



FINAL

FORMER MARINE CORPS AIR STATION (MCAS) TUSTIN

86th Restoration Advisory Board (RAB) Meeting Minutes

Meeting Location: Tustin Senior Center, Tustin, California

Meeting Date/Time: 09 September 2009/7:10 pm - 8:00 pm

Minutes Prepared by: Tony Guiang, CDM

Attachment:

1. MCAS Tustin Environmental Program Status
2. Presentation Slides: "Operable Unit (OU) -3 Update"

WELCOME/INTRODUCTIONS/AGENDA REVIEW:

Mr. Jim Callian, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and Navy RAB Community Co-Chair, welcomed everyone to the 86th RAB meeting.

Mr. Callian asked for self-introductions and asked all those in attendance to please sign the sign-in sheets. A total of 17 people were in attendance. Mr. Callian noted he had copies of all the agency correspondences since the last meeting (13 May 2009) and invited anyone to view them at their leisure. Mr. Callian introduced Mr. John Broderick as the new representative for the California Regional Water Quality Control Board, Santa Ana Region (RWQCB) and noted the Navy has worked with Mr. Broderick for many years at Former MCAS El Toro and is looking forward to having him on board for MCAS Tustin. Mr. Callian noted Mr. Broderick, who has taken over the position formerly held by Ms. Patricia Hannon, was not in attendance for this evening's RAB owing to recent government mandated furloughs. Mr. Callian also announced Mr. Sean McGoey as the new Navy Remedial Project Manager (RPM) for the groundwater monitoring program and OU-4B.

Prior to the meeting, Susan Reynolds (RAB member) and Don Zweifel (RAB Community Co-Chair) notified Mr. Callian they would be unable to attend the RAB meeting. Additionally, Ms. Cristina Fu (Department of Toxic Substance Control [DTSC]) sent an email notice she would not be able to attend this evening's meeting.

APPROVAL OF 13 MAY 2009 RAB MEETING MINUTES

Mr. Callian asked the RAB members if they had any comments or questions on the Meeting Minutes. No comments were made. Mr. Callian noted that finalization of the minutes would not occur until Mr. Zweifel was able to comment or concur on the draft minutes. Ms. Mary Lynn Norby, RAB member, commended the Navy for the level of detail provided in the meeting minutes. Mr. Zweifel later provided his concurrence on the meeting minutes in an email to Mr. Callian; the meeting minutes are therefore considered final.

ANNOUNCEMENTS/REVIEW OF ACTION ITEMS

Mr. Callian presented a series of slides which included a brief summary of the agenda, point of contact information for key BRAC Cleanup Team (BCT) members (noted by an asterisk on the overhead slides and handouts) and their Agency (United States Environmental Protection Agency [U.S. EPA], DTSC, and RWQCB) counterparts. In addition, he presented the locations, hours of operation, and points of contact for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Administrative Record (AR) File and CERCLA Information Repository (IR). Mr. Callian presented several slides on environmental websites including a resource made available through the DTSC called EnviroStor. Also included in the introductory slides were the proposed RAB meeting dates for the remainder of 2009 and for 2010.

Mr. Nicholas Steenhaut, from Environ on behalf of the South Orange County Community College District (SOCCCD), asked whether the same documents are found in the AR and IR. Mr. Callian responded, the IR is a subset of the AR file and therefore the documents are not the same.

MCAS TUSTIN ENVIRONMENTAL STATUS UPDATE

Mr. Callian presented the RAB with the MCAS Tustin Environmental Status (Attachment 1) update and copies of the update were distributed as part of the RAB handouts.

Mr. Callian provided a brief summary of the on-going operation and maintenance (O&M) activities and document milestones for Operable Unit (OU)-1A and OU-1B. He noted the chemical of concern (COC) in groundwater at OU-1A is 1, 2, 3-trichloropropane (1, 2, 3-TCP) found at Installation Restoration Program (IRP)-13 South and the COC in groundwater at OU-1B is trichloroethene (TCE) found at IRP-3 and IRP-12. Mr. Callian explained the activities and document milestones for OU-1A and OU-1B were the same and therefore would be discussed simultaneously.

Mr. Callian provided a brief summary of the on-going O&M activities and document milestones for OU-3 and explained the subject would be discussed in more detail in the RAB presentation.

Mr. Callian provided a brief summary of the upcoming field activities and document milestones for OU-4B which comprises six sites (IRP-5S[a], IRP-6, IRP-11, IRP-13W, Miscellaneous Major Spill -04 [MMS-04], and Mingled Plumes Area [MPA]). Mr. Callian noted a Draft Record of Decision (ROD) was issued in June 2009 for OU-4B and he brought in a copy of the document for the RAB to view. He explained the new format referred to as an I-ROD for "Improved" ROD, contains hyperlinks to references and is in line with the Navy's movement towards a "greener" approach. As indicated in the Proposed Plan (PP), Mr. Callian noted MMS-04 has the potential to be recommended for no further action (NFA) based on the preliminary results obtained from recent groundwater sampling at the site. Trichloroethene (TCE) was reported at a concentration of 0.44 micrograms per liter ($\mu\text{g}/\text{L}$) in a single well at the site, which is below the maximum contaminant level (MCL) of 5 $\mu\text{g}/\text{L}$. Mr. Callian explained a determination will be made to issue a NFA ROD or recommend NFA based on results from three more rounds of groundwater sampling from this well. Mr. Callian noted In-Situ Bioremediation (ISB) in

addition to Monitored Natural Attenuation (MNA) with Institutional Controls (ICs) was the selected remedy chosen for the MPA site.

Mr. Callian provided a brief summary of the upcoming field activities and document milestones for the methyl tertiary-butyl ether (MTBE) plume at Underground Storage Tank (UST) Site 222. Mr. Callian noted although the Air Sparging (AS)/Soil Vapor Extraction (SVE) system was shut down in September 2008. Based on rebound monitoring, the Navy will remobilize the AS/SVE system in the vicinity of one well location. Mr. Steenhaut asked whether this was a result of the rebound reported in the 1st Quarter 2009 Groundwater Monitoring Report and he asked whether there were subsequent sampling results collected after the issuance of this report to confirm additional AS was needed. Mr. Callian affirmed that the need to conduct more sparging is in response to the rebound reported in the 1st Quarter 2009 Groundwater Monitoring Report and subsequent sampling confirmed the 1st quarter results.

REGULATORY AGENCY UPDATE

Mr. Ram Peddada, DTSC

Mr. Peddada provided the RAB with an update of the documents reviewed by the DTSC since the last RAB meeting. The documents reviewed by Mr. Peddada included the following:

- Draft Operating Properly and Successfully (OPS) Report for OU-1A and OU-1B; and
- Draft OU-4B PP/Draft Remedial Action Plan (RAP).

