

Summer Restoration Advisory Board Tour an "Explosive" Success!

On July 18, 2019, Restoration Advisory Board (RAB) members took an up-close and personal tour of the Beale Air Force Base (AFB) Explosive Ordnance Disposal (EOD) and Response Team equipment. The EOD squad at Beale AFB is led by technicians trained to detect, disarm, detonate, and dispose of conventional and unconventional explosive threats at home and abroad. Everyone enjoyed seeing the state-of-the-art remotely operated vehicles (ROVs) used to identify these threats, and many took advantage of the potentially once-in-a-lifetime opportunity to maneuver the ROVs around the equipment room and look through their camera "eyes."



SSgt Travis Ditmanson operates one of the EOD ROVs.

Despite the sweltering temperatures, Jacobs employee Jordan Ollanik eagerly volunteered to try on the bomb suit, which looks similar to the one used in the 2008 movie *The Hurt Locker*. SSgt Ditmanson informed tour participants that the suit – including the helmet – weighs approximately 100 pounds. EOD staff helped Mr. Ollanik put on the suit, explaining the importance of the order in which each piece is donned. The RAB and Environmental Restoration Program (ERP) thank the EOD Team for the tour and for their service keeping us safe from threats we hopefully never have to experience.



Jordan Ollanik (far left) enduring the weight of the EOD bomb suit, supported by (left to right) A1C Hunter Rudnik, SRA Derrece Hawthorne, MSgt Mark Brady, and SSgt Travis Ditmanson

Upcoming Fieldwork at Site SS507

Site SS507, located in the northern Cantonment Area, was identified during an investigation of an electrical transformer waste accumulation area near Building 2539 in the civil engineering yard. Volatile organic compounds (VOCs) were released to the subsurface from defects in the sanitary sewer lines along nearby B Street and Doolittle Drive. The site currently consists of two unused parking lots, sanitary sewer lines, and open space.

Additional fieldwork will be conducted this fall to adequately assess potential vapor intrusion risk. Three new dual completion vapor monitoring points will be installed, sampled, and analyzed for perchloroethylene (PCE), a VOC detected in recent groundwater samples at concentrations exceeding residential risk-based screening levels for vapor intrusion.

Drilling, installation, and initial sampling will occur in September and October 2019. A second round of vapor sampling is planned for February or March 2020.

Once fieldwork is complete, an updated vapor intrusion risk assessment will be conducted using the data collected from the new vapor monitoring points and the most recent groundwater data collected as part of the Basewide Groundwater Monitoring Program.

Military Munitions Response Program Investigations

A Military Munitions Response Program Remedial Investigation (RI) was completed for 16 munitions response

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sites (MRSs) in 2015. Based on the results of the RI, 7 of the 16 MRSs (ML595, SR614, SR615, SR617, SR622, ML625, and ED631) were recommended for expanded investigation beyond previously established boundaries, and one MRS (GR592) was recommended for an interim removal action (IRA). During the GR592 IRA, a new MRS (FR970) was identified requiring investigation.

Data Gap Investigation and Remedial Investigation Fieldwork

Beale AFB conducted fieldwork in support of a data gap investigation for MRSs ML595, SR614, SR615, SR617, SR622, ML625, and ED631 and an RI of FR970 in July through November 2018. The MRS locations are shown in the inset below. The goal of the fieldwork was to collect sufficient data to determine the nature and extent of munitions and explosives of concern (MEC) and munitions constituents (MC) at the eight MRSs so that informed risk management decisions can be made to select appropriate future response actions.



Locations of 16 MRSs investigated in 2015

Nesting bird surveys preceded the field effort and were completed at each MRS to identify any nesting bird activity that would need to be avoided. Avoidance measures included delayed start of fieldwork until nests were no longer active and establishing exclusion buffers around nests. A cultural resource survey was performed within a 2.48-acre portion of ML595 to determine if cultural resources were present and would need be avoided.

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Surface sweeps, digital geophysical mapping (DGM) surveys, intrusive investigations of anomalies, and MC sampling and analysis were completed.

Surface Sweeps: A surface sweep was completed at each MRS to remove MEC, metallic surface debris, and potential surface hazards that may interfere with DGM surveys.

