



**FINAL
FORMER MARINE CORPS AIR STATION (MCAS) TUSTIN
101st Restoration Advisory Board (RAB) Meeting Summary
24 September 2015**

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MCAS TUSTIN
SSIC NO. 5090.3.A



Meeting Location: Tustin Senior Center, 200 South C Street, Tustin, California

Meeting Date/Time: 24 September 2015/7:06 PM to 8:17 PM

Summary Prepared by: Tony Guiang, Accord MACTEC 8A Joint Venture (AM8AJV)

Attachments:

Presentation Slides:

- City Of Tustin Neighborhood E Site Inspection Update, Former Marine Corps Air Station Tustin

Attendees: A total of 15 people were in attendance for the Former MCAS Tustin RAB meeting:

Navy: Jim Sullivan, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and RAB Co-Chair; and Marc P. Smits Navy Remedial Project Manager (RPM).

Regulatory Agencies: Patricia Hannon, Regional Water Quality Control Board, Santa Ana Region (RWQCB).

RAB Members: Mary Lynn Norby; Robert Kopecky; Don Zweifel; John Edwards; and Matt West.

Other Attendees: Harry Takach, Pacific States Environmental Contractors, Inc.; Haley Celovsky, Environ; D. Todd Schmieder, Tait Environmental; Dhananjay Rawal, Environmental Compliance Solutions, Inc. (ECS); Mike Wolff, ECS; Tony Guiang and Teresa Toye, AM8AJV.

WELCOME/INTRODUCTIONS/AGENDA REVIEW:

Mr. Jim Sullivan (BEC and Navy RAB Co-Chair) welcomed everyone to the 101st Former MCAS Tustin RAB meeting and thanked everyone for attending. Mr. Sullivan asked for self-introductions from those in attendance.

Mr. Sullivan reminded everyone that the BRAC office has relocated and although all email addresses have remained the same, phone numbers have changed. Mr. Sullivan stated he received excused absences from Ms. Desire' Chandler, RAB Community Co-Chair and Ms. Susan Reynolds (RAB member).

Mr. Sullivan announced that Mr. Rafat Abbasi is the new Department of Toxic Substances Control (DTSC) representative. He noted Mr. Abbasi was not able to attend this RAB meeting but he will be at the next scheduled meeting in March 2016.

Mr. Sullivan asked Ms. Patricia Hannon (RWQCB) to provide the Regulatory Agency update.

REGULATORY AGENCY UPDATE:

Ms. Patricia Hannon (RWQCB)

Ms. Hannon noted that a few documents were submitted for RWQCB review since the last RAB Meeting in March 2015. She listed a number of documents that are currently in review including the following: Draft Addendum to the Remedial Design/Remedial Action Work Plan (WP) for Sites 11, 13 West, Site 5S(a), IRP Site 6, and the Mingled Plumes Area; Draft 2014 Annual Long Term Monitoring (LTM) Report for OU3, also known as the Moffett Trenches; 2014 Annual Institutional Control (IC) Compliance Monitoring Report; WP for Site Assessment and Removal Action at Neighborhood D South (Areas 1 and 2); and the 2014 Annual Performance Evaluation for the Groundwater Remedy at OU-1A and 1B.

Environmental Program Status Update

Mr. Sullivan stated the Environmental Program Status Update was presented at the last meeting with a multi-slide show presentation that covered all of the sites. He said the Navy is in the process of preparing an abbreviated version of the presentation, which provides a brief overall summary of the site status. Mr. Sullivan noted most of the sites are in the operations, maintenance, and long term monitoring phase, which is a mature phase for the environmental program. Mr. Sullivan said the Navy would finish the update for the site status and would send the updated presentation to the RAB Members with the next RAB Mailer.

Mr. Sullivan invited Mr. Marc P. Smits (Navy RPM) to provide the only presentation of the evening.

PRESENTATION:

City of Tustin Neighborhood E Site Inspection Update, Former Marine Corps Air Station Tustin

Slide 1 – Presentation Title

Slide 2 – Presentation Overview

Slide 3 – Figure showing the location of Neighborhood E at Former MCAS Tustin.

