



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

May 8, 2014

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950 West Mall Square, Alameda City Hall West
Room 140, Community Conference Room
Alameda Point
Alameda, California

The following participants attended the meeting:

Co-Chairs:

Derek Robinson Base Realignment and Closure (BRAC) Program Management Office
(PMO) West, BRAC Environmental Coordinator (BEC), Navy Co-chair

George Humphreys Restoration Advisory Board (RAB) Community Co-chair

RAB Members

Richard Bangert; Susan Galleymore; Carol Gottstein, M.D.; James Leach; Skip McIntosh; Bert Morgan; Kurt Peterson; Bill Smith; Dale Smith; Jane Sullwold; Michael John Torrey

Community Members/Public Attendees

Robert Sullwold

Regulatory Agencies

James Fyfe, California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC); John West, California Regional Water Quality Control Board (Water Board)

City of Alameda

Peter Russell, Russell Resources/City of Alameda (City)

Contractors

Lucas Goldstein, Arcadis; Phil Nicolay, Arcadis; Jessica O'Sullivan, Tetra Tech; Tommie Jean Valmassy, Tetra Tech

MEETING SUMMARY

I. Welcome and Introductions

George Humphreys (RAB Community Co-Chair) called the May 2014 former Naval Air Station Alameda (Alameda Point [AP]) RAB meeting to order, and initiated a round of introductions.

Derek Robinson (RAB Navy Co-Chair) reviewed the agenda. The meeting agenda is provided as Attachment A.

II. Co-Chair Announcements

Mr. Humphreys provided a list of documents he received in March through early May, 2014 (Attachment B). He noted that the Proposed Plan (PP) for Operable Unit (OU) 5 was issued on May 5, but had not been listed on the Navy's handout of upcoming documents.

Mr. Robinson said the Navy will hold a public meeting for the PP for OU5. The meeting will be held on May 20, 2014, at the Alameda Public Library.

Mr. Robinson also announced that the California least terns have arrived on AP. The Navy and contractors are taking precautions, including driving different routes to avoid the colony, and reducing light and noise.

Mr. Robinson provided a list of upcoming deliverables for May 2014 (Attachment C).

III. Community and RAB Comment Period

Kurt Peterson (RAB Member) said there is a $\frac{3}{4}$ -mile radius no-fly zone around the least terns during the nesting period, April 1 through August 15. He asked if anyone had informed the Department of Veteran's Affairs (VA) about this land deed restriction document, as it affects the area they will take over. Richard Bangert (RAB member) said the VA does not yet have the property, and said this is an issue that should be addressed with the Oakland Airport. Mr. Peterson said he recently went to a public meeting for the Port of Oakland regarding noise abatement. The Federal Aviation Administration (FAA) was present, and they were unaware of any such flight restrictions around AP. Mr. Robinson said he will inform VA of the no-fly zone.

Dale Smith (RAB member) said she is concerned about the issue of perfluorooctanesulfonic acid (or perfluorooctane sulfonate [PFOS]). While she believes the Navy previously told her it is not a problem, she researched the issue. Her inquiries indicate PFOS, which was banned by the EPA in 1992, was frequently used as a fire retardant, has a half-life of 41 years, and binds to soil. She read a study that indicates it may be affecting harbor seals. Ms. D. Smith said she will forward the preliminary study she read to Mr. Robinson.

IV. Operable Unit (OU) 2B Groundwater Treatment Design

Mr. Robinson introduced Phil Nicolay (Arcadis) to present the update (Attachment D). Mr. Nicolay introduced Lucas Goldstein (Arcadis), who also worked on the treatment design.

