



# Robins Air Force Base Environmental Advisory Board (EAB)



## Fact Sheet

Volume 11, Issue 3, February 2017

### The Robins AFB EAB

Recognizing the importance of public involvement in environmental matters, Robins Air Force Base (Robins AFB) has established the Environmental Advisory Board (EAB). The mission of the EAB is to encourage participation of surrounding communities in the Base's environmental programs and allow community members and other stakeholders to have meaningful dialog with Base officials. Specifically, the EAB serves to promote community awareness and obtain constructive community review, comment, and input on current and proposed actions associated with environmental programs at Robins AFB. The EAB supports the Air Force environmental mission of sustaining readiness, being a good neighbor, protecting human health and the environment for the Base and community, and making smart business decisions.

### Inside this issue...

Update on Progress at Select Restoration Sites:

Solid Waste Management Unit (SWMU) 47 ... page 2

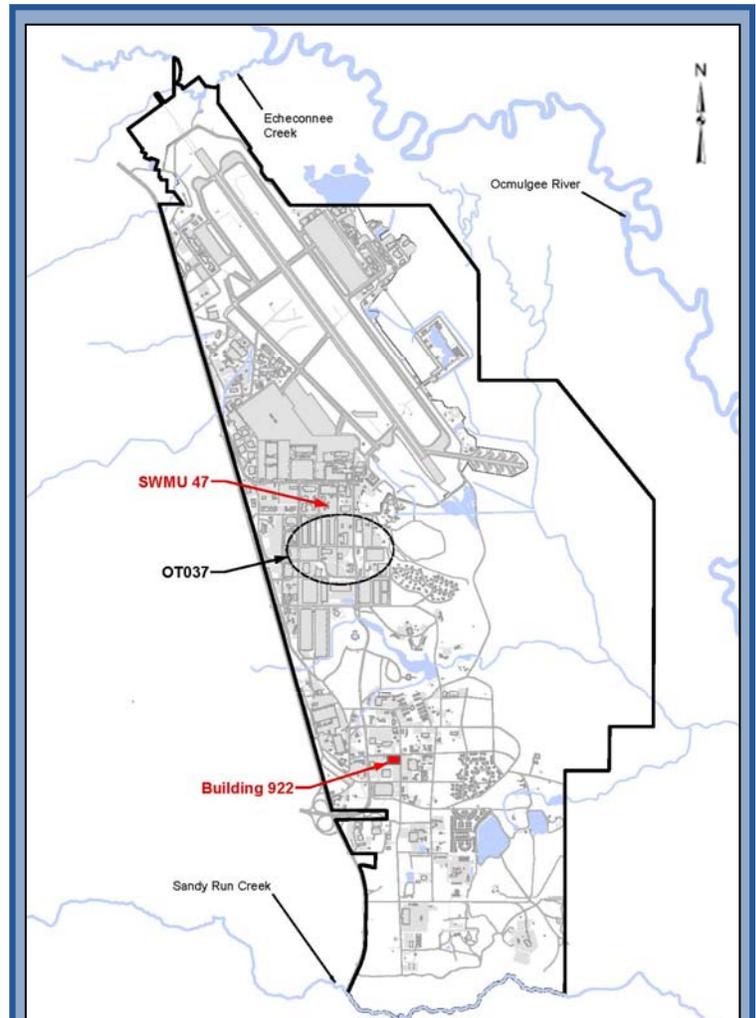
Building 922..... page 3

Other Site (OT) 0037 ..... page 3

### UPDATE ON PROGRESS AT SELECT RESTORATION SITES

At the recent EAB meeting, **Mr. Mike Perlmutter with CH2M** briefed on the status of the cleanup efforts at select restoration sites covered under the Performance-Base Remediation (PBR) contract. Specifically, the sites discussed during the meeting included: (i) SWMU 47 (CG-504); (ii) Building 922 (TU/US-C507); and (iii) OT037 (SWMU 62). The status of each site is discussed in this Fact Sheet.

*(Continued on page 2)*



CH2M provided an overview of the remedial progress at SWMU 47, Building 922, and OT037 at the winter EAB meeting.