In his discussion of the OPS Report for OU-1A and OU-1B, Mr. Peddada noted the DTSC was waiting for the Response to Comments (RTCs) from the Navy. He noted the property would not be suitable for transfer until the document is revised to DTSC's satisfaction.

Mr. Peddada noted the Navy presented their proposed remedy to address the low and medium concentration sites found in OU-4B during the February Public Meeting. He noted the DTSC has reviewed the Draft ROD/RAP and are currently waiting on the RTCs from the Navy. When comments are addressed to DTSC's satisfaction, the ROD/RAP will progress to a Draft Final.

In conclusion, Mr. Peddada opened the floor to comments or questions. In reference to OU-1A and OU-1B, Ms. Norby asked whether the Five-Year Review process would only take place after 1 year of groundwater monitoring has occurred at the sites and an OPS demonstration has been achieved. In response, Ms. Arnold explained the Five-Year Review is independent of the OPS demonstration and generally, is a requirement for sites where hazardous substances are left in place that don't allow for unlimited or unrestricted use. She added the Five-Year Review is a protectiveness determination to insure the remedy is effective and the start date is not contingent on the OPS. Ms. Arnold stated a Five-Year Review would take place for OU-1A and OU-1B.

Ms. Norby asked whether at least one year of monitoring is a pre-requisite for the OPS demonstration. Ms. Arnold responded one year of monitoring is typical although the length of time for monitoring is site-specific. Ms. Arnold referred Ms. Norby to the slide presentation on

OPS Demonstration given at the last RAB meeting and invited further discussion with Ms. Norby at the end of the meeting.

OU-3 STATUS UPDATE

Mr. Cardinale showed his presentation slides titled, "Operable Unit (OU)-3 Update, Former MCAS Tustin, California," (Attachment 2) and the slides were distributed as part of the RAB handout. His presentation provided an overview of background, remedy, key documents, long term operation and maintenance, 2008 Annual Groundwater Progress Monitoring Report, and upcoming document milestones.

Mr. Cardinale showed a site map from the 2008 Groundwater Progress Monitoring Report identifying the groundwater monitoring network at OU-3.

During Mr. Cardinale's discussion on the 2006 Five-Year Review for OU-3, Ms. Arnold reiterated OPS demonstration is not the trigger for a Five-Year Review. According to CERCLA and U.S. EPA guidance, Ms. Arnold explained the trigger for Five-Year Review is site-specific and she cited examples (initiation of construction or the signing of the ROD) of possible triggers. The next OU-3 Five-Year Review is scheduled in 2011; Ms. Arnold explained it is typical practice for other sites where remedies have been implemented to be included in one Basewide review.

Mr. Cardinale's presentation included photographs of the northwest and northeast side of OU-3 in Slides 12 and 13, respectively. Mr. Cardinale noted the containment wall adjacent to Peters Canyon Channel as shown in Slide 13 is inspected regularly for any cracks or seepage.

Mr. Cardinale noted the Navy has received agency comments on the Draft 2008 Annual Groundwater Progress Monitoring Report. He noted the RWQCB requested more information on field activities completed and he explained once comments are addressed, the Report is expected to progress to a Final version earlier than the November 2009 target date.

Mr. Cardinale concluded his presentation by opening the floor to comments and questions. Ms. Norby asked whether the containment wall had a life-span and whether the Navy expected future maintenance to occur. Mr. Cardinale responded the life-span for a concrete structure is typically 50 years and it was conceivable for maintenance to occur within that time frame. Any seepage or cracks would be evaluated and repaired.

Ms. Norby asked whether the [French Drain] located on the west side of Jamboree Road was providing containment and preventing migration of contaminants to the west. Mr. Callian explained although these French Drains, which are currently inactive, were installed as a precaution, groundwater flows to the southeast and therefore migration is not expected toward the west. In response to a comment from Mr. Harry Takach (Community Member), and as a final response to Ms. Norby's inquiry, Mr. Cardinale explained hydraulic containment is addressed by the containment wall along Peters Canyon Channel and not the French Drains west of Jamboree Road.

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

Mr. Callian announced the next scheduled meeting would take place on 4 November 2009 and provided the RAB with the schedule through December 2010. Ms. Norby asked whether further discussion took place on re-scheduling the meetings for a night other than Wednesday. Mr. Callian stated he conducted an evaluation and asked the various agencies what day would be most convenient for the meetings and it was agreed to keep the meetings scheduled on Wednesdays. In addition, he noted the importance of scheduling the meeting in advance in order to secure a meeting location. Mr. Kopecky (RAB member) thanked the Navy for scheduling the 2010 RAB dates this far in advance.

Mr. Callian asked for any suggestions on future topics. Mr. Matt Suarez (RAB Member and SOCCCD) asked if it would be possible to get an update on the AS proposed for UST Site 222. Mr. Callian noted the Navy would take the suggestion under consideration.

Ms. Norby asked whether there was any new information regarding the hangars and their disposition. Mr. Matt West (City of Tustin) responded with an update. He noted the City of Tustin and the County of Orange have been undergoing mitigation by way of a Memorandum of Agreement (MOA) between the Navy and State Historic Preservation office. He added prior to modification to the hangars, including demolition, there is a requirement to provide a historical documentary which is now being completed and will be on exhibit at the Community Center on 21 September 2009 at 5:30pm. He welcomed the RAB and community members to the event. Mr. West explained he had very limited update information with regard to the status of the North hangar but believes any agreements between the County and the developer have been terminated. With regard to the South hangar, Mr. West noted the City has undergone a lengthy process with the developer for reuse of the property but he did not know any additional details. Mr. West invited the RAB to view the City of Tustin website where the written documentary on the Hangar is available for viewing.

Mr. Kopecky asked the Navy to provide aerial maps of Former MCAS Tustin for the next RAB meeting.

In closing, Mr. Callian asked for a meeting evaluation. No comments were provided. Mr. Callian thanked the RAB and the meeting was adjourned.

LIST OF HANDOUTS PROVIDED AT THE MEETING

- 09 September 2009 Former MCAS Tustin RAB Meeting Agenda
- RAB Meeting Schedule
- Former MCAS Tustin - Where to Get More Information
- Environmental Websites
- MCAS Tustin Environmental Program Status
- Presentation Slides: "Operable Unit (OU) - 3 Update "
- Former MCAS Tustin RAB Mission Statement
- Former MCAS Tustin RAB Fact Sheet/Membership Application
- Former MCAS Tustin Mailing List Coupon

Copies of the meeting minutes and handouts provided at the 09 September 2009 RAB meeting are available at the CERCLA IR for former MCAS Tustin located at the University of California, Irvine, Main Library, Government Publications Section. Library hours are 8am to 7pm Monday through Thursday; 8am to 5pm Friday and Saturday; and 1pm to 5pm on Sunday. It is recommended that people call the library for confirmation of these hours as they may be modified during final exam and holiday periods. The Government Publications Section may be reached at (949) 824-7362. In addition, copies of the meeting minutes and handouts are also available at the CERCLA AR File maintained at Building 307 at former MCAS El Toro by Ms. Rawal. Documents can be viewed by appointment (call Ms. Rawal at [949] 726-5398) between 9am and 1pm Monday through Thursday.

