria is met:

- The installation is closing and transferring property to the community;
- At least 50 local citizens have petitioned for a RAB;
- Federal, tribal, state, or local government representatives have requested a RAB; or
- The installation has determined the need for a RAB.

What if I live in a small community and less than 50 people are interested in establishing a RAB?

The installation will determine whether any of the criteria for establishing a RAB are met by reviewing media files, reviewing correspondence with the installation, and consulting with potential stakeholders and government officials.

If an individual lives in a less populated area but sustained interest exists to establish a RAB, the community may still petition for the creation of a RAB. Those who are interested may contact the installation POC or PA Office expressing the desire to establish a RAB and ask about alternative opportunities for involvement. They may also contact EPA, the tribe with jurisdiction over the property (if any), or the state environmental regulatory agency.

Can circumstances require reevaluating the decision against establishing a RAB?

If an event occurs (e.g., a feature on the local news) to suddenly increase community interest at an installation where the decision has already been made not to establish a RAB, then the Installation Commander will determine whether to reevaluate the criteria. The Installation Commander will also examine whether the sudden increase in community interest is likely to be sustained or temporary.

Will evaluation depend on quantity, quality or both?

Both the number and content of correspondences will be evaluated against the establishment criteria. Sustained interest shows commitment from the community and is an important factor when deciding if a community is prepared to maintain a RAB during an installation's environmental restoration activities.

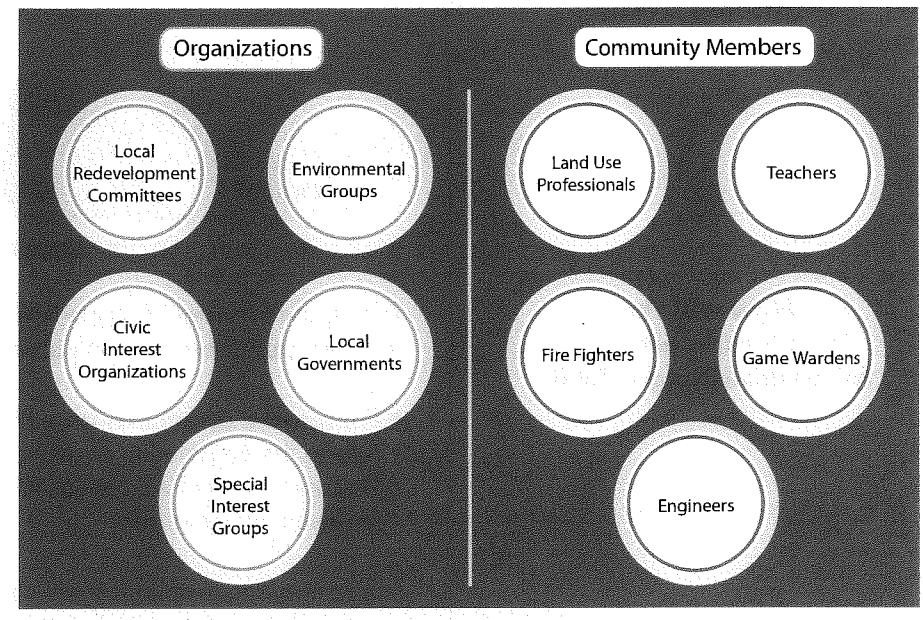
How often does the installation review community interest when a determination has been made not to establish a RAB?

An Installation Commander is required by the RAB Rule to evaluate criteria to establish a RAB at least once every 24 months while environmental restoration activities are still ongoing. However, there may be a need to review this criteria on a shorter schedule (e.g., if the installation's cleanup status significantly changes). The public can submit a petition for establishment at any time. Regulatory agencies may also recommend the installation review public interest or convene a RAB at any time.

How is a RAB established?

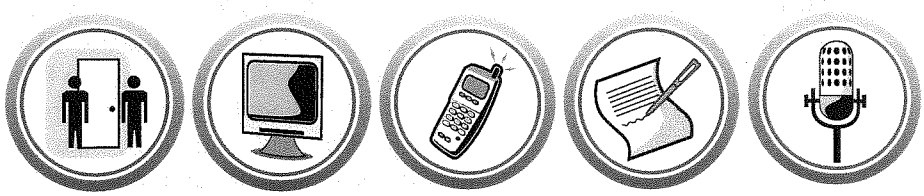
When establishing a RAB how will the base know which local community members to consult?

When an installation is preparing to establish a RAB, it will consult with individuals who were interviewed during the development of the CRP, as well as others who were identified within the community as interested in participating. The installation should also consult with individuals who served on the RAB selection panel. Former CRP participants and proposed panel members should represent a cross-section of community members and organizations. Examples may include:



How will the installation contact community members for consultation?

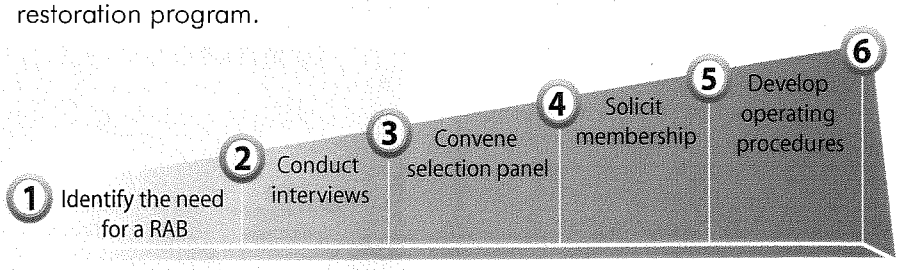
The installation will consult with community members through personal face-to-face meetings whenever possible. If geographic barriers limit personal interaction, it may be necessary to conduct consultation through electronic mail or phone interviews. An installation may post a notice in a local newspaper informing the community of its intent to contact community members for consultation purposes. The installation may also benefit from contacting the media prior to conducting interviews to give notice to the local community. This notice can provide the community with an overview of RAB establishment procedures and the goals the installation hopes to achieve with its RAB.



How is a RAB established?

What is the timeline for establishing a RAB — e.g., how long does an installation have to assess sufficient and sustained community interest, as measured from the triggering event?

There is no timeline for RAB establishment. Typically, it may take the installation four to six weeks to notify the community, approve membership, and create operating procedures, but each installation may take a different amount of time to complete these steps. DoD recommends an installation begin the steps to establish a RAB as soon as possible following the discovery that the installation will be conducting cleanups under the environmental restoration program.



Steps to establish a RAB

How will the installation prepare for establishing a RAB?

To prepare for establishing a RAB, the installation will issue fact sheets, press releases, public notices, public service announcements or newspaper ads to:

- Educate the community on a RAB's purpose;
- Inform the community of membership opportunities; and
- Discuss how the RAB relates to the installation's community involvement program.