Mr. Smits noted that neighborhood E is property that was transferred to the City of Tustin. He pointed to the area within Neighborhood E that is the subject of the Site Inspection (SI) marked by a dashed white line.

Slide 4 – Provides a brief background of Neighborhood E and explains why the Navy decided to conduct further groundwater investigation at the Site as part of the SI.

Mr. Smits explained the first step in the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) process is a Preliminary Assessment, which involves conducting document reviews, followed by the SI.

Slide 5 – Provides the SI objectives which include investigating the alleged occurrences of the contaminant of concern (COC), specifically trichloroethylene (TCE) and its degradation products, and presenting conclusions and recommendations for the Site under the CERCLA process.

Mr. Smits explained that the investigation at Neighborhood E was currently in the SI phase of the CERCLA process. He noted a WP was prepared to implement three quarterly groundwater monitoring rounds at three newly installed monitoring wells. Mr. Smits invited Mr. Mike Wolff (ECS) to continue with the presentation.

Slide 6 – Provides a summary of the Conceptual Site Model (CSM).

Mr. Wolff provided a brief explanation of the CSM. He explained that because conditions at the Site may have changed since the initial investigation was conducted, the CSM was re-evaluated for this Site. Further, he explained the CSM summarized what the Navy thought was occurring at the Site. The CSM implies that the current conditions have changed due to pumping/removal of the groundwater during soil removal activities and open excavations left after soil removal activities were completed.

Slides 7 and 8 – Provides a summary of Neighborhood E SI activities.

Mr. Wolff summarized the activities that occurred at Neighborhood E. He explained the SI activities focused on the locations where TCE and its degradation products were detected during the initial excavations, which occurred between 2008 and 2010. Further, by concentrating on these areas, the results of the SI would present a “worst case” scenario. He explained that in addition to the three rounds of groundwater sampling proposed in the approved WP, a fourth round of sampling was conducted to further confirm results from previous rounds. He added that nothing out of the norm was detected in the fourth round of sampling.

Slide 9 – Figure showing the results from the Neighborhood E SI.

Mr. Wolff explained the yellow outline on the figure showed the area of the excavations conducted up to 2010. He noted that the locations of highest grab groundwater sample concentrations, identified in red, coincide with the locations of the newly installed monitoring wells. Further, the blue triangles mark the locations where hydro punch samples were installed and collected by Brown and Caldwell (B&C) in 2012.

Slide 10 – Provides a summary of TCE concentrations detected in the three wells.

The table shows that TCE concentrations detected in the four sampling rounds were mostly detected below maximum contaminant levels (MCLs) for TCE and the degradation products.

Slides 11 and 12– Provides a summary of the Neighborhood E SI conclusions.

Mr. Wolff asked Mr. Smits to present the remainder of the presentation.

Mr. Smits explained the CSM had changed since TCE was first detected during the 2008 to 2010 timeframe. He noted that as a result of the excavations and subsequent dewatering at the Site, TCE concentrations in groundwater are significantly lower than those collected during the soil excavation activities. This is evident in the TCE concentrations detected during the recent (past four rounds) of groundwater sampling which show concentrations are mostly below MCLs.

Slide 13 – Provides a summary of Neighborhood E recommendations; specifically no further evaluation for at the Site.

Mr. Smits stated that the Draft SI report was issued today and that copies of the Executive Summary including 11 x 17 figures from the report were available as handouts. He also stated Agency and City of Tustin comments were due back to the Navy on November 11, 2015.

Slide 14 and 15 – Provides a list of acronyms and questions, respectively.

A question and answer forum took place upon completing the slide presentation.

Mr. Harry Takach (Community member) asked whether multiple aquifers were considered during the development of the CSM. Mr. Smits replied only the first water-bearing zone (FWBZ) was considered because if contaminants were low or not-detected in this zone, it is unlikely contaminants may have seeped into deeper zones. If higher concentrations were found in the FWBZ, the second water-bearing zone (SWBZ) would have been considered.