For the purpose of this project at OU2B, Mr. Nicolay said any reported concentrations greater than 10,000 parts per billion is considered a "hot spot" for volatile organic compounds (VOCs). He said the treatment is using the existing population of microbes in the subsurface, but they are introducing substrate to help the microbe population grow. Mr. Humphreys asked what is being injected into the subsurface. Mr. Nicolay said it is emulsified vegetable oil along with cheese whey. Michael John Torrey (RAB member) asked if the vegetable oil and whey will clean up the VOCs. Mr. Nicolay said they will not, but they will feed the organisms that digest and break down the VOCs. Mr. Nicolay clarified that trichloroethene (TCE) is the contaminant of concern at OU2B.

Mr. Bangert said he recalled that during the pilot study, bacteria were injected to augment the existing population. Mr. Nicolay said that may not be necessary, but is a contingency within the treatment design.

During the review of slide 10, Mr. Humphreys asked about the injections. Mr. Nicolay said the injections are gravity-fed, but pressure can be added if necessary. Each well has a radius of influence of about 7.5 feet. Mr. Humphreys asked if there would be any extraction; Mr. Nicolay said no, just injection. He added that each well will have about 4,000 gallons of substrate injected twice a year, which is a small amount in comparison to the overall plume. He clarified that the purple on the map indicates wells that are near hot spots. Mr. Bangert asked how the substrate will be transported on-site to Alameda Point. Mr. Nicolay said the substrate is typically diluted on-site using a fire hose, so the total amount will not have to be transported. Mr. Goldstein clarified that the concentration of substrate is about 2 to 3 percent, although the design is flexible.

During the review of slide 9, Jane Sullwold (RAB member) asked why the design does not call for emulsified vegetable oil at hot spots. Mr. Nicolay said why is easier for the bacteria to use quickly. However, it does not last as long, so they will monitor for continued activity.

Ms. Smith asked which specific metals are being monitored in groundwater. Mr. Goldstein said they will monitor for arsenic, total chromium, and chromium 6.

During the review of slide 15, Mr. Nicolay corrected the date of the delivery of the final remedial design document from July to August 2014.

Ms. D. Smith asked if there will still be contaminants at a depth of greater than 30 feet below ground surface, and how they will be addressed. Mr. Nicolay said there is some contamination at a depth of 40 feet, but the rest is in the 15-30 foot below ground surface area. Ms. Smith asked about the potential for a soil vapor release. Mr. Nicolay said there is no pathway for soil vapor migration below 30 feet.

Mr. Humphreys said he had previously supplied an article about the Savannah River project. Vegetable oil was injected to a 60 foot depth into groundwater, where it sequestered chlorinated solvents and concentrated them at the groundwater surface, where they were biodegraded. Mr. Robinson said that he was unfamiliar with the Savannah River project. Mr. Robinson said he had referred the article to the Navy for evaluation, but not to the contractor. Carol Gottstein (RAB member) added that why has nitrogen, which is needed by the microorganisms for growth.

Bill Smith (RAB member) asked for confirmation that this site is anaerobic, which is the opposite of most petroleum bioremediation projects. Mr. Nicolay said that is correct. Mr. B. Smith asked about Arcadis' track record using this treatment at other sites. Mr. Nicolay said they have had success at other sites. He gave an example of a 160-acre former NASA site with tetrachloroethene (PCE) contamination. The treatment began in 2005 and they did injections for six years. The site has been in post-remediation monitoring for 3 years and is successful. There is now a hospital on that site. Peter Russell (City of Alameda) asked if this treatment has been tried before in a saline environment. Mr. Nicolay said making this successful in a saline environment involves adding more carbon.

Robert Sullwold (community member) asked if Arcadis is the contractor who will be implementing this treatment. Mr. Nicolay said no, Arcadis is only contracted to prepare the design. Mr. Sullwold said the City of Alameda is seeking contractors to redevelop this area, and asked how remediation will take place concurrently with redevelopment. Mr. Robinson said this part of OU2B will not

be transferred to the City before it has been treated. Dr. Russell said the City is not anticipating conveyance of this area until 2020.