Final minutes from previous RAB meetings can be found on the internet at the Navy BRAC website: www.bracpmo.navy.mil

INTERNET SITES

Navy and Marine Corps Internet Access

BRAC PMO Web Site (includes RAB meeting minutes): <http://www.bracpmo.navy.mil/>

For Tustin RAB information:

http://www.bracpmo.navy.mil/bracbases/california/tustin/rab_information.aspx

Department of Defense - Environmental Cleanup Home Page Web Site:

<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

Link to Envirostor via U.S. EPA: www.epa.gov/region09/EnviroStor.html

Cal/EPA:

Homepage: www.calepa.ca.gov

Department of Toxic Substances Control: www.dtsc.ca.gov

Department of Toxic Substances Control: www.envirostor.dtsc.ca.gov/public

Department of Health Services, reorganized into the Department of Health Care Services and the Department of Public Health: www.dhs.ca.gov

Santa Ana Regional Water Quality Control Board: www.waterboards.ca.gov/santaana

Environmental data for regulated facilities in California: www.geotracker.waterboards.ca.gov

September 2009

MCAS TUSTIN ENVIRONMENTAL PROGRAM STATUS

Operable Unit 1A (Installation Restoration Program [IRP] Site 13 South – 1,2,3-Trichloropropane [TCP] plume)

Carve-Out: CO-5

Brief Project History:

- 2002: Time Critical Removal Action (hydraulic containment)
- 2004: Final Record of Decision (ROD): Selected remedy includes:
 - Hydraulic containment of contaminated groundwater;
 - Construction, operation, and maintenance of hydraulic containment system;
 - Hot-spot soil removal to enhance groundwater remedy and;
 - Implementation of institutional controls.
- 2007: Final Remedial Design and Remedial Action Implementation
- December 2007: Treatment system operational
- July 2008: Issued 1st Quarter Groundwater 2008 Groundwater Progress Monitoring Report
- October 2008: Issued 2nd Quarter 2008 Groundwater Progress Monitoring Report
- December 2008: Issued Final Interim-Remedial Action Completion Report (I-RACR)
The main purpose of the I-RACR is to document that the remedy has been constructed
- December 2008: Issued 3rd Quarter 2008 Groundwater Progress Monitoring Report
- May 2009: Issued Draft 2008 Annual OU-1A and OU-1B Performance Evaluation Report
- May 2009: Issued Draft Operating Properly and Successfully (OPS) Report.
- July 2009: Issued 1st Quarter 2009 Groundwater Progress Monitoring Report.
- September 2009: Issued Final Long Term Operation and Maintenance Plan (OMP).

Next steps:

- On-going operation and maintenance activities.
 - Biweekly, monthly and quarterly inspections;
 - Quarterly effluent sampling for compliance with Orange County Sanitation District discharge requirements; and
 - Quarterly groundwater monitoring.
 - Data used to track system performance and optimize system.
 - **September 30, 2009**: Issue Draft Final 2008 Annual OU-1A and OU-1B Performance Evaluation Report*
 - **September 30, 2009**: Issue Draft Final OPS Report
 - **October 2009**: Issue 2nd Quarter 2009 Groundwater Progress Monitoring Report
 - **December 2009**: Issue 3rd Quarter 2009 Groundwater Progress Monitoring Report
- *Tentative

September 2009

MCAS TUSTIN ENVIRONMENTAL PROGRAM STATUS

Operable Unit 1B (IRP Sites 3 and 12 – Trichloroethene [TCE] plumes)

Carve-Outs: CO-5 and CO-6

Brief Project History:

- 2004: Final ROD: Selected remedy includes:
 - Hydraulic containment of contaminated groundwater;
 - Construction, operation, and maintenance of a hydraulic containment system;
 - Hot-spot soil removal to enhance groundwater remedy and;
 - Implementation of institutional controls.
- 2007: Final Remedial Design and Remedial Action Implementation
- December 2007: North treatment system operational
- January 2008: South treatment system operational
- July 2008: Issued 1st Quarter 2008 Groundwater Progress Monitoring Report
- October 2008: Issued 2nd Quarter 2008 Groundwater Progress Monitoring Report
- December 2008: Issued Final I-RACR
The main purpose of the I-RACR is to document that the remedy has been constructed
- December 2008: Issued 3rd Quarter 2008 Groundwater Progress Monitoring Report
- May 2009: Issued Draft 2008 Annual OU-1A and OU-1B Performance Evaluation Report
- May 2009: Issued Draft OPS Report
- July 2009: Issued 1st Quarter 2009 Groundwater Progress Monitoring Report
- September 2009: Issued Final Long Term OMP

Next steps:

- On-going operation and maintenance activities.
 - Biweekly, monthly, and quarterly inspections;
 - Quarterly effluent sampling for compliance with Orange County Sanitation District discharge requirements; and
 - Quarterly groundwater monitoring.
 - Data used to track system performance and optimize system.
 - **September 30, 2009:** Issue Draft Final 2008 Annual OU-1A and OU-1B Performance Evaluation Report*
 - **September 30, 2009:** Issue Draft Final OPS Report.
 - **October 2009:** Issue 2nd Quarter 2009 Groundwater Progress Monitoring Report
 - **December 2009:** Issue 3rd Quarter 2009 Groundwater Progress Monitoring Report
- *Tentative

Operable Unit 3 (Site 1– Moffett Trenches landfill)

Carve-Outs: CO-10 – PARCEL TRANSFERRED IN 2006

Brief Project History:

- December 2001: Final ROD
- May 2003: Final OMP
- November 2003: Final OPS Report
 - U.S. EPA approval obtained in March 2004
- October 2006: Final First Five-Year Review

September 2009

MCAS TUSTIN ENVIRONMENTAL PROGRAM STATUS

Operable Unit 3 Brief Project History Continued:

- On-going operation and maintenance activities
- June 2009: Issued Draft 2008 Annual Groundwater Monitoring Report

Next steps:

- Continue operation and maintenance activities
- October 2009: Issue Draft Final/Replacement Pages for the 2008 Annual Groundwater Monitoring Report

Operable Unit 4B (IRP-5S[a], IRP-6, IRP-11, IRP-13W, MMS-04, and Mingled Plumes Area [MPA])

Carve-Outs: CO-5 and CO-6

Brief Project History:

- 2000: Draft OU-4 Focused Feasibility Study (FS)
- 2003: OU-4 Shallow Groundwater Investigation
- 2004: OU-4 Technical Memorandum presents results of shallow groundwater investigation
- 2005-2006: Groundwater Monitoring
- 2007: IRP-6 and MPA Supplemental Investigation
- September 2008: Final Technical Memorandum Supplemental Investigation at IRP-6 and MPA
- October 2008: Final FS Report
- February 2009: Proposed Plan. Public comment period: February 04-March 06, 2009
- May 2009: Issued Final Work Plan for Groundwater Monitoring OU-4B Sites (IRP-5S[a], IRP-6, IRP-11, IRP-13W, MMS-04, and MPA)
- June 2009: Issued Final Work Plan for Installation of Groundwater Monitoring Wells at OU-4B Sites (MPA, MMS-04, IRP-11, and IRP-13W)
- June 2009: Issued Draft Record of Decision/Remedial Action Plan for OU-4B

Next steps:

- **November 2, 2009:** Issued Draft Final ROD

MTBE Plume (UST Site 222)

Carve-Outs: CO-5

Brief Project History:

- 2001: Interim-Petroleum Corrective Action Program (PCAP) plan implemented
- 2006: Final Soil Closure Report
- 2006: Interim PCAP Addendum No. 2 – Revised Cleanup Goals: 1st WBZ: 300 micrograms per liter (ug/L), 2nd WBZ: 44 ug/L, and 3rd WBZ: 13 ug/L.
- 2007: Final PCAP
- 2007/2008: Implement Final PCAP; Additional monitoring and extraction wells installed. Air Sparging/Soil Vapor Extraction (AS/SVE) initiated in March 2008.
- September 2008: AS/SVE system shut down for rebound monitoring per the Final PCAP requirements

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MCAS TUSTIN ENVIRONMENTAL PROGRAM STATUS

MTBE Plume (UST Site 222) Brief Project History Continued:

- Monitoring Report
- December 2008: Issued 1st and 2nd Quarter 2008 Groundwater Progress Report
 - April 2009: Issued 3rd Quarter 2008 Groundwater Progress Monitoring Report
 - May 2009: Issued Draft Final Annual 2007 PCAP Progress Report
 - July 2009: Issued Draft Annual 2008 PCAP Progress Report
 - August 2009: Issued 1st Quarter 2009 Groundwater Monitoring Progress Report

Next steps:

- On-going operation and maintenance activities:
 - Quarterly Groundwater Monitoring
 - Data used to track system performance, optimize system, and PCAP Closure Report
- Quarterly effluent sampling for compliance with Orange County Sanitation discharge permit requirements
- **September 2009** – Issue 2nd Quarter 2009 Groundwater Progress Report
- **September 2009** – Final Annual 2007 PCAP Progress Report

FOST Summary

FOST #1 signed August 29, 2001	Parcels 3, 21, 38, 39 and portions of 40
FOST #2 signed September 28, 2001	Parcels 4-8, 10-12, 14, 25, 26, 30-33, 37, 42 and portions of 40 and 41
FOST #3 signed April 22, 2002	Parcels 23, 29, 34, 35 and 36, and portions of 1, 16, 17, 24, 27, 28, 40 and 41
FOST #4 signed September 26, 2002	Portions of 24 (PS clean area in CO-5)
FOST #5 signed December 17, 2002	COs 8 and 11
FOST #6 signed September 29, 2004	CO-10 and portion of CO-5
FOST #7 signed May 20, 2005	COs 3 and 7 and portion of CO-5
FOST #8 signed February 2006	COs 1 and 4

FOSL Summary

FOSL #2 signed February 28, 2002	COs 1 thru 4
FOSL #3 signed April 26, 2002	COs 5 thru 11

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MCAS TUSTIN ENVIRONMENTAL PROGRAM STATUS

Acronyms

AST	Aboveground Storage Tank	MNA	Monitored Natural Attenuation	PS	Public Sale Parcel
AOC	Area of Concern	MPA	Mingled Plumes Area	RCRA	Resource Conservation and Recovery Act
BCT	BRAC Cleanup Team (Navy, EPA, Cal EPA)	MMS	Miscellaneous Major Spill	ROD	Record of Decision
CO	Carve-Out area	NFA	No Further Action	TCE	Trichloroethene
EE/CA	Engineering Evaluation/ Cost Analysis	OMP	Operations and Maintenance Plan	TCP	1,2,3-Trichloropropane
FOSL	Finding of Suitability to Lease	OPS	Operating Properly and Successfully	ug/L	Micrograms per liter
FOST	Finding of Suitability to Transfer	OU	Operable Unit	UST	Underground Storage Tank
FS	Feasibility Study	PCAP	Petroleum Corrective Action Program	WBZ	Water-Bearing Zone
I-RACR	Interim-Remedial Action Completion Report	MTBE	Methyl tert butyl ether		



Welcome



Operable Unit 3 Update

**Former MCAS Tustin, California
RAB Meeting**

September 9, 2009

Louie Cardinale, P.E.

Navy BRAC Remedial Project Manager



Presentation Overview



- **Background**
- **Remedy Overview**
- **Key Documents**
- **Long Term Operation and Maintenance**
- **Draft 2008 Annual Groundwater Progress Monitoring Report**
- **Upcoming Milestones**



Background



- **Operable Unit (OU)-3 is located within Former Carve-Out Area 10 in the Northeast Portion of Former MCAS Tustin. OU-3 consists of the site also known as, Installation Restoration Program Site 1, Moffett Trenches and Crash Crew Burn Pits.**
- **The shallow landfill trenches (Moffett Trenches) were used for disposal of municipal and industrial waste and shallow burn pits (Crash Crew Burn Pits) were used for burning of flammable liquids during fire fighting training exercises.**
- **The shallow groundwater at OU-3 is located in three different Water Bearing Zones (WBZs) from approximately 20 to 80 feet below ground surface (bgs). The regional aquifer is located approximately 95 feet bgs. Historical data indicate that there is no hydraulic connection between the shallow WBZs and the regional aquifer.**