Ms. Mary Lynn Norby (RAB member) asked what the City's plans for reuse was for Neighborhood E. Mr. West replied Neighborhood E was intended for industrial reuse; specifically for office space. He noted the "Neighborhood" designation is often misleading but is common nomenclature used for simplicity by the City for most properties.

Mr. John Edwards (new RAB Member with the South Orange County Community College District [SOCCCD]) noted that in previous years, the water table in Orange County has been dropping to around 32 feet below ground surface (bgs) in some areas owing to the drought conditions. He asked what effect the forecasted El Nino and accompanying rise in the water table would have on the contaminants in groundwater. Mr. Smits replied that rising water table would most likely not have any impact on the contaminant concentrations at the Site because contaminants are detected at such low concentrations. To augment, Mr. Wolff noted that historically, the effects of a wet year only add to dilution of contaminant concentrations.

Mr. Matt West (RAB member) asked at what depths groundwater samples were collected. Mr. Smits replied groundwater samples were collected at approximately 20 to 30 feet bgs. This depth was relative to the surface contour and a known datum point at the surface from which the depth is measured. Mr. West asked whether the B&C groundwater samples collected by hydropunch method were collected at the same depths as those collected in the monitoring wells. Mr. Wolff responded that groundwater samples collected by hydropunch were arbitrary because in some locations the hydropunch was only able to penetrate down to 20 feet bgs. Mr. Smits noted a cross section in the B&C Report shows samples were collected when groundwater was first encountered in the FWBZ.

Mr. D. Todd Schmieder (Community member) asked how groundwater samples are collected. Mr. Wolff provided a detailed description of the United States Environmental Protection Agency (USEPA) approved low-flow sampling method. He noted the monitoring wells were constructed with discrete screen intervals placed at specific depths in consideration to where the FWBZ was encountered. Further, the low-flow method for sampling groundwater lends itself to less agitation and disturbance of the aquifer so that volatile organic compounds do not volatilize. The low-flow method allows for more control of the flow rate and insures representative water from the aquifer is flowing into the pump and collected for analysis. This is accomplished when groundwater parameters (electrical conductivity, temperature pH, dissolved oxygen) are stable. He noted a less preferred method of collecting groundwater samples was by dropping a bailer into the well.

Mr. Don Zweifel (RAB member) asked why USEPA objected to using a bailer. Mr. Wolff explained there is very little control when using the bailer method because by dropping the bailer into the well, the aquifer can become agitated and volatiles that might otherwise be in the groundwater will volatilize. Further, even by dropping the bailer into the well slowly, you cannot always insure this practice is being implemented consistently. He noted the USEPA ran controlled tests for these different methods and their conclusion was there is too much randomness when using the bailer approach. Mr. Zweifel asked when the USEPA approved the low-flow as the preferred method for groundwater sampling and asked whether costs were taken into consideration. Mr. Wolff replied the low-flow method has been used for over 10 years and although the cost to implement is higher, in this case the Navy is only sampling three wells and therefore the costs are insignificant. Mr. Smits noted in cases where you are sampling over 100 wells, then costs can have an impact.

Mr. Schmieder asked whether the low-flow method and continuous pumping could conceivably extract the chemicals that would otherwise be present in groundwater. For example, Mr. Schmieder noted that as water is being extracted from the aquifer through continuous pumping, its clarity improves and he asked whether the same would hold true for chemicals. Mr. Wolff replied that continuous pumping would have no impact on TCE concentrations in water. The continuous pumping by low-flow method would insure representative groundwater from the aquifer is being extracted through the pump at a steady rate with little to no agitation and/or disturbance.

Mr. Zweifel asked Ms. Hannon for her opinion on the use of low-flow method for groundwater sampling. Ms. Hannon replied the Water Board prefers the use of the low-flow method for groundwater sampling because it introduces less agitation and/or disturbance in the aquifer. Further, it insures representative water from the aquifer is being collected for analysis.

