



**Former MCAS Tustin
Restoration Advisory Board (RAB) Email Update
January 11, 2012**

This is the second Email Update for Marine Corps Air Station (MCAS) Tustin, California; Restoration Advisory Board (RAB) meetings. This Update focuses primarily on ongoing long-term groundwater remediation and monitoring at Installation Restoration Program (IRP) sites and on the recently completed Five-Year Review Report. You will find a brief summary of these items below.

Attached you will find an updated Environmental Program Status for all ongoing groundwater remediation and monitoring activities at MCAS Tustin, including brief project histories, a listing of upcoming documents, and next steps for each of the sites. You will recognize this as the Environmental Program Status that has been presented at previous RAB meetings.

NEW BUSINESS

Five-Year Review Report for IRP-1, -3, -12, and -13S

On October 31, 2011; the Navy finalized the second Five-Year Review Report for MCAS Tustin. This is the second Five-Year Review for IRP-1 and the first for IRP-3, -12, and -13S. Five-Year Reviews are conducted to determine whether remedies implemented at sites continue to be protective of human health and the environment; if so, then protectiveness determinations are made for those sites. Although protectiveness determinations were made for these four Sites, due to recently revised toxicity criteria for trichloroethene (TCE), released in late-September 2011, the Navy will be reevaluating human health risks for vapor intrusion at two of the four sites, IRP-3 and -13S. Results of this re-evaluation will be presented in an Addendum to the Five Year Review Report, which will be finalized by October 31, 2012.

Operation and Maintenance (O&M) and Long Term Monitoring (LTM)

Since our last in-person RAB meeting on September 21, 2011; the Navy has been actively conducting O&M and LTM activities for the groundwater remedies, hydraulic containment and institutional controls, (ICs) installed at several sites, including IRP-13S, IRP-3, and IRP-12. As you are aware, these Sites are characterized as having volatile organic compounds (VOCs) in groundwater at concentrations exceeding specified cleanup goals. In September 2011, the Navy submitted the 2011 Semiannual Groundwater Monitoring Data Summary Report for IRP-3, -12, and -13S to the agencies. In November 2011, the Final 2010 Annual Performance Evaluation Report was submitted to the agencies. In December 2011, the Third Quarter 2011 Groundwater Monitoring Data Summary Package was submitted to the agencies.

For the six IRP Sites included under OU-4B, the Navy submitted a Third Quarter 2011 Groundwater Monitoring Summary to the agencies in November 2011.

OU-4B Moderate Concentration Sites – Remedial Design/Remedial Action Work Plan

The Draft Remedial Design/Remedial Action (RD/RA) Work Plan for three OU-4B moderate concentration sites, IRP-5S(a), IRP-6, and the Mingled Plumes Area (MPA) was issued to the agencies for review in October 2011. The remedy for these three Sites is *in situ* bioremediation, monitored natural attenuation,



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and institutional controls. We anticipate that we will finalize the RD/RA Work Plan and be in the field to initiate this remedial action in Spring 2012.

Summary

The Navy appreciates your input on our environmental restoration program. Please plan to attend our next RAB meeting on May 23, 2012. Should you have any questions on any information presented in this Email Update, or on any site in our environmental program, please do not hesitate to contact me or any of the regulatory agency personnel listed below.

Sincerely,

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NEXT RAB MEETING:

All Former MCAS Tustin RAB meetings are open to the public.

Time: 7:00 – 8:20 p.m.

Wednesday, May 23, 2012

Tustin Senior Center

200 South "C" Street, Tustin

(Margarete Thompson Boardroom)

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

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 for 1,2,3-TCP-impacted groundwater;
 - Construction, operation, and maintenance of groundwater extraction and treatment system; and
 - Institutional controls (ICs).
 - Hot-spot soil excavation was also conducted to enhance groundwater remedy.
- 2007: Began Final Remedial Design (RD) and Remedial Action (RA)
- December 2007: Treatment system operational
- July 2008: 1st Quarter 2008 Groundwater Monitoring Data Summary (MDS)
- October 2008: 2nd Quarter 2008 Groundwater MDS
- December 2008: Final Interim-Remedial Action Completion Report (I-RACR); the main purpose of the I-RACR is to document that the remedy is constructed per the Final RD
- December 2008: 3rd Quarter 2008 Groundwater MDS
- July 2009: 1st Quarter 2009 Groundwater MDS
- September 2009: Final Long-Term Operation and Maintenance Plan (OMP)
- October 2009: 2nd Quarter 2009 Groundwater MDS
- December 2009: 3rd Quarter 2009 Groundwater MDS
- February 2010: Final 2008 Annual OU-1A/-1B Performance Evaluation Report (PER)
- February 2010: Final Operating Properly and Successfully (OPS) Report
 - Obtained U.S. EPA OPS determination in December 2009
- July 2010: 1st Quarter 2010 Groundwater MDS
- September 2010: 2nd Quarter 2010 Groundwater MDS
- November 2010: Final 2009 Annual OU-1A and -1B PER
- December 2010: 3rd Quarter 2010 Groundwater MDS
- June 2011: Draft 2010 Annual PER
- September 2011: 2011 Semiannual Groundwater MDS
- November 2011: Final 2010 Annual PER

