



# Robins Air Force Base Environmental Advisory Board (EAB) *Fact Sheet*



Volume 13, Issue 3, February 2019

## The Robins AFB EAB

Recognizing the importance of public involvement in environmental matters, Robins Air Force Base (Robins AFB or Base) 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...

Updates on Progress at Select Restoration Sites:  
 Solid Waste Management Unit (SWMU) 20 ... page 2  
 SWMU 61 ..... page 2  
 SWMU 28 (CG028)..... page 3  
 Recognition of Mr. Don Thompson..... page 4

## February 2019 EAB Meeting

The winter EAB meeting was held on Thursday, February 7, 2019. The topics briefed included “Update on Progress at Select Restoration Sites.”

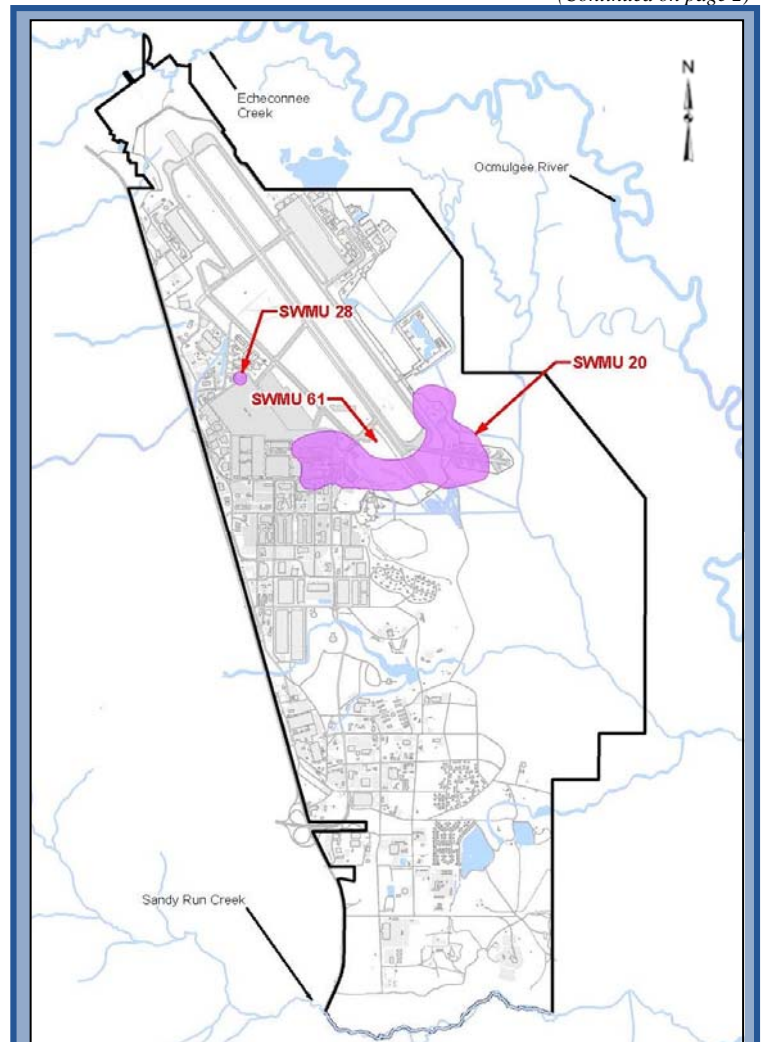
This *Fact Sheet* provides a summary of the information and topics discussed during the meeting.

**The next meeting will be held on Thursday, May 2, 2019.**

## UPDATES ON PROGRESS AT SELECT RESTORATION SITES

At the recent EAB meeting, **Ms. Meg Greenwald** of CAPE Environmental Management Inc. (CAPE) briefed on the status of the cleanup efforts at select restoration sites covered under the Performance-Based Remediation (PBR) contract. Specifically, the sites discussed during the meeting included: (i) SWMU 20; (ii) SWMU 61; and (iii) SWMU 28. The status of each site is presented in this Fact Sheet.