Ms. Norby asked for further clarification on the Data Quality Objective (DQO) seven-step process. Mr. Smits provided a detailed explanation of the DQO process developed by USEPA to insure the right questions were being asked to support the project objectives. He explained that although the intent was to collect data, it was equally important to know what to do with the data once it was compiled. The DQO presents the problem; provides information on how to evaluate the data; and provides end statements or a path forward once data is obtained and evaluated. He explained that the DQO process was a stepwise approach used for CERCLA

investigations. Mr. Sullivan added that the DQO process is prepared during the development of the WP.

Ms. Norby asked for clarification on the timeline for the investigation. Mr. Smits explained the Navy received the letter from the City requesting the Navy return to the Site in January 2012. A contract had to be in place prior to preparing the WP. This explains the large time gap between the Navy receiving the letter from the City to when the WP was issued. Further, there was the process of preparing a draft WP and having it reviewed by the Agencies and the City, responding to comments, and then issuing the Final WP. Mr. Smits noted once the Final WP was issued in June 2014, well installation and subsequent sampling took place. Ms. Norby asked whether this process has delayed development of the property. Mr. West replied the City has had the title for the property for over 13 years adding that currently the City is engaged with development of the southern half of Neighborhood E. He noted that having to wait a couple of years has not made that much of a difference with regard to development considering the overall time elapsed.

Mr. Zweifel asked if there were current restrictions at the Site. Mr. West replied there are some restrictions now. Mr. Smits added that throughout this process, the Navy and the City have worked together and coordinated their efforts so that minimal delay is incurred during redevelopment and while the investigation is occurring.

Mr. Zweifel asked who currently owned the property. Mr. Smits replied the City currently owns the property. However, the Navy has returned to the Site to conduct further investigation at the City's request because a CERCLA contaminant was detected during redevelopment activities.

Mr. Zweifel asked what the Navy is recommending for the Site. Mr. Smits replied the SI Report, which was just issued as a Draft, would present the Navy's recommendation for no further evaluation at the Site. Mr. Sullivan added the SI Report will be reviewed by the Agencies and the City and the Navy is requesting comments from all parties by November 11, 2015.

FUTURE TOPICS/SCHEDULE FOR NEXT RAB MEETING AND SUBCOMITTEE MEETING/MEETING EVALUATION AND CLOSING

Mr. Sullivan discussed the date for next meeting and asked for recommendations for future topics.

Mr. Robert Kopecky (RAB member) made a motion to vote on the new membership application for Mr. John Edwards. The motion was seconded by Mr. Zweifel and the RAB unanimously approved Mr. Edward's application and membership to the RAB.

Mr. Zweifel asked for an update on the OU-1A and OU-1B Treatment Systems.

Mr. Sullivan noted an update on neighborhood E might also be a good topic for discussion at the next RAB.

Mr. Kopecky asked if the Navy could prepare a presentation on new cleanup technologies and procedures that may present greener solutions for cleanup of soil and groundwater.

In closing, Mr. Sullivan thanked everyone for attending the 101st Former MCAS Tustin RAB meeting and stated that he looks forward to seeing everyone in March 24, 2016 for the 102nd meeting. The RAB meeting adjourned at 8:17 PM.

LIST OF HANDOUTS PROVIDED AT THE MEETING:

- 24 September 2015 Former MCAS Tustin RAB Meeting Agenda
- Presentation Slides: "City of Tustin Neighborhood E Site Inspection Update, Former Marine Corps Air Station Tustin"
- Draft Site Inspection Report Neighborhood E Groundwater (w/ 11x17 Figures)
- Environmental Websites
- Points-of-Contact Former MCAS Tustin
- RAB Mission Statement and Operating Procedures
- Former MCAS Tustin RAB Fact Sheet/Membership Application
- Former MCAS Tustin Mailing List Coupon

Copies of the meeting summaries and handouts are available at the IR for Former MCAS Tustin located in the Government Publication Section of the University of California at Irvine, Ayala Science Library, in Irvine, California. Library hours are 10:00 AM to 8:00 PM Monday through Thursday; 10:00 AM to 5:00 PM Friday; and 1:00 PM to 5:00 PM on Saturday and Sunday. The library phone number is (949) 824-7362 or (949) 824-6836. Copies of the meeting summaries and handouts are also available in the CERCLA AR File.