In addition, the installation will solicit community input, interview affected community members, and consult with government agencies in the planning phase of the RAB. Regardless of whether or not the installation has a RAB, the installation should have a proactive, long term, and comprehensive community involvement program in place. The community involvement program details the activities the installation intends to undertake with help from the community and may also suggest community involvement methods. The installation will also sponsor an initial meeting to introduce RAB concepts to the community and begin the process of soliciting members.

Who will establish the RAB?

Once the evaluation is complete, the Installation Commander is responsible for establishing a RAB.

How does a RAB acquire members?

Once RAB establishment has been announced, the installation begins soliciting community members for participation. The installation will provide a person to fill the role of the RAB installation co-chair and begin the process of convening the selection panel to nominate individuals for membership on the RAB. EPA and tribal, state and local governments are also encouraged to participate in convening the selection panel as well as nominating representatives to the RAB.

How does a RAB solicit members at establishment?

The Installation Commander will consult with the regulatory community and key local government officials to form a selection panel to identify community leaders and representatives for RAB membership. These potential members

should represent the community based on diverse interests. The selection panel will consult the Community Relations Plan, correspondence, and media coverage to identify potential members. The panel will also evaluate interest forms from the community to determine the level of interest and diversity among the candidates. It is recommended that members of the selection panel not be selected as RAB members.

How does a potential new member indicate interest in belonging to a previously established RAB?

A potential new member to an established RAB may contact the remedial project manager (RPM), installation co-chair, PA Office, or other member of the RAB to inquire about membership. The RAB should discuss the mechanism for adding new members early in the process and outline the mechanism in the RAB's operating procedures.

If I live near an installation with a RAB, how can I become involved?

RAB meetings are open to public participation and RABs welcome suggestions, concerns, or questions. If an individual lives and/or works in an area affected by the installation he/she may be eligible for membership. Individuals should contact the RAB or the installation co-Chair or PA office to inquire about the possibility of becoming a member.

What might be appropriate circumstances for a RAB to solicit new members?

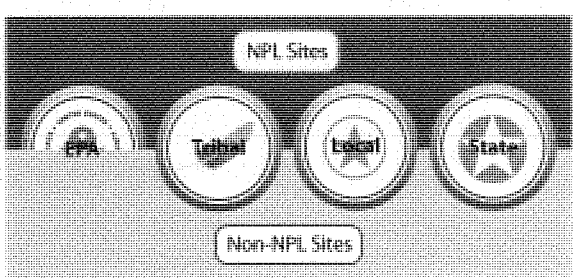
A RAB may need to solicit new members when major changes affect the installation or the environmental restoration activities at the installation, or when changes in the community result in a new constituency. Examples might include the addition of Military Munitions Response Program sites, the installation's placement on the National Priorities List (NPL) or a base realignment and closure (BRAC) list, new residential or commercial development, or the need to replace members who have moved away. In these cases, new members may be needed to ensure that diversity on the RAB is maintained. DoD should limit its representation to one member, who should be the DoD co-chair. Other DoD experts or specialists may attend meetings as necessary.

How will the RAB solicit new members?

During an update the RAB will solicit new members in accordance with its operating procedures. To maintain RAB diversity, replacement members will generally be sought from the same constituency as the former member.

How are regulatory members selected?

The regulatory agency with environmental restoration oversight responsibility at the installation will provide one representative to participate in the RAB. At NPL sites, EPA and tribal, state, and local governments each will have one representative. At non-NPL sites, EPA will generally not be represented, although representatives may participate if they desire.



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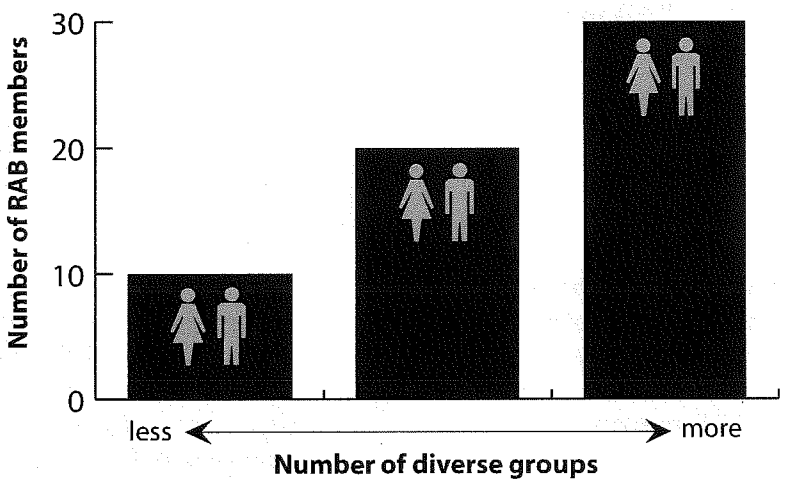
3 Who can participate in a RAB?

RABs are comprised of individuals from the community who are affected by the installation's environmental restoration activities because they live and/or work in close proximity to the installation. Anyone interested in restoration activities and willing to dedicate their time may participate in RAB meetings, although they may not actually be a RAB member. RABs also include representatives from the installation and regulatory agencies that oversee cleanup at the installation.

How big can a RAB be?

RAB size is an installation-specific issue and should be determined in the operating procedures unique to each RAB. Factors influencing the number of members are a reflection of diverse interests, issues affecting the surrounding communities, community interests, and population of the surrounding community.

To maintain a constructive dialogue, the Department suggests the RAB be no larger than 30 individuals, but not so small that diverse interests are not adequately represented. A RAB member may represent more than one group or interest.



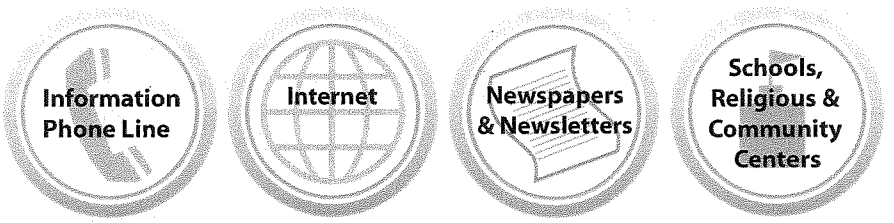
How does the installation ensure that diverse interests are represented and that members fairly represent the local community?

The selection panel, which is made up of community members with varying backgrounds and interests, evaluates the candidates. The selection panel seeks out members using methods intended to reach a diverse audience. For example, the panel may post newspaper ads, distribute fliers in locations throughout the community, and have announcements made on the radio, in churches, schools, and community centers. Diversity determination is based on a candidate's responses to the evaluation forms, involvement in outside community groups and organizations, occupation, interests, and dedication to cleanup progress at the installation. The Commanding Officer of the installation will make the final judgment on the diversity of the candidates. He or she may reject the entire slate recommended by the selection panel based on the lack of diversity, but cannot reject individuals.