Referring to the aboveground intake pipes and vents at Site 13 in OU 2A, Mr. Humphreys asked if baseline sampling will be conducted prior to start-up of the treatment. Mr. Nicolay confirmed it will be. Mr. Humphreys also asked if there will be any air injections. Mr. Nicolay said that depends on the conditions at each well. If benzene levels are too high, the well will not be vented, and if it cannot be extracted, there will be injections. Mr. Torrey asked how often the solar panel system will be monitored. Mr. Nicolay said initially it will be monitored daily, then that schedule will be reduced.

V. Annual Tour Date Locations

Mr. Robinson thanked Susan Galley (RAB member) for her assistance in gathering RAB input on possible tour locations since the last meeting. After a discussion, it was decided the RAB meeting and the tour will be held on the same day – Saturday, July 12, 2014. The RAB meeting will be prior to the tour, from 10:00 a.m. to 12:00 p.m., and the tour will be 12:30 p.m. – 2:30 p.m. RAB members voted and determined that the preferred tour locations will be: Site 1, Site 2, Building 400, and OU2B. Dr. Gottstein asked that the Navy provide a flyer announcing the tour at the upcoming Proposed Plan public meeting on May 20, 2014.

VI. Approval of Meeting Minutes/Review Action Items

Mr. Humphreys asked for comments on the draft March 2014 meeting minutes.

Dr. Gottstein made the following comment:

- Page 2, Section II, second paragraph three lines up from the bottom: change “roads which are...” to “rose, which is...”

Ms. Sullwold made the following comment:

- Page 2, Section III, second paragraph, third sentence: after “20 acres on Alameda Point” add “..., including the Bachelor Officer Quarters, ...”

Skip McIntosh (RAB member) made the following comment:

- Page 3, second line: strike “Dr. Matasovic said the Marsh Crust...” and change to “Skip McIntosh (RAB member) said the Marsh Crust...”

Mr. Humphreys made the following comments:

- Page 2, Section III, second paragraph, third sentence: change “at Encinal High School” to “near Encinal High School.”
- Page 3, third full paragraph, end of the fourth line: strike “said the Hayward Fault has movement every 2-4 years...” so it reads “Mr. Humphreys noted the clock for a 140-year seismic event started in 1865.”
- Page 3, fifth full paragraph, last line: change “not” to “no”, so it reads “...there is no waste, just sand.” Then add “Mr. Humphreys stated that the remedial action work plan for IR 1 has a waste isolation barrier that is designed to slide sideways as a unit some 15 feet or more during a major seismic event. He asked what the effect on the barrier would be if only a section of the wall moved and the rest stayed in place. Mr. Humphreys requested that this be added to the list of action items. Mr. Matasovic replied that he was unfamiliar

with closure design, but that it would have to meet state of California closure regulations. Dr. Gottstein suggested that the landfill operations ceased before the closure regulations went into effect.

Mr. Robinson reviewed the action items; see updated table.

The minutes were approved with the preceding changes incorporated. The next RAB meeting will be held on Saturday, July 12, 2014 at 10:00 a.m. The meeting was adjourned at 8:29 p.m.

Action Items:	Previous Item #/ Action Item Status/ Action Item Due Date:	Initiated by:	Responsible Person:
1. Request for Presentations: a. OU-2A Tarry Refinery Waste and Rail Cars	Pending	RAB	Mr. Robinson
2. Navy to look into video-conferencing capabilities at various Alameda locations	Ongoing	RAB	Mr. Robinson
3. OU-5/FISCA IR-02 Navy to investigate whether a return to anaerobic conditions after cessation of biosparging will result in contaminant concentrations at the groundwater/soil interface	Pending	Mr. Humphreys	Mr. Robinson
4. Navy to locate the Loma Prieta seismic report for AP (Pacific Earthquake Engineering Report (PEER))	Complete	Ms. D. Smith	Mr. Robinson
5. Mr. West will email Ms. D. Smith some study information, including the breakdown products of soil tack.	Complete	Ms. D. Smith	Mr. West
6. Mr. Robinson will send photos of the OU-2A vent pipes once they are installed, along with the plan drawings and an explanation of how they should work	Complete	Mr. Humphreys	Mr. Robinson
7. Navy will answer the question: what happens if part of the IR Site 1 waste isolation barrier moves and the rest stays in place?	Pending	Mr. Humphreys	Mr. Robinson