Final Summaries from previous RAB meetings can be found on the internet at the Navy BRAC Program Management Office (PMO) website: www.bracpmo.navy.mil.

INTERNET SITES:

Navy and Marine Corps Internet Access: BRAC PMO website (includes RAB meeting summary): <http://www.bracpmo.navy.mil/>

Department of Defense – Environmental Cleanup Home Page Website:

Homepage: <http://www.dtic.mil/envirodod/>

U.S. EPA:

Homepage: www.epa.gov

Superfund information: www.epa.gov/superfund

National Center for Environmental Assessment: www.epa.gov/ncea

Federal Register Environmental Documents: www.epa.gov/federalregister

California Agencies:

California Environmental Protection Agency Homepage: www.calepa.ca.gov

DTSC: www.dtsc.ca.gov

Department of Health Services: www.cdph.ca.gov

Santa Ana RWQCB: www.waterboards.ca.gov/santaana

Additional Websites: Reuse and Redevelopment

City of Tustin: www.tustinlegacy.com



City of Tustin Neighborhood E Site Inspection Update Former Marine Corps Air Station Tustin

Restoration Advisory Board (RAB) Meeting

Marc Smits, PE, Navy Remedial Project Manager
Michael Wolff, PG, CEG, ECS Project Manger

24 September 2015

Presentation Overview



- Location
- Background
- Conceptual Site Model (CSM)
- Site Inspection (SI) Activities
- Summary of Results
- Conclusions
- Recommendations
- Acronyms

Background – Neighborhood E



- The objective of the SI was the following:
 - Investigate the alleged occurrences of TCE and TCE degradation byproducts in groundwater within the Neighborhood E investigation area
 - Present the conclusions and recommendations regarding further evaluation/no further evaluation under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

- The DON prepared a Site Inspection (SI) Work Plan to conduct three (3) quarterly groundwater monitoring rounds at three (3) newly installed wells.

Neighborhood E Conceptual Site Model (CSM)



- The City's Contractor reported TCE and/or degradation byproducts exceeding MCLs in groundwater grab samples (2008-2010).

- Active pumping (approximately 1.9 million gallons) of excavations (dewatering) occurred through 2010.

- After 2010, groundwater seepage continued to accumulate and evaporate from the inactive excavations.

- A 2012 groundwater investigation by Brown and Caldwell (BC) reported TCE concentrations were non-detect or below the MCL.

Neighborhood E SI activities



- The SI activities focused on locations of highest reported TCE/degradation byproducts occurrence in 2008-2010.
- The SI results represent the “worst case” for Neighborhood E.
- Groundwater samples were initially collected from three (3) monitoring well locations in June, September, and December 2014 in accordance with the regulatory-approved Final Work Plan.