Who can participate in a RAB?

How are community interest forms distributed to the community?

RAB interest forms may be announced and distributed through several methods to ensure as many people as possible in the community are provided with the opportunity to respond. Installations can publish the forms in local newspapers and community newsletters; post them on the installation Web site, provide copies at local libraries and recreation centers; provide copies to local schools for children to take home to parents; make announcements at city hall meetings and during church services; or provide an information phone line at the installation.



Can I provide input into the selection criteria of new members if I am already a RAB member?

RAB members may provide input into the selection criteria of new RAB members to replace members who are leaving. This process is defined in the RAB's operating procedures. Each RAB's unique operating procedures should specify the nomination and selection process for replacement members.

The selection panel generally exists only once—during the creation of a new RAB or in some cases when an adjourned or dissolved RAB is reinstated. In these cases, former RAB members will generally not be involved in the creation of the new RAB.

Do I need to have environmental restoration experience to serve as a co-chair or community RAB member?

No. Environmental restoration experience may be beneficial, but is not required of either community co-chairs or community RAB members. Training is provided to RAB members to help explain environmental restoration processes and site-specific issues. A potential co-chair or member's interest in the community and environment, and commitment to dedicate time to the process are important factors. The selection panel will place greater emphasis on the diversity an individual would bring to the RAB, and the individual's expressed commitment toward achieving the RAB's goals, than to experience.

4 What are the roles and responsibilities of RAB participants?

The following chapter outlines the roles and responsibilities of each RAB participant.

RAB Participant	Roles and Responsibilities
Installation Commander	• Establish a RAB when appropriate and periodically reevaluate community interest. • Approve RAB operating procedures, based on recommendation of co-chairs. • Periodically monitor RAB meetings. • Arbitrate disputes, if necessary. • Determine when and if the RAB should be adjourned, dissolved, or reestablished.
Installation co-chair	• Coordinate with the community co-chair to prepare and distribute agendas for meetings. • Ensure that DoD participates in an open, honest, constructive manner. • Discuss environmental matters in a manner that will ensure that lay members of the RAB can understand. • Attend all RAB meetings. • Ensure RAB members have the opportunity to provide input. • Ensure community issues and concerns related to restoration are addressed when raised. • Ensure documents distributed to the RAB are written in layman's terms when possible. • Ensure documents distributed to the RAB are made available to the general public. • Ensure an accurate list of interested parties is developed and maintained. • Provide relevant policies and guidance documents to the RAB. • Ensure that adequate administrative support is provided to the RAB. • Refer issues not related to restoration to the appropriate officials. • Report back to the commanding officer of the installation. • Ensure that RAB members receive necessary training.
Community co-chair	• Coordinate with installation co-chair and community members to prepare agendas. • Ensure that all RAB community members have the opportunity to participate in an open, honest, and constructive manner. • Ensure that community issues and concerns related to restoration are raised. • Coordinate with installation co-chair to ensure that periodic training assessments are conducted and training needs are met. • Assist with dissemination of information to the general public. • Report back to the community, and coordinate with other RAB members to ensure that they are adequately representing segments of the community at RAB meetings. • Serve without compensation on the RAB.

What are the roles and responsibilities of RAB participants?

RAB Participant	Roles and Responsibilities
Community members	• Attend meetings. • Provide individual input in an open, honest, and constructive manner. • Represent and communicate community concerns to the RAB. • Act as a conduit for exchange of information. • Review, evaluate and comment on documents and other materials related to restoration. • Represent and communicate RAB issues to the community. • Serve without compensation on the RAB.
Local and State government members	• Attend meetings. • Serve as a referral and resource on restoration. • Review documents and other materials related to restoration. • Ensure that state and local environmental standards and regulations are identified and addressed by the installation. • Facilitate flexible and innovative resolutions of environmental issues and concerns. • Assist in education and training for RAB members.
Tribal government members	• Attend meetings. • Serve as a referral and resource on restoration. • Review documents and other materials related to restoration. • Ensure that tribal environmental standards and regulations are identified and addressed by the installation. • Facilitate flexible and innovative resolutions of environmental issues and concerns. • Educate RAB members regarding tribal sovereignty, tribal laws and their application to the property. • Participate in the RAB without replacing the government-to-government relationship with the Federal government. • Assist in education and training for RAB members.
EPA member	• Attend meetings. • Serve as a referral and resource on restoration. • Review documents and other materials related to restoration. • Facilitate flexible and innovative resolutions of environmental issues and concerns. • Ensure that federal environmental standards and regulations are identified and addressed by the installation. • Assist in education and training for RAB members.
Public	• Participate in community RAB meetings. • Observe rules and operating procedures when participating at RAB meetings or interacting with RAB members. • Ask questions to ensure understanding of RAB activities and impact on the community.

What are the roles and responsibilities of RAB participants?

How will the RAB handle a co-chair or other RAB member who is not committed to the RAB's goals and objectives, or is not meeting their responsibilities?

How can a RAB resolve disputes if an impasse cannot be broken within the operating procedures?

Each RAB's operating procedures should provide guidelines for how to handle situations that hinder open participation and communication. The RAB's objective is to create a forum for discussion that facilitates completing environmental restoration activities at an installation in an open and cooperative environment. In cases where communication becomes tangled and members doubt the sincerity of one another, the best solution is to discuss these concerns within the RAB, in accordance with the operating procedures.

An independent facilitator may be brought to the RAB to explore disputes within the group. A meeting facilitator can be a useful tool to help RAB members focus on their goals for the installation.

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5 How does a RAB operate?

Each RAB develops its own unique set of operating procedures based on the needs of the RAB and the installation. However, the RAB Rule does provide certain requirements. These requirements include, but are not limited to, developing a mission statement, providing training to members, and updating RAB information in the administrative record.

What is a RAB's mission statement?

A RAB's mission statement details the RAB's goals and describes its purpose. It also provides a focus for environmental restoration discussions to help the RAB stay on track during meetings.

Why should a RAB develop operating procedures?

RABs are encouraged to develop operating procedures to guide the RAB members during operation and make the RAB an effective and functioning advisory board. Operating procedures establish rules and guidelines for issues the RAB may address relating to goals and objectives, membership, participation, restoration, training, roles and responsibilities, and reporting requirements.

Is there a standard outline for developing operating procedures?

The RAB Rule outlines standard operating procedures that could apply to all RABs regardless of geographic location or environmental restoration activities. Individual RABs are encouraged to develop their own unique and installation-specific operating procedures.

When should a RAB develop operating procedures?

A RAB should develop operating procedures as soon as it is officially formed. Official formation is complete when co-chairs and members have been selected from the community and appropriate government agencies.