Action Items:	Previous Item #/ Action Item Status/ Action Item Due Date:	Initiated by:	Responsible Person:
8. Ms. D. Smith will forward a copy of the preliminary study she read related to PFOS.	New	Mr. Robinson	Ms. D. Smith
9. Provide a flyer announcing the community tour at the May 20 Proposed Plan public meeting.	New	Dr. Gottstein	Mr. Robinson

ATTACHMENTS

NAVAL AIR STATION ALAMEDA RESTORATION ADVISORY BOARD MEETING ATTACHMENTS

- A. Naval Air Station Alameda Restoration Advisory Board Meeting Agenda, May 8, 2014 (1 page)
- B. Documents Received during March - May 2014 – provided by George Humphreys (1 page)
- C. Upcoming Deliverables, May 5, 2014 – provided by Derek Robinson (1 page)
- D. Remedial Design Operable Unit 2B IR Sites 3, 4, 11 & 21 (16 slides)
- E. OU2C Status Update [handed out but not discussed] (1 page)

RESTORATION ADVISORY BOARD

NAVAL AIR STATION, ALAMEDA

AGENDA

MAY 8, 2014, 6:30 PM

**ALAMEDA POINT – 950 WEST MALL SQUARE, ALAMEDA CITY HALL WEST
SUITE 140/COMMUNITY CONFERENCE ROOM**

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

<u>TIME</u>	<u>SUBJECT</u>	<u>PRESENTER</u>
6:30 – 6:35	I. Welcome and Introductions	Community and RAB
6:35 – 6:45	II. Co-Chair Announcements	Co-Chairs
6:45 – 7:15	III. Community and RAB Comment Period*	Community and RAB
7:15 – 8:00	IV. OU2B Groundwater Treatment Design	Mr. Phil Nicolay
8:00 – 8:15	V. Yearly Tour Date and Locations	RAB
8:15 – 8:30	VI. Approval of Minutes	RAB
8:30	RAB Meeting Adjournment	

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

Documents Received During
March-May 2014

1. "Final, Remedial Action Completion Report, Installation Restoration Site 34, Alameda Point, Alameda, CA", CD and replacement pages 9 and 10 in Sections 3.4.1 and 3.4.2, March 11, 2014 (received March 12, 2014), prepared by ERS Joint Venture for Department of the Navy, Base Realignment and Closure, Program Management Office West, cover letter of transmittal from CKY Inc, San Pedro, CA.
2. "Draft Final, Soil Remedial Action Work Plan Operable Unit 2B. Installation Restoration Sites 3 and 4, Alameda Point, Alameda, California" prepared by ARCADIS U. S., Inc. for Naval Facilities Engineering Command Southwest, April 2014, (received April 15, 2014)
3. "Final, Remedial Design and Remedial Action Work Plan, Operable Unit 2A, IR Sites 9, 13 and 19, Alameda Point, Alameda, California, April 30, 2014", prepared by Geosyntec Consultants Inc., submitted by CAPE, for Naval Facilities Engineering Command, BRAC Program Management Office West (received May 1, 2014)
4. "Proposed Plan for Alameda Point Operable Unit-5/FISCA-02 Groundwater, Alameda, CA, May 2014", prepared by BRAC Program Management Office West. Received May 2, 2014 (comments due June 5, 2014).
5. "CD-Final Remedial Design and Remedial Action Work Plan, Operable Unit 2A, IR Sites 9, 13 and 19, Alameda Point April", prepared by CAPE (transmitted May 5, 2014, received May 6, 2014).