Neighborhood E SI Activities

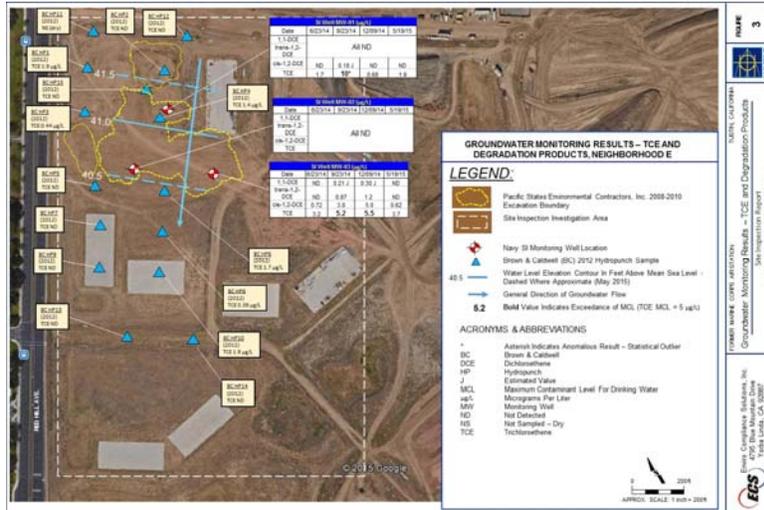


- Samples were analyzed for TCE and degradation byproducts (cis-1,2-dichloroethene (DCE); trans-1,2-DCE; 1,1-DCE, and vinyl chloride).
- The California Regional Water Quality Control Board, Santa Ana Region (RWQCB) requested total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylene (BTEX) and naphthalene also be analyzed.
- Navy conducted an additional monitoring round to further evaluate site conditions (4 rounds total).

Neighborhood E SI Results



Groundwater TCE Concentrations



Neighborhood E SI Results (cont.)



TCE Concentrations in Groundwater (micrograms per liter)

	MW-1	MW-2	MW-3
June 23, 2014	1.7	ND	3.2
September 23, 2014	10*	ND	5.2
December 9, 2014	0.68	ND	5.5
Additional Sampling Event:			
May 19, 2015	1.9	ND	3.7
Average – 4 events	1.43**	ND	4.23

(TCE MCL = 5 µg/L)

NOTES:

1. All units in micrograms per liter (µg/L)
2. Concentrations reflect greater value for duplicates; concentration in bold are above the MCL
3. *Asterisk indicates statistical outlier
4. **Double asterisk indicates that the statistical outlier was not included in the average; including the statistical outlier results in an average of 3.57 µg/L.
5. TCE degradation product concentrations (cis and trans 1,2-DCE, 1,1 DCE, vinyl chloride) – non-detect or below MCL for all constituents.

Neighborhood E SI Conclusions



- SI results supports the CSM; namely, that earlier reported TCE concentrations collected by the City's contractor were likely attenuated by dewatering and evaporation.

- DON's groundwater data was collected:
 - Utilizing quality assurance/quality control (QA/QC) protocols
 - From properly-designed monitoring wells, yielding repeatable, representative data

- SI results for current conditions of TCE in groundwater do not support the alleged occurrence of TCE at Neighborhood E from the 2008-2010 groundwater grab sample locations.

Neighborhood E SI Conclusions



- With the exception of the statistical outlier, results for TCE range in concentration from non-detect to 5.5 µg/L over four monitoring rounds.

- SI results do not support an ongoing source of TCE in groundwater within Neighborhood E.

- 2012 BC groundwater investigation covered a wider area and found no TCE above the MCL for 15 sampling locations.

- SI data and the data from the 2012 BC groundwater investigation provide multiple lines of evidence that TCE and degradation products do not present a concern for human health and/or the environment with the Neighborhood E investigation area.

Neighborhood E SI Recommendation



- The results are based on carefully-designed SI conducted in accordance with the U.S. EPA seven-step DQO process
- The SI data and 2012 BC data support the conceptual site model and provide multiple lines of evidence that TCE and degradation byproducts in groundwater do not present a concern for human health and the environment
- Navy recommends no further evaluation is warranted for TCE and its degradation byproducts under CERCLA within the area of investigation in Neighborhood E.

Acronyms



µg/L	micrograms per liter
1,1-DCE	1,2-dichloroethene
BC	Brown and Caldwell Consultants
BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Response Compensation and Liability Act
cis1,2-DCE	cis1,2-dichloroethene
CSM	conceptual site model
DON	Department of the Navy
ECS	Enviro Compliance Solutions, Inc.
MCAS	Marine Corps Air Station
MCL	Maximum Contaminant Level in drinking water
NAVFAC	Naval Facilities Engineering Command Southwest
PSEC	Pacific States Environmental Contractors, Inc.
SI	Site Inspection
TCE	trichloroethylene
trans1,2-DCE	trans1,2-dichloroethene

Questions?