Next steps:

- **On-going operation and maintenance (O&M) activities:**
 - Biweekly, monthly, and quarterly inspections and effluent sampling
 - Quarterly groundwater monitoring and semiannual reporting; data used to track system performance and (annually) evaluate and optimize the system
 - Annual system optimization evaluation included in the 2011 Annual PER
- **June 2012: Issue Draft 2011 Annual PER**



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

Carve-Outs: CO-5 and CO-6

Brief Project History:

- 2004: Final ROD: Selected remedy includes:
 - Hydraulic containment of TCE-impacted groundwater;
 - Construction, operation, and maintenance of groundwater extraction and treatment systems; and
 - ICs.Hot-spot soil excavation also conducted to enhance groundwater remedy
- 2007: Began implementing Final RD/RA
- January 2008: Treatment system became operational
- July 2008: 1st Quarter 2008 Groundwater MDS
- October 2008: 2nd Quarter 2008 Groundwater MDS
- December 2008: Final I-RACR.
- December 2008: 3rd Quarter 2008 Groundwater MDS
- July 2009: 1st Quarter 2009 Groundwater MDS
- September 2009: Final Long-Term OMP
- October 2009: 2nd Quarter 2009 Groundwater MDS
- December 2009: 3rd Quarter 2009 Groundwater MDS
- February 2010: Final 2008 Annual OU-1A/-1B PER
- February 2010: Final OPS Report
 - Obtained U.S. EPA OPS designation in December 2009
- July 2010: 1st Quarter 2010 Groundwater MDS
- September 2010: 2nd Quarter 2010 Groundwater MDS
- November 2010: Final 2009 Annual OU-1A/-1B PER
- December 2010: 3rd Quarter 2010 Groundwater MDS
- June 2011: Draft 2010 Annual PER
- September 2011: [2011 Semiannual Groundwater MDS](#)
- November 2011: [Final 2010 Annual PER](#)

Next steps:

- **Same as for OU-1A above**



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Operable Unit 3 (IRP Site 1– Moffett Trenches Landfill)

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

Brief Project History:

- December 2001: Final ROD
- May 2003: Final OMP
- November 2003: Final OPS Report
- Obtained U.S. EPA OPS designation in March 2004
- October 2006: Final First Five-Year Review
- On-going O&M activities
- January 2010: Final 2008 Annual Groundwater Monitoring Report
- February 2011: Final 2009 Annual Long-Term Monitoring Report
- July 2011: Final 2010 Annual Long-Term Monitoring Report

Next steps:

- **Continue O&M activities**

Operable Unit 4B

Moderate Concentration Sites (IRP-5S[a], IRP-6, and the Mingled Plumes Area [MPA]) and Low Concentration Sites (IRP-11, IRP-13W, and Miscellaneous Major Spill [MMS-04])

Carve-Outs: CO-2, CO-5, and CO-9.

Brief Project History:

- 2004: Final OU-4 Tech Memo for 2003 shallow groundwater investigation
- 2005-2006: Groundwater Monitoring
- 2007: IRP-6 and MPA Supplemental Investigation field activities
- September 2008: Final Tech Memo Supplemental Investigation at IRP-6 and MPA
- October 2008: Final Feasibility Study Report
- February 2009: Proposed Plan. Public comment period: February 04-March 06, 2009
- May 2009: Final Work Plan for Groundwater Monitoring at OU-4B Sites
- August 2009: Installed additional wells at the MPA, MMS-04, IRP-11, and IRP-13W in accordance with the June 2009 Final Work Plan
- January 2010: 3rd Quarter 2009 Data Summary Report
- January 2010: Final ROD
- April 2010: Replacement Pages for the Final ROD, including signature sheet
- July 2010: Final Pre-Design Pilot Study Work Plan
- July to October 2010: Implemented Pre-RD Pilot Study
- October 2010: Final 2009 Annual Groundwater Monitoring Report
- October 2010: Final 1st Quarter 2010 Data Summary Report
- November 2010: Final 2nd Quarter 2010 Data Summary Report
- May 2011: Final Pre-RD Pilot Study Report
- May 2011: Final 2010 Annual Groundwater Monitoring Report
- June 2011: Issue Final RACR for MMS-04
- August 2011: Draft LUC RD & Long-Term OMP (Low Conc. Sites: IRP-11 & -13W)
- **September 2011: Final 1st and 2nd Quarter Data Summary Report**
- **October 2011: Draft RD/RA Work Plan for Moderate (Mod.) Conc. Sites**