**Upcoming Deliverables, May 5, 2014
Alameda Point, Alameda, CA**

Site	Upcoming Document	Transmittal Date
OU-5	Proposed Plan	5/5/2014
Site 1	Draft Final RD/RAWP for Soil	5/7/2014
OU-2B	Preliminary Remedial Design	5/8/2014
OU-2B	Final RAWP for Soil Excavation	5/15/2014
Site 17	Draft Final RACR	6/19/2014

Remedial Design Operable Unit 2B IR Sites 3, 4, 11 & 21



Former Naval Air Station Alameda

May 8, 2014

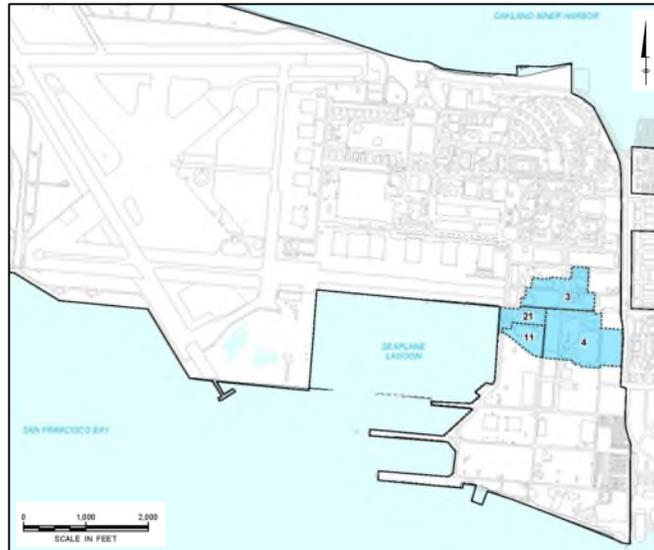


Overview / Agenda



- Review of OU2B remedy and remedial goals
- Proposed Remedial Design
 - *In Situ* Bioremediation (ISB)
 - VOC Hot Spots
 - VOC Low Concentration Plume
 - Monitoring (Groundwater and Soil Vapor)
 - Land Use Controls (Soil and Groundwater)
- Schedule

Background: OU-2B Location



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BRAC Program Management Office

Source: OTIE 2011

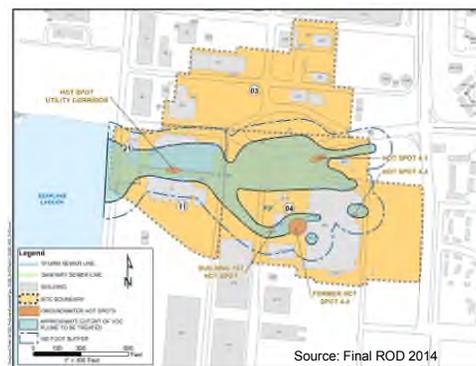
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Groundwater Remedy – Final ROD



Alternative GM-3b: Hot-spot and shallow groundwater treatment, monitoring, and ICs (Draft Final ROD, 2014)

- ISB for treatment of remaining shallow groundwater (≤ 30 feet bgs)
- Monitoring
- ICs applied over VOC plume and 100-ft lateral buffer



Source: Final ROD 2014

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BRAC Program Management Office

Remedial Action Objectives (RAOs)