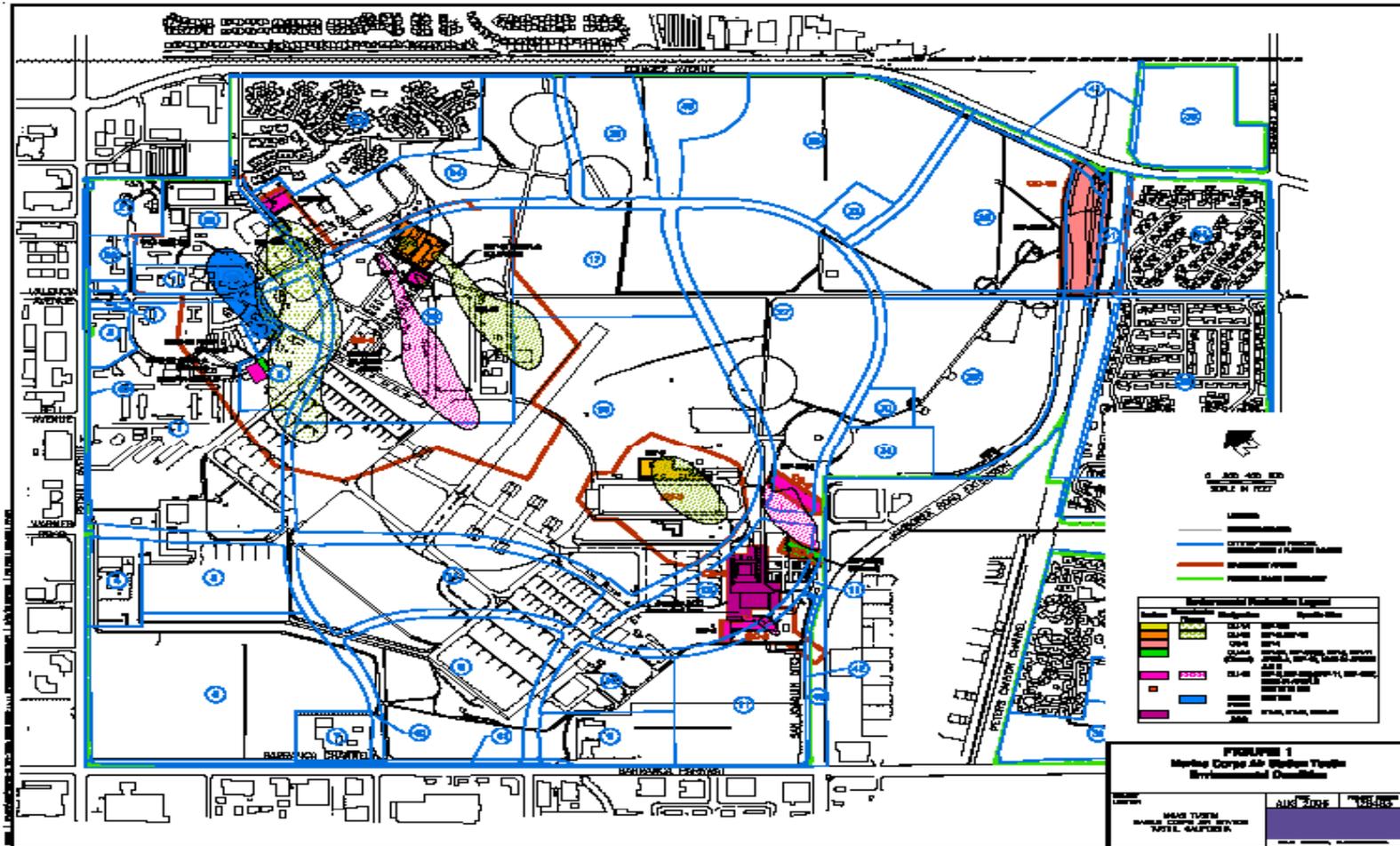
Background



- The Navy implemented various response actions at OU-3 from excavation of impacted soils to construction of an 805-foot long steel-reinforced concrete containment wall.
- From 1997 to 1999, the Jamboree Road extension, its associated embankment slopes, and on/off ramps were constructed with a high-density polyethylene (HDPE) liner and 20 feet of fill over the site.
- The main chemicals of concern (COCs) at OU-3 in groundwater are volatile organic compounds (VOCs) (chlorobenzene; 1,2-dichlorobenzene; 1,4-dichlorobenzene) and various metals (antimony, arsenic, cadmium, manganese, molybdenum, and thallium).