How often should a RAB meet?

A RAB should meet as often as necessary. RAB members should decide on a schedule when they establish the RAB's operating procedures, and then add or delete meetings from the schedule as necessary. There are times when a flurry of activity occurs in planning or conducting environmental restoration and RABs may want to meet more often to review and provide input on relevant documents and ensure that they stay abreast of the activities. There are other times when the RAB may determine that infrequent meetings are adequate.

How does my RAB receive funding to operate?

Installations use their Environmental Restoration (ER) accounts to support RAB activities. The RAB itself will not receive funding for its activities.

Funded Activities	Non-Funded Activities
RAB establishment	Transportation costs
Membership selection	Compensation for volunteer time
Site-specific and relevant training	Meals and beverages at meetings
Meeting announcements, facilities, and facilitators	RAB member business cards
Mailing list maintenance and distribution	Computers, offices and other office/business materials
Meeting agenda materials	Member stationary

How does a RAB operate?

Are Web sites eligible administrative expenses?

RABs may include information on an installation- or Service-sponsored Web site, but may not claim Web sites or their maintenance as eligible administrative expenses.

How often can my RAB receive training?

RABs and community members can receive training whenever necessary. Installations should provide training during RAB orientation to provide information on what is expected of a RAB and to assist RAB members in gaining an understanding of installation-specific environmental and health issues. Other training should be tailored to site-specific issues and provided as necessary.

What are examples of training my RAB could receive?

RABs may receive training specific to environmental restoration activities at the installation.

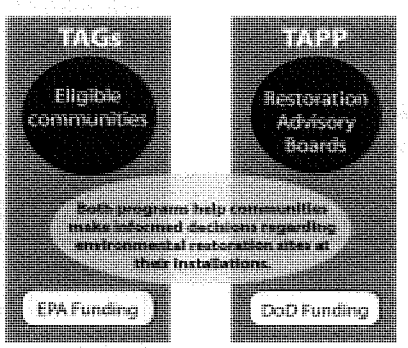
RAB Training Locations	Examples of RAB Training
Meetings	Processes and vocabulary
Workshops	Prioritization
Briefings	Technology
Tours	Environmental restoration issues

Is there a training budget?

There is no dedicated funding source specific to RAB training. Any training that RABs receive from the installation is based on the availability of funds received from the Service's ER account. RABs seeking additional support could potentially qualify for a Technical Assistance Grant (TAG) or Technical Assistance for Public Participation (TAPP) or technical advice from EPA's Technical Outreach Services for Communities.

What are the purposes of TAGs and TAPP?

TAGs and TAPP are two separate programs that can provide communities with independent technical assistance to interpret scientific or engineering issues related to an installation's environmental restoration.

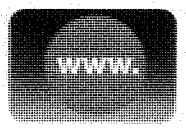


Are TAGs and TAPP available to all RABs?

TAGs are provided by the EPA and are only available at NPL sites. TAPP is provided by DoD and may be available to community members of the RAB at installations participating in the DERP. TAPP must be requested by a majority of community members of the RAB.

How does a RAB operate?

How do RABs receive TAGs and TAPP?



Visit the EPA Web site for more information on TAGs at http://www.epa.gov/superfund/tools/tag/

DoD's TAPP information is available on the DENIX Web site at https://www.denix.osd.mil/denix/Public/Library/Cleanup/CleanupOfc/Documents/RAB/tapp_brochure.html

A RAB must follow an application process to apply for either a TAG or TAPP before either one can be obtained.

Before applying for a TAG, a group must first confirm its eligibility to receive funding from EPA. The following table highlights the groups who are eligible and not eligible to receive TAGs. If a group is eligible they must submit a letter of intent to EPA.

Eligible Groups for TAGs	Non-Eligible Groups for TAGs
Groups living near an NPL site	Potentially responsible parties
Groups affected by a release or threatened release of contaminants	Academic Institutions
Groups whose economic well-being, health, or enjoyment of the environment are threatened	City or county governments
All groups must be non-profit or working toward non-profit status	Groups established or supported by the government

Each group of TAG applicants must acknowledge dedication of time, resources, and management of its future TAG. Additionally, groups applying for TAGs must justify how the funds will be used once the TAG is awarded and establish an accounting system for reporting costs to EPA.

TAPP applicants should notify the installation of their intent to apply for TAPP. The RAB community members must demonstrate that the technical expertise gained through TAPP is not available through another government agency and that it will benefit the community's understanding of environmental restoration activities. The RAB must agree and certify by majority to apply for TAPP before the application can be considered. Once the request has been formally submitted to the Installation Commander, the TAPP project must be reviewed to ensure it meets eligibility requirements. The following table highlights eligible and non-eligible TAPP activities.

Eligible Activities for TAPP	Non-Eligible Activities for TAPP
Interpreting technical documents	Lawsuits or other legal activities
Assessing technologies	Political activities or lobbying
Participating in relative risk site evaluations	Collecting new data samples
Reviewing health risks	Epidemiological testing
Training	Community outreach efforts

Are there funding ceilings on TAG and TAPP monies?

Yes, there are funding ceilings on TAG and TAPP monies. Each RAB is eligible for funding up to $100,000 or 1% of estimated restoration costs with a maximum of $25,000 allowed per year. EPA should be contacted for more specific information regarding TAGs.

How does a RAB operate?

Why do RABs keep records of their activities?

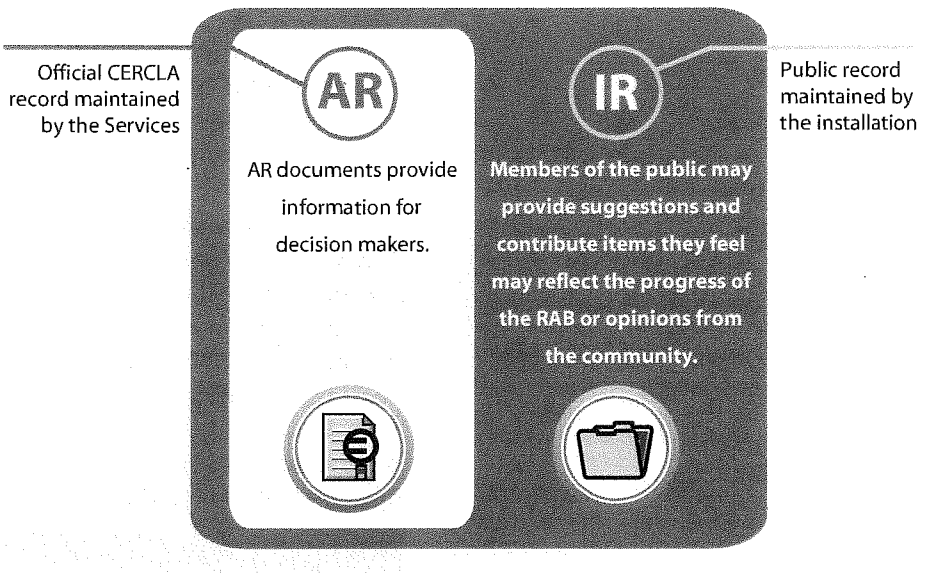
RABs keep records of their activities for historical purposes and to keep the community informed of their progress at the installation. Each year, the Office of the Secretary of Defense reports to Congress activities performed by RABs, advice they have provided, how much each RAB received for TAPP, and funds used by RABs for administrative support, which are all recorded in the administrative record and the information repository.