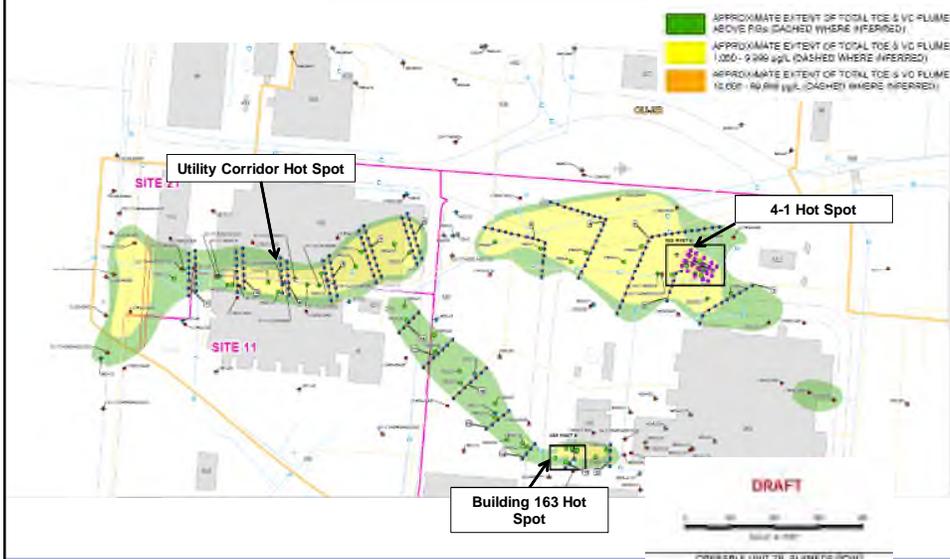


RAOs for remediation of OU-2B groundwater:

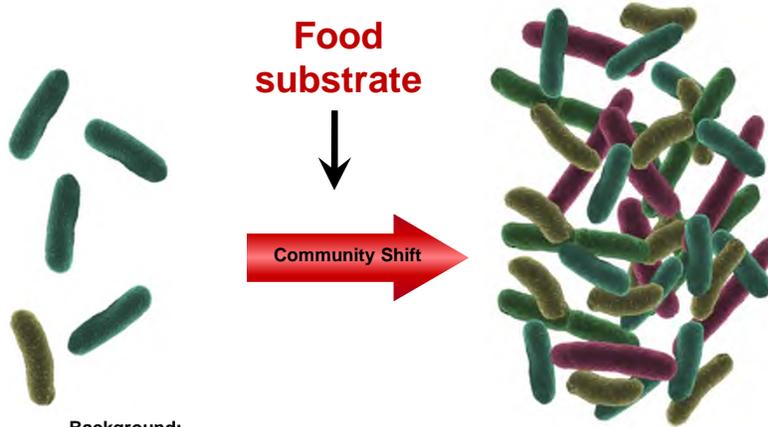
- Minimize the potential for exposure of on-site receptors to COC vapors from groundwater at concentrations exceeding their respective RGs for protection against indoor air risks
- Minimize the potential for migration of impacted groundwater into Seaplane Lagoon at concentrations exceeding the values derived based on potential surface water discharge ARARs

COC	RG – indoor air RBC, commercial use (ppb)	RG – discharge to Seaplane Lagoon (ppb)
TCE	116	810
VC	31.4	Not applicable, wells below 5,250 ppb

2013 OU2B Groundwater VOC Plume Limits



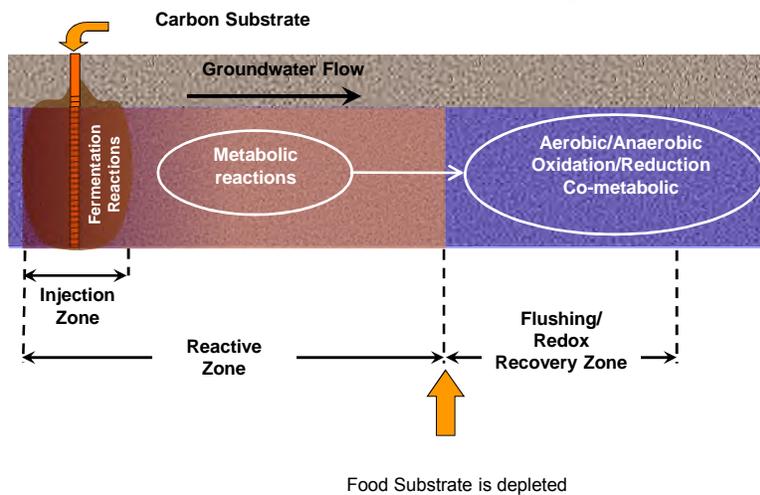
ISB - Microbial Stimulation



- Background:**
- Carbon limited
 - Low density of organisms
 - Steady-state conditions