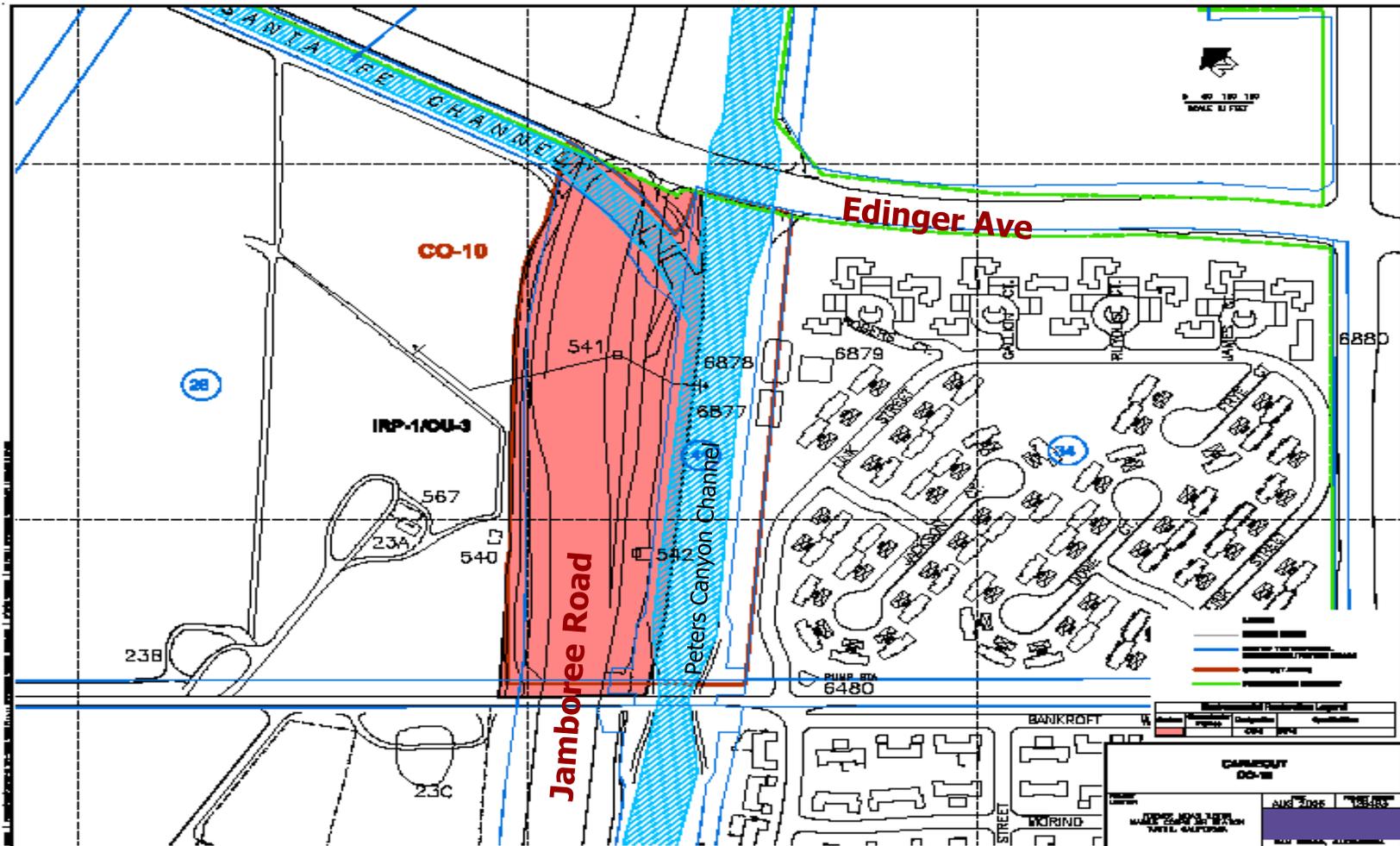


Former MCAS Tustin Base Map





Former MCAS Tustin OU-3





Remedy Overview



- **Final Record of Decision (ROD) was signed in December 2001.**
- **The Remedial Action Objectives (RAOs) are:**
 - **Control or eliminate discharge of contaminated groundwater into Peters Canyon Channel that potentially impacts human health or the environment, and preserve existing surface water quality;**
 - **Prevent or minimize downward migration of contamination into deeper groundwater zones to preserve existing high-quality groundwater;**
 - **Prevent or minimize exposure to onsite groundwater, buried wastes, and subsurface soils that have contamination above health-based levels; and**
 - **Implement appropriate remedial actions as necessary to facilitate rapid transfer and reuse of the OU-3 property.**



Remedy Overview



- The selected remedy for OU-3 consists of hydraulic containment with institutional controls (ICs) and was designed to contain contaminated groundwater within the site boundary.
- Major components of the remedy include:
 - Hydraulic containment of plume
 - Groundwater monitoring
 - Surface water monitoring
 - Landfill gas monitoring (discontinued after 3 years of monitoring)
 - Inspection of wells and probes
 - Institutional controls to prevent future on-site activities



Key Documents



- December 2001 – Final ROD/Remedial Action Plan (RAP), Operable Unit 3, Moffett Trenches and Crash Crew Burn Pits Site, MCAS Tustin, California
- May 2003 – Final Operation and Maintenance Plan (OMP), Operable Unit 3, Moffett Trenches and Crash Crew Burn Pits Site, MCAS Tustin, California
- November 2003 – Final Operating Properly and Successfully (OPS) Evaluation Report, Operable Unit 3, Former MCAS Tustin, California
- October 2006 – Final First Five-Year Review of Remedial Actions Implemented at Operable Unit 3, Former MCAS Tustin, California



Key Documents - First Five Year Review Completed Findings Summary



- **The First Five-Year Review for OU-3 per CERCLA and U.S. EPA Guidance was completed in 2006:**
 - The Jamboree Road extension mitigated potential surface water infiltration and exposure
 - The steel-reinforced concrete containment wall placed along the west bank of Peters Canyon Channel has mitigated seepage of impacted groundwater into the waterway
 - Subsurface contamination is currently contained and the extent of contamination has not migrated beyond OU-3 boundaries
 - ICs remain adequate to restrict OU-3 access to unauthorized personnel
- **The Base Realignment and Closure Cleanup Team (BCT) concurred that the remedy at OU-3 is effective and protective of human health and the environment.**



Long Term Operation and Maintenance



➤ Long Term Operation and Maintenance Components:

- **Concrete-lined channel wall/channel bed** – Inspections / Maintenance.
- **Surface cover** - Inspections / Maintenance of HDPE cover.
- **Drainage system** - Inspection / Maintenance.
- **Groundwater monitoring wells** - Inspection / Maintenance & Annual Sampling of all 11 wells.
- **Surface water sampling** - Annual sampling from 4 locations in Peters Canyon Channel.

- **Current ICs consist of land use restrictions and are intended to limit public exposure and protect the remedy** – Field inspections continue to verify ICs are protective. The City of Tustin also verifies that ICs are implemented by providing a signed Annual IC Field Inspection Log.