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- October 2011: Draft Fact Sheet, OU-4B

Next steps:

- January 2012: Issue Draft Final Fact Sheet, OU-4B
- January 2012: Issue Draft Final LUC RD & Long-Term OMP for Low Conc. Sites
- February 2012: Issue Draft Final RD/RA Work Plan for Mod. Conc. Sites
- March 2012: Issue Final Fact Sheet, OU-4B
- March 2012: Issue Final LUC RD & Long-Term OMP for Low Conc. Sites
- April 2012: Issue Final RD/RA Work Plan for Mod Conc. Sites

MTBE Plume (UST Site 222)

Carve-Out: 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 shutdown for rebound monitoring per Final PCAP requirements
- December 2008: 1st and 2nd Quarter 2008 Groundwater MDS
- April 2009: 3rd Quarter 2008 Groundwater MDS
- May 2009: Draft Final Annual 2007 PCAP Progress Report
- July 2009: Draft Annual 2008 PCAP Annual Report
- August 2009: 1st Quarter 2009 Groundwater MDS
- September 2009: 2nd Quarter 2009 Groundwater MDS
- September 2009: Final Annual 2007 PCAP Annual Report
- October 2009: Final/Replacement Pages for the Annual 2008 PCAP Annual Report
- January 2010: 3rd Quarter 2009 Groundwater MDS
- June 2010: Draft 2009 PCAP Annual Report
- August 2010: 1st Quarter 2010 Groundwater MDS
- October 2010: 2nd Quarter 2010 Groundwater MDS
- November 2010: Final 2009 PCAP Annual Report
- December 2010: 3rd Quarter 2010 Groundwater MDS
- June 2011: Draft 2010 PCAP Annual Report
- September 2011: 2011 1st and 2nd Quarter Groundwater Monitoring Data Package
- November 2011: [Final 2010 PCAP Annual Report](#)
- November 2011: Shutdown PCAP Extraction Wells and Treatment Facility in preparation for Site Closure
- December 2011: Issue Draft PCAP Closure Report

Next steps:

- **Spring 2012: Issue Final PCAP Closure Report**



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Final 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 a portion of CO-5
FOST #7 signed May 20, 2005	COs 3 and 7 and a portion of CO-5
FOST #8 signed February 2006	COs 1 and 4

Final FOSL Summary

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

Acronyms/Abbreviations

AS/SVE – Air Sparge/Soil Vapor Extraction AST – Aboveground Storage Tank AOC – Area of Concern BCT – BRAC Cleanup Team (Navy, U.S. EPA, Cal/EPA) Cal/EPA – California Environmental Protection Agency CO – Carve-Out area Conc. - Concentration DCE - Dichloroethene FOSL – Finding of Suitability to Lease FOST – Finding of Suitability to Transfer ICs – Institutional Controls I-RACR – Interim Remedial Action Complete Report IRP – Installation Restoration Program LUC – Land use control MDS – Monitoring Data Summary MMS – Miscellaneous Major Spill MNA – Monitored Natural Attenuation MPA – Mingled Plumes Area MTBE – Methyl tert-butyl ether O&M – Operation and Maintenance OCSD – Orange County Sanitation District OMP – Operation and Maintenance Plan	OPS – Operating Properly and Successfully OU – Operable Unit PCAP – Petroleum Corrective Action Plan PER – Performance Evaluation Report PS – Public Sale Parcel RA – Remedial Action RAP – Remedial Action Plan RCRA - Resource Conservation and Recovery Act RD – Remedial Design ROD – Record of Decision TCE – Trichloroethene TCP – Trichloropropane Ug/L – micrograms per liter U.S. EPA – United States Environmental Protection Agency UST – Underground Storage Tank WBZ – Water Bearing Zone
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