What is the difference between the administrative record and the information repository?

The administrative record (AR) is the official record of documents that form the basis for selecting a response action required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The information repository (IR) is the public record maintained by the installation that includes information beyond what is included in the AR. Members of the public may contribute comments, newspaper articles, or other items.

The IR and a copy (or copies) of the AR are generally made available at publicly accessible locations, such as libraries.



How often are the AR and IR updated?

The AR and IR are updated with relevant information as such information becomes available.

Who updates and reviews the AR and IR?

The AR is reviewed and maintained by the Component responsible for environmental restoration. Frequently the RPM is responsible for the AR. The IR is also maintained by the Component responsible official.

6 How does a community or installation know when a RAB has completed its work and is no longer needed?

A RAB's work is complete when there are no longer any environmental restoration activities at an installation because the installation has either reached a remedy in place or response complete, or when the community is no longer sufficiently interested. At that time the RAB should complete the documentation of its activities and begin the process of adjournment.

What is an example that may lead a RAB to adjourn?

An example of a situation that may lead a RAB to adjourn may include, but is not limited to, the completion of environmental restoration activities at the installation.

How long can a RAB be adjourned?

A RAB is considered permanently adjourned unless new conditions are discovered, which could lead a RAB to reestablish itself. Examples of these conditions are a change in the environmental restoration remedy or renewed community interest. For more information on reestablishment, please see Chapter 8: *Can an adjourned or dissolved RAB be reestablished?*

Does a RAB have to adjourn when land is transferred to a non-DoD entity?

If DoD relinquishes control of the cleanup and property, such as through property transfer to a non-DoD entity, then DoD will also relinquish support of the RAB. If the community wishes to continue its involvement, an independent group may be formed to continue the functions of the RAB or the community may work with EPA or the state environmental regulatory agency to establish a group equivalent to a RAB. DoD will not provide representatives to serve on these groups, nor the resources to support them when the Department is no longer involved in environmental restoration at the installation.

Can a RAB continue operating after environmental restoration activities are complete?

Under certain circumstances, it may be appropriate for a RAB to continue operating after environmental restoration activities are complete at an installation. For example, the RAB may meet to review the outcome of a CERCLA five-year review, or meet to discuss long-term management of land use controls implemented in connection with the environmental restoration activities at the installation.

What do community and installation members do if a RAB has to be adjourned because there is no sustained interest, but environmental restoration activities are ongoing?

Persons interested in ongoing environmental restoration activities should contact the installation POC to express their interest and seek information on any other community involvement programs available at the installation. Continued stakeholder feedback is important to the progress of restoration activities at installations, especially when they are ongoing. Following the decision to adjourn, the Installation Commander will also continue to evaluate community interest at least every 24 months while environmental restoration activities are still ongoing.

Does a RAB have to be formally adjourned?

No. A RAB may stop meeting without any formal adjournment if a community loses interest. However, the Department recommends that the RAB formally adjourn to provide community members an opportunity to participate in the decision to adjourn. Formally adjourning a RAB provides all parties with a sense of closure.

How does a community or installation know when a RAB has completed its work and is no longer needed?

RAB adjournment table

An installation may...	
Adjourn a RAB if...	• Record of Decision is signed for all sites, • Response complete at all sites, • All remedies in place, • Achieved RAB goals • Land transferred to a non-DoD entity, or • No longer sufficient and sustained community interest.
And the Installation Commander...	Consults with, and considers all comments provided by: • Community, • EPA, • States, • Tribes, and • RAB members.
Then the Installation Commander may...	Adjourn the RAB.
And the Installation Commander shall...	• Notify RAB members and the public of the decision through writing and publication in a local newspaper. • Describe other ongoing public involvement opportunities. • Document the rationale for adjournment in a memorandum for inclusion in the administrative record.

7 What happens if a RAB becomes ineffective?

A RAB can stop its activities in one of two ways—either by adjourning or dissolving. Dissolution is appropriate when the RAB has become ineffective and is no longer fulfilling the intended purposes of advising and providing community input to the installation and decision makers on environmental restoration projects.

What could lead a RAB to dissolve?

RABs dissolve when members are no longer able to offer input because the RAB has developed irreconcilable issues and cannot provide input in a constructive manner as intended. Dissolution may be necessary if RAB meetings are spent discussing unrelated issues or if members are unable to collectively discuss the environmental restoration activities affecting the installation and community.

Is dissolution permanent?

Dissolution of a RAB may be, but is not necessarily, permanent. A RAB may be reestablished if community interest increases or if environmental restoration activities are ongoing or reoccur. If a RAB was dissolved because of irreconcilable issues, it may be reestablished if the cause for dissolution has been resolved.

What does the community and installation do if a RAB is dissolved, but environmental restoration activities are ongoing?

Persons interested in ongoing environmental restoration activities should contact the installation POC to express their interest and seek information on other community involvement programs available at the installation. Continued stakeholder feedback is important to the restoration progress at installations, especially when restoration activities are ongoing. The Installation Commander will continue to evaluate community interest at least every 24 months following a RAB's dissolution. If the community interest in a RAB is reignited and sustainable, it is possible for a RAB to be reestablished. (See Chapter 8 for more details on reestablishing a RAB.)

Can a RAB receive conflict resolution support before deciding to dissolve?

Yes. Dissolution should be a last resort to resolve a RAB's ineffectiveness. The Installation Commander should explore means to resolve the conflict such as by hiring a professional facilitator or mediator, directly addressing membership issues, or involving the installation's PA Officer.

Is professional conflict resolution available and funded by DoD?

Yes. An installation may provide a professional facilitator to facilitate its RAB. Facilitators are paid with environmental restoration funding.

What happens if a RAB becomes ineffective?

RAB dissolution table

An installation may...	
Dissolve a RAB if...	RAB no longer fulfills purpose and responsibility.

And the Installation Commander...	• Notifies co-chairs, Deputy Assistant Secretary (DAS), and ODUSD(I&E) in writing.
	• Provides 30 day public comment period for RAB members and the public.
	• Consults with:
	  • Community,
	  • EPA,
	  • States,
	  • Tribes, and
	  • RAB members.
	• Reviews comments,
	• Provides supporting documents and recommends dissolution to the DAS.