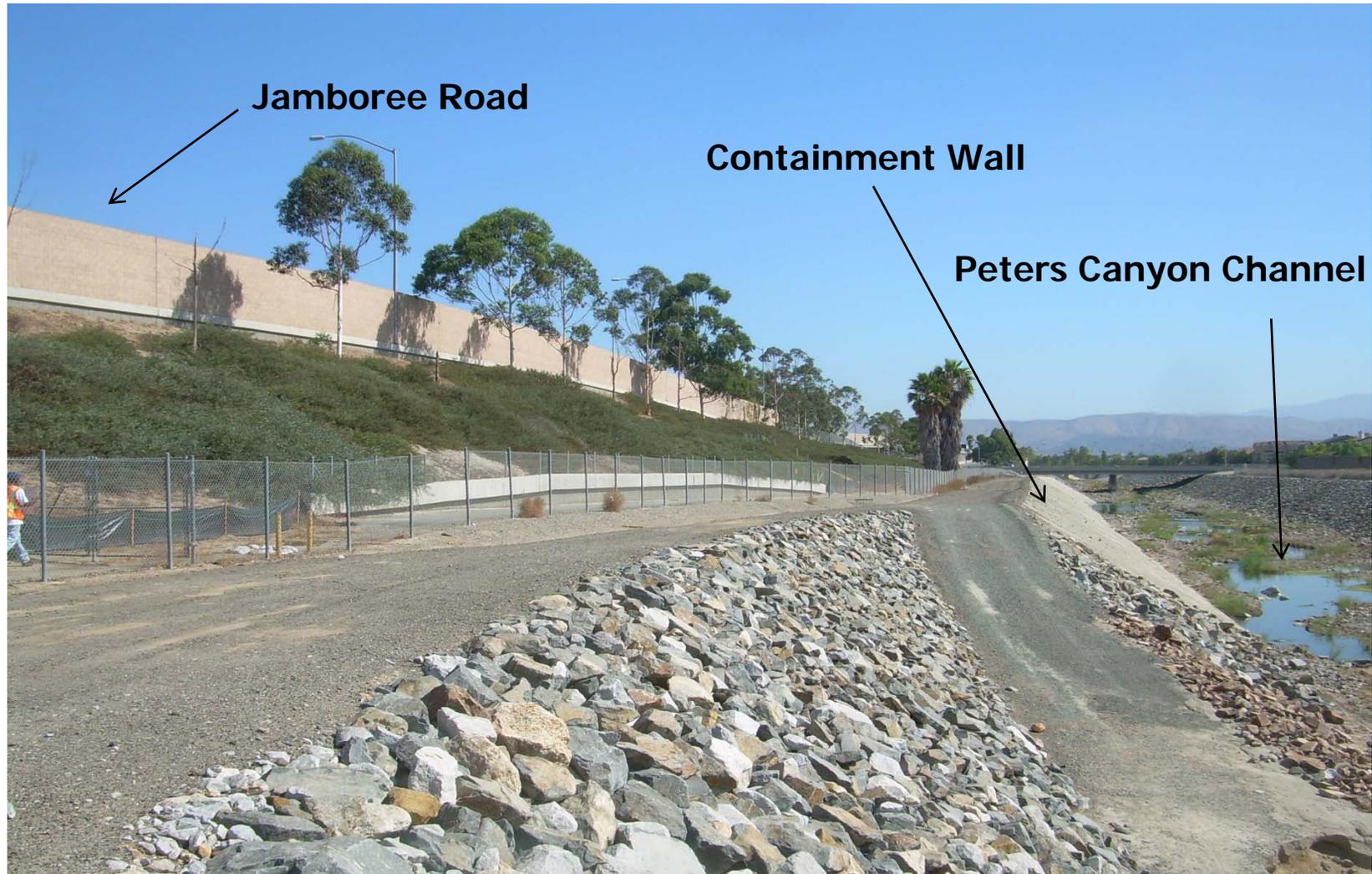


Northwest Side of OU-3





Northeast Side of OU-3



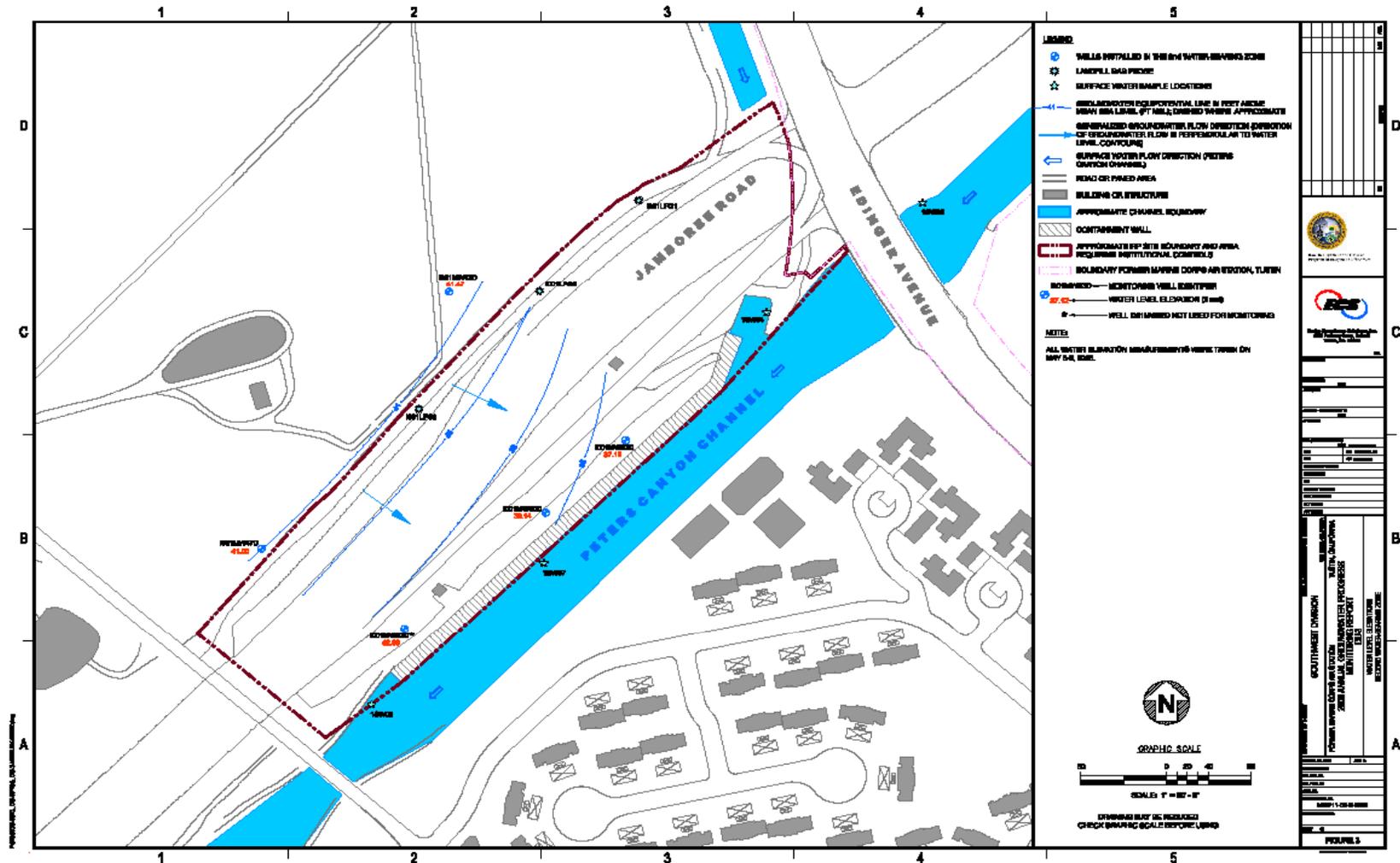


Northeast Side of OU-3





Draft 2008 Annual Groundwater Progress Monitoring Report





Draft 2008 Annual Groundwater Progress Monitoring Report



- Groundwater and surface water results from 2008 and previous rounds demonstrate that the steel-reinforced concrete containment wall is effectively preventing impacted groundwater from migrating to surface water in Peters Canyon Channel.
- Inspections of the engineering controls and ICs demonstrates that the remedy is protective.
- Navy will continue with annual groundwater and surface water monitoring.
- Navy will continue with routine field inspections of engineering controls, ICs, and maintenance activities per the Long Term O & M Plan.