- Stimulated:**
- Carbon rich
 - High numbers of organisms
 - Dynamic and synergistic

ISB - Reactive Zone Structure



OU2B Groundwater Remedial Design Summary

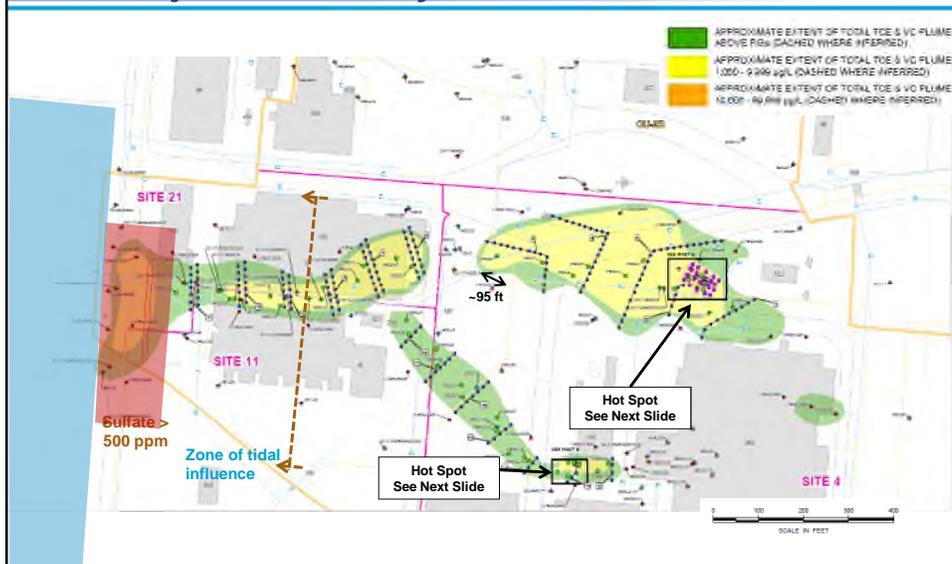


- Low concentration VOC plume ISB approach:
 - Injection of diluted cheese whey and emulsified vegetable oil
 - Injection wells in a transect (line) layout
 - Mobile injection units to retain flexibility
- Hot spot ISB approach:
 - Injection of cheese whey
 - Injection wells in a grid layout
 - Injection enhancements (if needed)
- Remedial Performance Monitoring Program

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BRAC Program Management Office

Low Concentration VOC Plume Design Injection Well Layout



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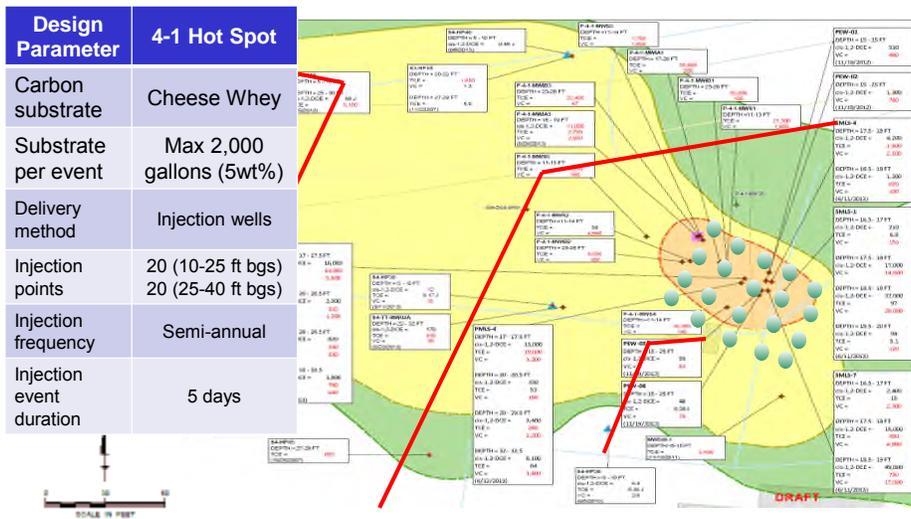
BRAC Program Management Office