And the DAS...	Notifies ODUSD(I&E) of the decision and rationale to approve or disapprove the dissolution request.
Then the DAS may...	Dissolve the RAB.

8 Can an adjourned or dissolved RAB be reestablished?

RABs may be reestablished if they have been adjourned or dissolved. Reestablishment reflects community interest in an installation's environmental restoration activities and provides continued interaction between DoD and communities.

Can inactivity lead a RAB to never be reestablished?

No. It is always possible for an adjourned or dissolved RAB to be reestablished no matter how long it remained inactive. As long as there is sustained community interest and DoD continues to have control of the cleanup and/or property a RAB may always be reestablished.

How is membership determined when a RAB is reestablished?

The length of time the RAB has been adjourned or dissolved may affect how membership terms will be decided at reestablishment.

If a RAB is being reestablished following a short-term hiatus, the installation, community, and RAB may benefit from contacting former members and gauging their interest in resuming their positions with the RAB.

If there are members who choose not to return to the RAB following a short- or long-term break, or if the Installation Commander is no longer able to identify or contact former co-chairs and members, then the Installation Commander should follow the operating procedures and RAB Rule to establish new members and/or co-chairs. This process will follow membership procedures as if a new RAB were being established.

How are operating procedures affected when an adjourned or dissolved RAB is reestablished?

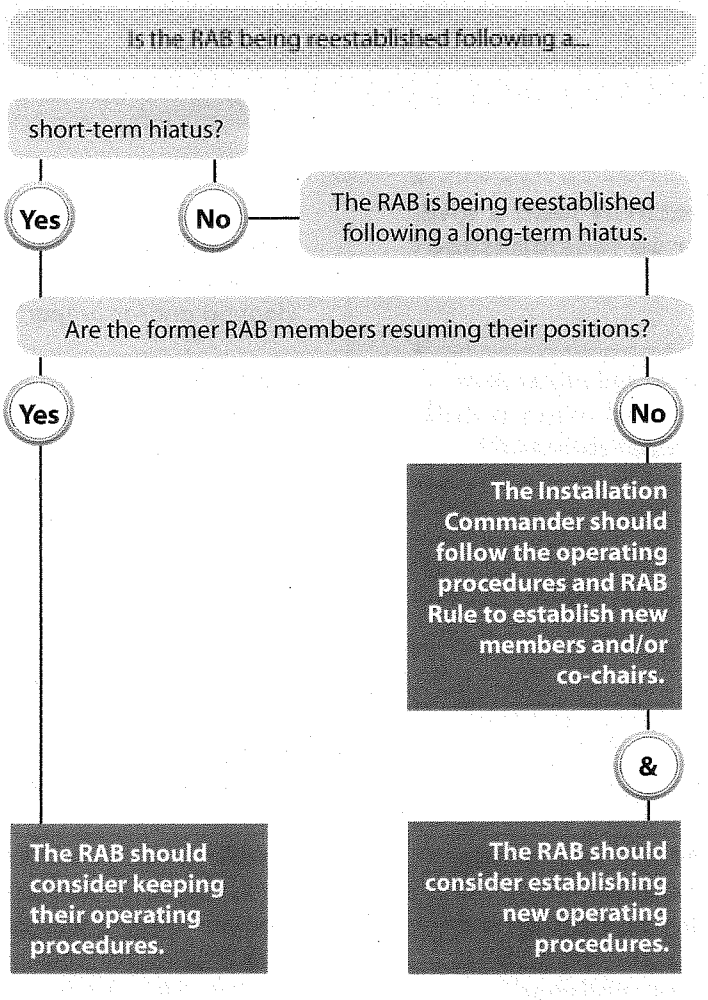
If a RAB is being reestablished following a short-term adjournment and the former RAB members will resume their positions, then the RAB should consider keeping their prior operating procedures. This will allow the RAB to resume responsibilities in the same capacity as when the RAB adjourned. If former RAB members are not interested in resuming their positions and new members are recruited into the RAB, then the new RAB members should develop new operating procedures.

If a RAB is being reestablished following a long-term adjournment with either new or former members, the RAB may want to consider if it is necessary to establish new operating procedures based on the length of time the RAB was adjourned.

If a RAB is reestablished following either a short- or long-term dissolution, it may be necessary for the RAB to develop new operating procedures once membership is determined. The RAB may want to consider inserting language into the operating procedures that will help prevent the issues that caused dissolution to occur within the original RAB.

The following flow chart provides a summary of these determinations:

Can an adjourned or dissolved RAB be reestablished?



Should a RAB be reestablished if dissolution conditions still exist?

No, a RAB should not be reestablished if the dissolution conditions still exist. Reestablishing a dissolved RAB requires approval from the Component's Environmental DAS. (Please refer to Chapter 7 for conflict resolution support and availability.)

How will the community know if there are activities that may require reestablishment at a formerly dissolved or adjourned RAB?

The community should be informed of new activities or requirements through the community relations process. In addition, the Installation Commander will continue to evaluate community interest at least every 24 months following the decision to dissolve or adjourn a RAB. The installation will also provide status reports through mailings or local information repositories on issues that may interest the community and prompt reestablishment.

9 What happens to RABs at installations that are closing or have been closed under base realignment and closure (BRAC)?

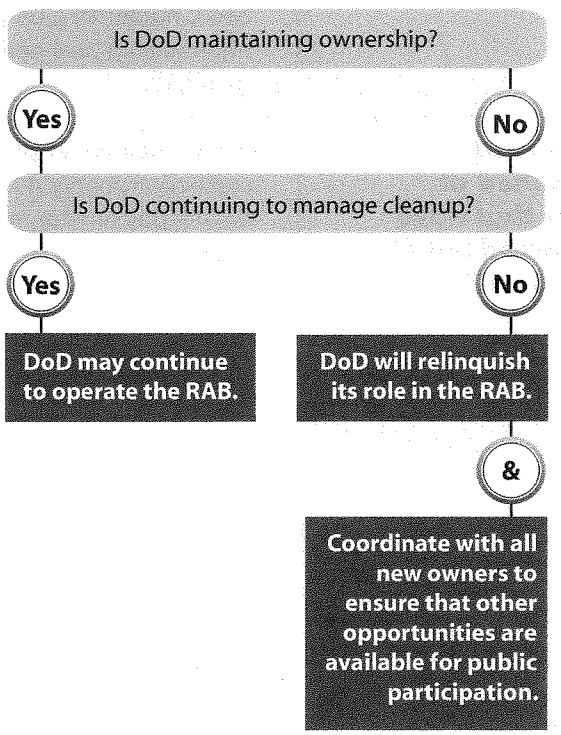
An installation may be closed or slated for closure under BRAC. When chosen for closure, DoD generally will transfer ownership of the installation to another person or entity at some point in the future. Because RABs are funded and supported by DoD, the transfer of the installation to a non-DoD entity will affect the continued existence and operation of the RAB.