### February 2017 EAB Meeting

The winter EAB meeting was held on Thursday, February 2, 2017. The topics briefed included: "Update on Progress at Selected Restoration Sites." The sites briefed included SWMU 47 (CG-504); Building 922 (TU/US-C507); and OT037 (SWMU 62).

This *Fact Sheet* provides a summary of the information and topics discussed during the meeting. The next meeting will be held on Thursday, May 4, 2017.

## UPDATE ON PROGRESS AT SELECT RESTORATION SITES (CONT'D...)

(Continued from page 1)

### SWMU 47 (CG-504)

SWMU 47 is located in the Greater Base Industrial Area. The site is defined as the contaminated soil and groundwater in the vicinity of Building 177 (Steam Plant) that resulted from a leaking underground fuel line connected to a 250,000 gallon aboveground storage tank (AST) containing No. 2 diesel fuel.

Soil contamination at SWMU 47 was identified in 1996, and a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was completed in 1997. Contaminants at the site generally consist of petroleum-related volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and arsenic.

The original remedy for the site, as presented in the 2003 Corrective Action Plan (CAP), included biosparging with light non-aqueous phase liquid (LNAPL) recovery.

In 2012, a CAP Addendum was prepared, which included continued LNAPL recovery and surfactant flushing using a biodegradable surfactant to promote mobilization, solubilization, and recovery of LNAPL. Excavation of a small area (approximately 45 cubic yards) of arsenic-impacted soil was also included.

During the initial surfactant flushing activities, groundwater was extracted from the subsurface, treated, amended with surfactant, and re-injected into the subsurface. Due to challenges with re-injecting the water, the process was modified to a more traditional pump and



Example of a mobile multi-phase extraction system.



Excavation to remove arsenic-impacted soil.

treat system, with the treated water being discharged to the Base's Industrial Wastewater Treatment Plant.

To date, using both approaches, approximately 500 gallons of LNAPL have been recovered. Decreases in product thickness and reductions in dissolved phase groundwater concentrations have been observed over the past few years.

However, LNAPL is persistent in groundwater adjacent to Building 177. To address this observation, CH2M is planning to conduct a Supplemental Site Investigation (SSI) at the site. The SSI will include soil sampling and installation of at least eight monitoring wells (including some inside the building).



Example of equipment for drilling indoors at Building 177.

During the soil sampling, Sudan IV dye test kits will be used to assess the presence of free product in the soil samples. This information will assist with identifying the best locations to install the monitoring wells.

The wells will be gauged weekly for 90 days to assess the LNAPL thickness. LNAPL forensic analysis and fingerprinting will also be conducted to evaluate the age and characteristics of the LNAPL, which may help to identify the source of the free product.

Following the SSI, the conceptual site model will be updated and used to evaluate the path forward remediation activities at SWMU 47. LNAPL removal and groundwater recovery, water level and LNAPL gauging, and semi-annual groundwater sampling will continue until a revised remedial approach is developed and approved.

### Building 922 (TU/US-C507)

Building 922 is the Base's operational gasoline service station. Investigations and remedial actions at the site began in 1993 after a confirmed fuel release in 1992. In 2001, the site was granted

(Continued on page 3)

## UPDATE ON PROGRESS AT SELECT RESTORATION SITES (CONT'D...)

*(Continued from page 2)*

No Further Action (NFA) status by the Georgia Environmental Protection Division (GA EPD) Underground Storage Tank (GUST) Program based on alternative cleanup levels. However, in 2010, during removal and replacement of underground storage tanks (USTs) at the site, residual contamination was observed, and the GUST Program requested additional site investigations and remediation, as appropriate.

Mr. Mike Perlmutter of CH2M gave an update on the restoration progress during the EAB. In 2013, a CAP was submitted to the GA EPD and approved. The CAP remedy included an air sparge/soil vapor extraction (AS/SVE) system, multi-phase extraction (MPE), and surfactant flushing.

The AS/SVE system was installed and began operation in December 2013. To enhance LNAPL removal, an MPE system was installed and began operation in May 2015.

Between December 2013 and August 2015, nearly 79,200 pounds of petroleum hydrocarbons were removed from the subsurface with these systems. LNAPL has not been detected in site monitoring wells since August 2015.