Upcoming Milestones



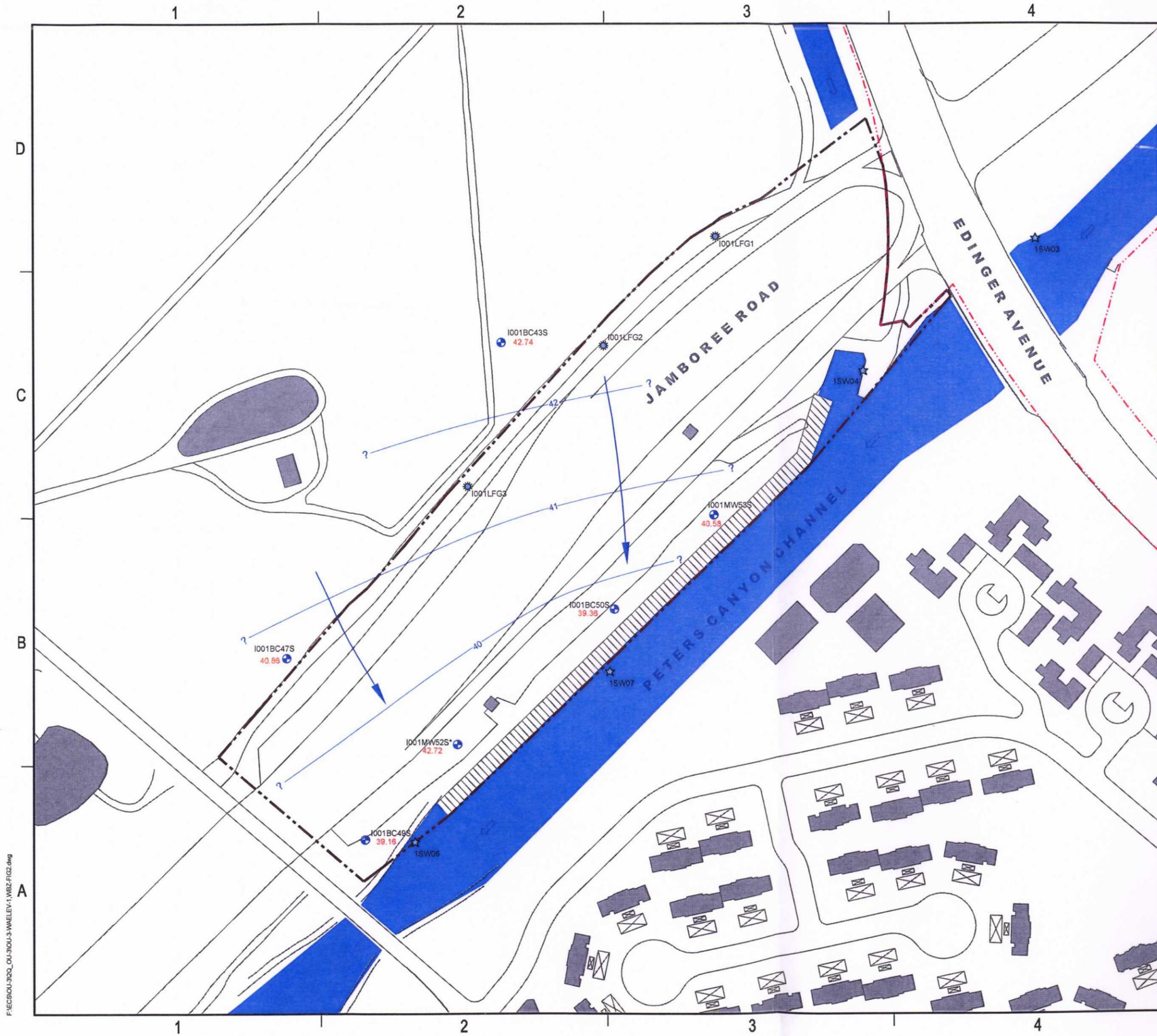
- **Draft Final (replacement pages for Final) 2008 Annual Groundwater Progress Monitoring Report, Operable Unit 3, Former MCAS Tustin, California (October 2009)**
- **Final 2008 Annual Groundwater Progress Monitoring Report, Operable Unit 3, Former MCAS Tustin, California (November 2009)**



Acronyms



bgs – below ground surface
BRAC – Base Realignment and Closure
BCT – Base Realignment and Closure Cleanup Team
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CIWMB – California Integrated Waste Management Board
COCs – Chemicals of Concern
OCHCA – Orange County Health Care Agency
EPA – U.S. Environmental Protection Agency
HDPE – high-density polyethylene
IC – institutional control
IRP – Installation Restoration Program
MCAS – Marine Corps Air Station
OMP – Operation and Maintenance Plan
OPS – Operating Properly and Successfully
OU – Operable Unit
RAP – Remedial Action Plan
RAOs – Remedial Action Objectives
RI – Remedial Investigation
ROD – Record of Decision
VOCs – Volatile Organic Compounds
WBZs – Water Bearing Zones

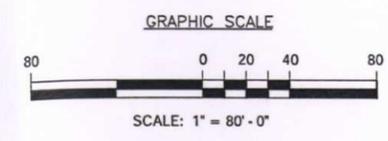


- LEGEND**
- WELLS INSTALLED IN THE 1st WATER-BEARING ZONE
 - LANDFILL GAS PROBE
 - SURFACE WATER SAMPLE LOCATIONS
 - GROUNDWATER EQUIPOTENTIAL LINE IN FEET ABOVE MEAN SEA LEVEL (FT MSL); DASHED WHERE APPROXIMATE
 - GENERALIZED GROUNDWATER FLOW DIRECTION (DIRECTION OF GROUNDWATER FLOW IS PERPENDICULAR TO WATER LEVEL CONTOURS)
 - SURFACE WATER FLOW DIRECTION (PETERS CANYON CHANNEL)
 - ROAD OR PAVED AREA
 - BUILDING OR STRUCTURE
 - APPROXIMATE CHANNEL BOUNDARY
 - CONTAINMENT WALL
 - APPROXIMATE IRP SITE BOUNDARY AND AREA REQUIRING INSTITUTIONAL CONTROLS
 - BOUNDARY FORMER MARINE CORPS AIR STATION, TUSTIN

1001MW53S — MONITORING WELL IDENTIFIER
 40.58 — WATER LEVEL ELEVATION (ft msl)

NOTE:
 ALL WATER ELEVATION MEASUREMENTS WERE TAKEN ON MAY 8-9, 2008.

* WELL 1001MW52S NOT USED FOR CONTOURING



DRAWING MAY BE REDUCED
 CHECK GRAPHIC SCALE BEFORE USING

NO.	DATE	DESCRIPTION

Base Realignment and Closure Program Management Office West

Enviro-Compliance Solutions, Inc.
 1571 Parkway Loop, Suite B
 Tustin, CA 92790

EGS

FOR COMMANDER NAJFAC
 DATE: JANUARY 2009
 DR: CHESTERAL VM
 DC: ALABASTON

DESIGNER OF RECORD
 DC

REVIEWED BY
 DC

PROJECT MANAGER
 FIRE PROTECTION
 SUTLANDER
 ATT LINDOR

NAVY FACILITIES ENGINEERING COMMAND
 SAN DIEGO, CALIFORNIA

SOUTHWEST DIVISION
 TUSTIN, CALIFORNIA

FORMER MARINE CORPS AIR STATION
 2008 ANNUAL GROUNDWATER PROGRESS
 MONITORING REPORT
 OU-3
 WATER LEVEL ELEVATIONS
 FIRST WATER-BEARING ZONE

CODE NO. 8001
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 SPEC. NO.
 CONTR. CENTER NO.
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FIGURE 2

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