Will the RAB on a closing installation continue to operate?

If a RAB exists at an installation that is closing under BRAC, DoD may continue to operate the RAB as long as DoD maintains ownership of the property and continues managing cleanup activities. Once the installation is transferred out of DoD control and DoD is no longer responsible for cleanup activities, DoD will relinquish its role in the RAB. DoD will work with the new owner, EPA, the tribe with jurisdiction over the property (if any), and the state environmental regulatory agency to encourage the availability of opportunities for members of the community if the community desires to continue to participate in the process.

Can the RAB on a closed installation continue to operate if DoD transfers the installation to a new owner under early transfer and continues to conduct the cleanup?

If DoD transfers the property but continues to manage the cleanup, DoD will continue to support the RAB. Community members should contact the new owner, EPA, the tribe with jurisdiction over the property (if any), and the state environmental regulatory agency for opportunities to provide input.



What happens to RABs at installations that are closing or have been closed under BRAC?

How can I provide input on environmental restoration activities after DoD has transferred ownership and cleanup responsibility?

Once DoD has transferred ownership and environmental restoration responsibility of the installation, community members who are interested in any ongoing environmental restoration activities at the former installation should contact the installation's new owner, EPA, the tribe with jurisdiction over the property (if any), and the state environmental regulatory agency to find out about opportunities to provide input and participate in the cleanup process. For example, the new owner may agree to meet with community members on a regular basis for their input or the EPA, tribe with jurisdiction over the property (if any), or the state environmental regulatory agency may decide to continue a forum similar to the RAB.

Can I form a group to provide input if DoD is no longer involved?

The Department will neither sanction nor support community groups interested in providing input for environmental restoration activities once it has withdrawn from active involvement at an installation. However, there may be other venues that interested community members can use.

Can I reestablish a RAB on a closed installation?

A RAB that has adjourned or dissolved may not be reestablished at a closed installation if it is no longer owned by or being actively cleaned up by DoD. However, if the installation is closing and DoD still owns the property and is carrying out environmental restoration activities at the installation, then a RAB may be reestablished.

See Chapter 8: *Can an adjourned or dissolved RAB be reestablished?* for membership and operating procedure questions regarding reestablishment of a RAB.

Can RABs be reestablished at installations that have been transferred out of DoD control?

A RAB may be reestablished at installations that have been transferred out of DoD control only if DoD reacquires the installation or continues to perform day-to-day environmental restoration response activities.

ATTACHMENT B-11

RAB COMMENT LETTER ON SITE PROPOSED PLAN

(4 pages)

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD

Mr. George Brooks
Department of the Navy
Base Realignment and Closure, Program Management Office West
1455 Frazee Road
San Diego 92108

September 12, 2009

Re: IR Site 2 Proposed Plan

Dear Mr. Brooks,

Thank you for the opportunity to comment on the above document.

With the support of the Sierra Club and Audubon Society, we wish to state that the proposed plan for Site 2 does not meet the needs of the Wildlife Refuge or protection of wildlife and the Bay.

We have commented in the past that the characterization of the site is not complete enough to make an informed decision as to remediation. After commenting on the Remedial Investigation and the Feasibility Study, no further investigations were performed to establish a sound basis for action. Sampling was sparse and monitoring wells are widely spaced.

The costs of the Navy's preferred alternative (soil capping and institutional controls) do not include the future costs of repairs and environmental damages due to seismic failures of the landfill berm. The costs of near-complete removal and disposal have been inflated ($73 MM was included for remedial design). The focused removal alternatives 4 and 5 should have been given more serious consideration. Therefore, these alterations cannot be evaluated accurately as to preference.

The evaluation of the Ecological Risk Assessment by Michael Johnson stated that high body weights for each receptor were used, ingestion rates were not calculated for each receptor, home range assumptions for species were incorrect, tissue concentrations in various taxa were improperly used to determine the exposure point concentrations and all bioaccumulation factors were defined as being equal to one. This resulted in the lowest probability of exposure and thus the lowest risk and resulted in the elimination of antimony, beryllium, cobalt, manganese, mercury, selenium and thallium as chemicals of concern. Selenium is a chemical of great impact to avian species, especially during migration. Because the Navy manipulated data current conclusions are not reliable.

Sampling overall was so minimal that contaminants, such as molybdenum, uranium, titanium and thallium, were eliminated because there were inadequate data to determine toxicity and groundwater sampling was collected only twice a year and intermittently over time resulting in a lack of reliable data.

The wetlands areas were not evaluated because of impacts to resident species, yet the Navy states that there are no taxa present in the wetlands and no species of concern. The only evaluation of flora was of non-native invasives. It is stated that tissue samples could not be taken as no animals were found in the ponds. However, it is also reported that stickleback fish were observed. It is also stated that benthic species are not present in the South Pond because the pond is not permanent year round and highly saline. However, vernal pools are also not year round and are know to contain organisms during the time when there is water in them and saline ponds contain organisms.

The Navy has stated that water and soil tests performed on samples from the South Pond showed no negative impact on sea urchins. It is very unusual to have a body of water such as this not contain living organisms. The first tests

conducted on benthic species of soil and water resulted in extensive life failures. The second series of tests used organisms not found in the Bay waters, but appear to be chosen because they resist contamination. The choice of organism for testing water quality could result in no adverse effect because it is not affected by exposure to tributyl tin; however, worms and crustaceans are and that would explain the lack of arthropods in the ponds. Given the degree of manipulation to which the Navy resorted to reduce the chemicals of concern in the landfill proper, it is not unreasonable to expect that similar efforts were made to reduce contaminant loads in the pond samples.

There is a significant benzene plume under both ponds (ITSI September 2006). It is very likely that this plume is degrading the pond. The benzene plume has been shown to extend to the bay and that there is a source area to the northeast of the North Pond. Bioremediation would remove the hot spot and reduce the impact to the water quality of the ponds but this is not considered. Additionally, the Remedial Investigation found TCE and 1,4 dioxin in water samples.

Sandblasting grit, tributyl tin, was spread through the area and is an inhibitor of invertebrate growth. This could clearly lead to the lack of organisms in the ponds. Also dredge spoils from Seaplane lagoon were deposited in the wetland area. Building 5 discharged heavy metals and radioactive materials to Seaplane Lagoon through the stormdrain system. The lack of investigation of either of these constituents means that the wetlands may be left contaminated and of inferior quality to wildlife.