The original performance objective for Building 922 included achieving Federal Primary Drinking Water Standards Maximum Contaminant Levels (MCLs) in groundwater, which would allow unlimited use of/unrestricted exposure to site groundwater. CH2M worked with the Air Force and the GA EPD to revise the objective to approve a risk-based Alternate Concentration Limit (ACL) for benzene as the remedial level for the site. The risk-based approach is allowable under GA EPD regulations and is appropriate for an active gas station.

By August 2016, based on observations that benzene groundwater concentrations at the site were below the ACL, no LNAPL had been detected in over a year, and the mass removal from the remediation systems was asymptotic, the remediation system operations were terminated.

Quarterly groundwater sampling continues at the site. If the LNAPL remains below detection limits

and benzene concentrations remain below the ACL, the site will receive NFA following the compliance monitoring period. The remediation systems will be decommissioned once the site is granted NFA status by the GA EPD.

### OT037 (SWMU 62)

OT037 is defined as the chlorinated solvent groundwater plume that was originally identified in 1999. The source of the plume is generally thought to be associated with a 48-inch storm sewer outfall (i.e., the Third Street outfall). The previous remedy for the site included a pump and treat system for groundwater.

As part of the optimized remedy for the site under the PBR contract, CH2M shut down the pump and treatment system and implemented a strategy to use in-situ chemical oxidation (ISCO) using potassium permanganate.

The first injection occurred in May 2013, with 240,000 gallons of a three percent potassium permanganate solution injected into 22 newly installed injection wells. Site monitoring data collected after the injection event indicate decreases in groundwater contaminant concentrations shortly after the injections, followed by some rebound in contaminant concentrations.

To address the rebound, CH2M is currently in the process of implementing a second injection event. The injections are targeting three areas of the site: two areas with existing injection wells and a third area where direct push technology (DPT) will be used to install temporary injection wells.



EAB Members view a container of potassium permanganate (top) and an injection screen (bottom) at the recent EAB meeting.

*(Continued on page 4)*

## UPDATE ON PROGRESS AT SELECT RESTORATION SITES (CONT'D...)

*(Continued from page 3)*

Following the injection event, CH2M will continue to conduct semi-annual groundwater sampling and possibly conduct a third ISCO event in 2018. The performance

objective for OT037 is Response Complete by September 2020 (i.e., achieving MCLs in groundwater samples collected from the site monitoring wells).



Staging area for mixing the injection solution.



Injection setup.



Wellhead connection for injection.

For more information regarding the EAB, please contact  
**Ms. Charline Logue, Robins AFB EAB Manager**, at (478) 327-9268  
or visit <http://www.robinseab.org>

### Acronyms

ACL	Alternative Concentration Limit
AFB	Air Force Base
AS/SVE	Air Sparge/Soil Vapor Extraction
AST	Aboveground Storage Tank
CAP	Corrective Action Plan
EAB	Environmental Advisory Board
GA EPD	Georgia Environmental Protection Division
GUST	GA EPD Underground Storage Tank
ISCO	In-Situ Chemical Oxidation
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
MPE	Multi-Phase Extraction
NFA	No Further Action
OT	Other Site
PBR	Performance-Based Remediation
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SSI	Supplemental Site Investigation
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
UST	Underground Storage Tank
VOC	Volatile Organic Compound

### Environmental Advisory Board Members

<b>Mr. Alexander Stokes,</b> Robins AFB Installation Co-Chair	<b>Mr. James Harden,</b> Warner Robins Community Member	<b>Mr. Mike Maffeo,</b> Macon Community Member
<b>Dr. Linda Smyth,</b> Macon Community Co-Chair	<b>Mr. John Harley,</b> Centerville Community Member	<b>Dr. Brian E. Rood,</b> Macon Community Member
<b>Ms. Anna Cornelious,</b> US EPA Region 4 Superfund Division	<b>Mr. Stephen Johnson,</b> Macon Community Member	<b>Mr. Don Thompson,</b> Macon Community Member
<b>Mr. Jim Ashworth</b> GA EPD Hazardous Waste Management	<b>Ms. Debra Jones,</b> Warner Robins Community Member	<b>Mr. Penrose Wolf,</b> Perry Community Member