Low Concentration VOC Plume Design Details

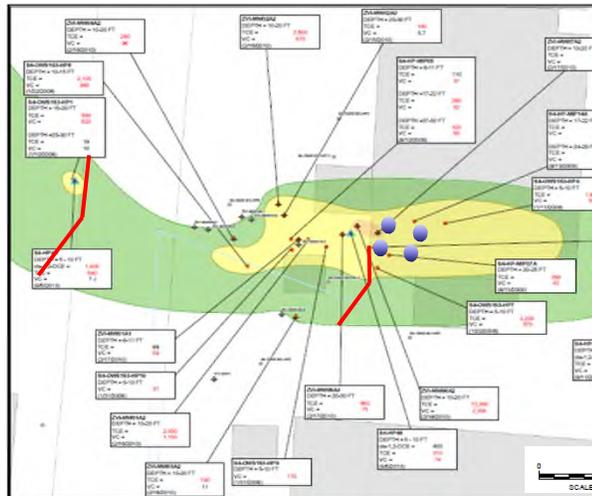


Design Parameter	Diffuse Plume (5 yrs active treatment)
Food (carbon) substrate	Cheese whey and emulsified vegetable oil (EVO)
Total injection volume per event	246,000 gallons
Substrate per event, EVO	4,000 gallons
Substrate per event, whey	3,100 gallons
Delivery method	Injection wells
Injection wells	197
Injection frequency	Twice per year 1 st year (whey); every 2-3 years for EVO
Injection event duration	~35 days

4-1 Hot Spot Design



Building 163 Hot Spot Design



Design Parameter	Bldg 163 Hot Spot
Carbon substrate	Cheese Whey
Substrate per event	Max 130 gallons (5wt%)
Delivery method	Injection wells
Injection points	4 (10-20 ft bgs)
Injection frequency	Semi-annual
Injection event duration	3 days

OU2B – ISB Remedial Monitoring



Soil Vapor

- Methane

Groundwater

- VOCs
- Total Organic Carbon
- Methane, ethene, ethane
- Metals
- Tracer
- pH
- Biological Analysis

Schedule



- **Preliminary Remedial Design Review**
–May 8 through June 23, 2014
- **Final Remedial Design – July 2014**
- **Remedial Implementation – 2015 to 2020**

Questions?



Operable Unit (OU) 2C Status Update

Alameda Point RAB Update

OU-2C Record of Decision and Remedial Actions

The estimated schedule for OU-2C follows:

- April 2014: Operable Unit 2C Record of Decision considered final, awaiting signatures. Final ROD excludes storm water and industrial waste lines outside Buildings 5/5A and 400 that have not been removed; State signatures being completed
- May 31, 2014: Issue final signed Operable Unit 2C Record of Decision
- Early June 2014: Resume Building 400 radiological surveys
- Late June 2014: Begin further investigation of industrial waste line
- September 2014: Award contract to conduct radiological surveys and remediation of materials in Building 5
- September 2014: Award contract to prepare remedial design and conduct remediation for OU-2C shallow groundwater
- August 2015: Begin shallow groundwater remediation
- 2015: Begin ROD preparation for storm water and industrial waste lines outside Buildings 5/5A and 400 that have not been removed
- 2020: Complete active groundwater treatment of OU-2C shallow groundwater (monitoring may continue)

Note: Further schedule details will be available following award of contracts to conduct the OU-2C work.