The landfill is identified as a municipal landfill by the State of California Department of Toxic Substances Control. However, the number and concentration of heavy metals, radiological nuclides, airplane engine parts, PCB containing oil, OEW and chemical drums belies this. This is clearly an industrial dump and requires more thorough evaluation and clean up than a municipal dump. Mount Trashmore, a municipal (residential and commercial wastes) landfill at the east end of Alameda, operated from 1953 to the 1970s. Its closure measures include a low-permeability clay cap, a gas collection system and a slurry cut-off wall along the side abutting San Leandro Bay. It seems incongruous that Site 2 which received toxic industrial wastes should have less vigorous closure requirements.

Even if it could be called a municipal landfill, Federal regulations require groundwater released from a municipal landfill to meet MCLs. Additionally, State Water Resource Control Board resolution 68-16 and 92-49 apply to the site and should be adhered to. Therefore, off-shore impacts need to be monitored. There are no off-shore monitoring locations to insure protection of the Bay shown in the Proposed Plan.

The landfill cap proposed is not suitable for burrowing animals. Because the RAB has been continuously told no animals live on the site and all documents state the site is uninhabited, the RAB requested four feet of cover and a rodent barrier. However, now that it is known that there are ground squirrels on site, even four feet of cover is not adequate. Ground squirrels in order to thrive need six feet of soil in which to burrow. The presence of ground squirrels provides a suitable diet for red tailed hawks and other raptors, keeping them from preying on the least Tern chicks. If the ground squirrel colony does not thrive, this may lead to significant negative impacts to the California least tern colony. This was not considered in developing the proposed plan. This least tern colony has consistently provided a significant percentage of annual fledglings for the entire species listed as endangered by the US Fish and Wildlife Service. Due to these potential impacts the Navy should enter into a consultation with the Service concerning the Proposed Plan and the potential impacts to the least tern colony of the preferred alternative and its proposed institutional controls.

Soil samples were taken primarily at or near the surface, or outside the areas where wastes were deposited in the landfill and dredge spoils area. Groundwater sampling was widely spaced and intermittent.

The exploratory trenches, or "pits", were relatively shallow (a maximum of four feet deep) compared to the depth of the wastes. The proposed plan states that no drums were found. This is not significant because the trenches were

so shallow, because the trenches were dug outside the designated drum disposal areas and because the trenching areas were prescreened for metal, using a Schonstedt magnetometer to avoid areas where there was buried metal.

From the RAB's 2008 site tour, it appears that the surface elevation of the landfill is 15 to 20 feet above the water level in North Pond. The Proposed Plan describes the construction of Site 2 as starting with the construction of the seawall, followed by filling in the enclosed shallow bay waters with wastes. The wastes probably extend to a depth considerably below sea level, as has been shown in cross-sections cited by Dr. Oberdorfer in her comments. This implies that there is a considerable depth of waste material that has never been sampled. Using the estimated waste tonnage of 1.6 MM tons, the site area of 77 acres and typical in-place densities for wastes, it is estimated that the average waste depth is between 13 and 22 feet. As the fill probably is not homogenous, the maximum depth could be considerably greater.

The Navy's preferred soil alternative (Alternative 2) of a soil cover and rodent barrier does not appear adequate to prevent the release of contamination into the ponds and Bay following a design basis earthquake. Foster Wheeler's 2003 Geotechnical Feasibility Study for Site 2 showed lateral displacements of 20 feet due to slope instability and/or liquefaction during a strong earthquake. The Foster Wheeler analysis only looked at the seismic stability of the seawall. It is likely that the berm next to the landfill also would be subject to slope failures of about 20 feet due to a strong event. Large earthquakes on the Hayward Fault are known to occur at about 140 year intervals. As it has been almost 140 years since the last large earthquake on that fault, it is certain that the landfill will experience a strong earthquake in the not too distant future. The Navy will continue to be responsible for the resulting damages due to the release of contaminants, for repairs to the seawall, berm and land fill cover and for litigation costs associated with lawsuits brought by public entities and environmental groups.

The point of release to the waters of the Bay is the culvert in the landfill berm abutting North Pond. Except for the landfill portion in the northwest corner of the site, the seawall does not adjoin the landfill. The monitoring wells along the western and southern sides of the wetlands are unlikely to detect any contaminants because of the diluting effect of the Bay waters flushing contaminants out through the culvert.

Although the Feasibility Study mentions radium and radioactivity as being present within the body of the landfill (as opposed to the near surface), the Proposed Plan implies that radiological wastes are not present below the surface. This appears to be misleading. The first full paragraph on the right side of page 2 lists potential sources of contamination as "...general household waste and several industrial and process wastes, including asbestos, pesticides, sandblasting grit, waste oils and solvents, painting and plating wastes, inert ordnance and medical wastes", but does not mention radiological wastes. On page 3 the first paragraph under Remedial Investigation Summary states that no radiological wastes were found during test pit activities. The cost estimate for Alternative 6 (near complete removal) includes costs of $552 MM, out of a total of $903 MM, for radiological screening and disposal. The Navy must consider sub grade (below two feet) radiological contamination to be a major potential cost.

The selected remedies should take into account global climate change and rising sea levels. It is irrelevant that other low-lying areas of Alameda may be subject to future inundation, that will be addressed separately. This long-term view is especially important because of toxic chemicals resistant to natural degradation and the 1,600-year half-life of radium 226.

There should be more monitoring wells along the west side of the landfill berm, as that is the most likely location for releases to the waters of the ponds and the Bay.

Tributyl tin should have been carried forward as a contaminant of concern. It is present in the sandblasting grit used as road base to construct the roads and berm in the landfill. It also should be present in the dredge spoil

disposal area in the wetlands as those dredging wastes came from Seaplane Lagoon. Tributyl tin toxicity values are listed and were considered in the RI for Seaplane Lagoon.

Under the Navy's preferred soil remedy additional exploratory trenching is planned in the northeast and northwest corners of the site. These trenches should be deep enough to characterize the wastes, not just materials on or near the surface. Characterization should not be solely visual; samples should be taken and analyzed for chemicals of concern, including radioactivity.

The proposed plan does not include adequate monitoring wells to guarantee the safety of the ponds and bay.

Regardless of the final remediation path chosen by the Navy and approved in the ROD, the Navy should retain responsibility for the remediation of all residual contaminants not identified or treated as a result of the final remediation actions that are revealed in the future (regardless of new owners of the property) and for all berm maintenance into the future to ensure that any contaminants remaining in the landfill are not released into the Bay due to berm failure.

The proposed plan does not include two for one mitigations for impacts to the ponds from the construction of the landfill cover.

Again, thank you for the opportunity to comment on this document.

Yours

Arthur Feinstein

Arthur Feinstein, Sierra Club Public Lands Committee

Fred Hoffman

James D. Leach

Jim Leach

Dale Smith

Jim Sweeney

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