DGM Surveys: DGM surveys were completed on transects (except in FR970 where surveys were completed on grids) to locate subsurface anomalies potentially representing MEC. The DGM surveys were performed using an EM61-MK2 metal detector in a towed array configuration. A portable system was used in areas inaccessible to the towed array. These systems were coupled with real-time kinematic global positioning system.

Intrusive Investigations: Anomalies identified as potential MEC as a result of analysis of the DGM survey data were reacquired, flagged, and intrusively investigated by unexploded ordnance (UXO) technicians.

MC Sampling and Analysis: Soil samples were collected and analyzed for MC (metals and explosives, and White Phosphorous at one location) based on the results of the surface sweep and intrusive investigation, which identified MEC or significant munitions debris locations. Soil samples were also collected at each location where MEC items were detonated. In addition, shallow groundwater samples were extracted from three temporary wells installed at ED631 (which served as a former Open Burn/Open Disposal Area).



The DGM towed array system in action

MEC Identified: A total of fourteen MEC items were identified during the fieldwork: six in SR614, one in SR617, six in ML595, and one in FR970 as listed below. Two were identified during the surface sweep and the remainder during the intrusive investigation.

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MRSMECSR61481 mm White Phosphorous mortar
(surface), two 57 mm projectiles, and
three 37 mm projectilesSR617MK II grenade with fuzeML595Four 57 mm projectiles (one on
surface) and two 37 mm projectilesFR970One 2.36-inch rocketNote:
mm = millimeter(s)

All MEC were safely destroyed either in place or at an alternate location within the MRS if determined safe to move.



MEC (37 mm and 57 mm projectiles)

Data Gap Investigation/RI and Feasibility Study Reports: Based on the fieldwork results, one report was prepared for the FR970 MRS and one report for the ML595, SR614, SR615, SR617, SR622, ML625, and ED631 MRSs. Both reports are currently undergoing review/comment/ response cycles with California Department of Toxic Substances Control and Central Valley Regional Water Quality Control Board. The reports describe the investigations and results of the investigations, and present the site-specific conceptual site models, MEC hazard assessments, MC risk assessments, and Munitions Response Site Prioritization Protocol scoring for each MRS. The reports identify the remedial action objectives for each MRS, describe the identification and screening of technologies/remedial alternatives, and present the detailed and comparative analysis of remedial alternatives. Five alternatives were evaluated for each MRS as follows:

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- Alternative 1: No Action
- Alternative 2: Land Use Controls (LUCs)
- Alternative 3: MEC Surface Removal and LUCs
- Alternative 4: MEC Surface and Subsurface Removal (DGM)
- Alternative 5: MEC Surface and Subsurface Removal (Advanced Geophysical Classification)

Proposed Plan (PP) and Record of Decision (ROD): When the RI reports are accepted, the U.S. Air Force (Air Force) will identify the preferred alternative or "remedy" for each MRS in a PP. The PP will be made available for public review and comment, and a public meeting will be held to address public concerns, if any. After consideration of public comments, the Air Force will document the selected remedy for each MRS in a ROD. The ROD is a legally binding document that identifies the selected final response.

Closure Corner

The Air Force is continuing this regular feature in the Restoration Advisory Board newsletter to keep you informed on recent project achievements.

One ERP site at Beale AFB has closed since the March 2019 newsletter. This is an environmental cleanup site where the objectives have been achieved because remedial activity was not necessary or has been completed. No further actions, monitoring, land use restrictions, or management are required; and the following site is considered suitable for unlimited use and unrestricted exposure:

Site SS035 – Weapons Storage Area: Previous excavation and soil vapor extraction have eliminated the need for further remedial action for the protection of human health and the environment under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). No action was required for sediment and surface water. Groundwater beneath the site requires further remediation and is being addressed under Site CG041 (Basewide Groundwater).

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Restoration Advisory Board Tours and Meetings

You are cordially invited to attend the public RAB tours and meetings. RAB meetings are held at the One Stop Center for Business and Workforce Development, Second Floor, 1114 Yuba Street, Marysville, California. The next RAB meeting will be held on November 14, 2019, from 6:00 to 7:00 p.m.

For more information on the RAB at Beale AFB, to be placed on the mailing list, or to inquire about becoming a RAB member, please contact any of the following individuals:

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For more information on the upcoming RAB activities, please contact:

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