*(Continued on page 2)*



CAPE provided updates on the cleanup efforts at three restoration sites during the recent EAB meeting.

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

(Continued from page 1)

### SWMU 20

Groundwater contamination at SWMU 20 consisting of volatile organic compounds (VOCs) was discovered in the 1980s. The plume extends from multiple soil SWMUs located in the Greater Base Industrial Area (GBIA). Groundwater contamination is located at a maximum depth of approximately 100 feet below ground surface.

The Corrective Action Plan (CAP) for SWMU 20 was approved in 2002 and required operation of an Air Sparge/Soil Vapor Extraction (AS/SVE) cutoff curtain and a downgradient groundwater extraction system for contaminant mass removal. The remedy also includes a network of approximately 60 monitoring wells.

Under the PBR Contract, CAPE has: (i) conducted a site investigation in the source area to further delineate the contamination at the site; (ii) shut down the groundwater extraction system; (iii) continued operation of the AS/SVE curtain; and (iv) implemented a focused source area remediation using a horizontal directionally drilled AS/SVE well and several vertical AS/SVE well pairs. The expanded AS/SVE system began operation in March 2014.

Based on groundwater samples collected in 2018, trichloroethene (TCE) concentrations in the source area wells have decreased from levels greater than 1,000 micrograms per liter (ug/L) to below 500 ug/L.

The PBR performance metric for SWMU 20 is based on the geometric mean of TCE concentrations in groundwater samples collected from wells located in the source area. The geometric mean of TCE concentrations in these source area wells is currently below the performance metric.

The path forward for SWMU 20 is continued operation of the AS/SVE system until the remediation goals are met, followed by monitored natural attenuation (MNA). Confirmation sampling will commence once the site remediation levels have been met.

### SWMU 61

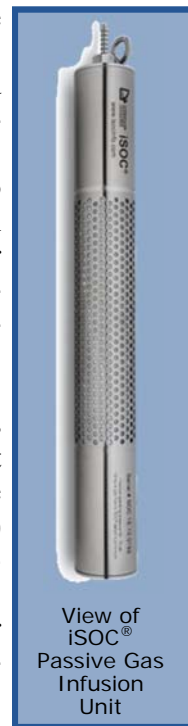
SWMU 61 is located at the southern end of the airfield. The source of the petroleum contamination was identified as a leaking valve located on an 8-inch diameter underground Jet Propellant Number 8 (JP-8) fuel supply line. The remedy for the site, as specified in the 2002 CAP, consisted of AS/SVE, followed by MNA.

The AS/SVE system ran from 2003 to 2009. In January 2009, as a result of contaminant concentrations being reduced to near Remedial Levels (RLs), the AS/SVE system ceased operation, and the site remedy transitioned to MNA. In 2011, based on concentrations below RLs in three of the four site wells, the Georgia Environmental Protection Division (GA EPD) reduced the annual sampling requirement to only one well, S61MW4.

Due to recalcitrant benzene concentrations and a detection of 1,3,5-trimethylbenzene concentration above the RL in 2013 in groundwater samples collected from this well, CAPE began quarterly groundwater monitoring at this site in October 2013. CAPE also installed In-Situ Submerged Oxygen Curtains (iSOC<sup>®</sup>) in December 2013, and conducted oxygen releasing compound injections using Ter-SOX<sup>™</sup> in January 2014.

The results from the sampling events indicated a decrease in contaminant concentrations below the RLs for the site contaminants of concern (COCs) immediately following the implementation of these technologies. However, the concentrations for benzene and naphthalene then rebounded.

In June and August 2018, CAPE conducted injections of dilute hydrogen peroxide and water to stimulate biological processes at the site. Field measurements have indicated increases in dissolved oxygen at the site; however, naphthalene concentrations have not yet decreased. CAPE also installed new oxygen diffusers to replace the



View of  
iSOC<sup>®</sup>  
Passive Gas  
Infusion  
Unit

(Continued on page 3)

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

(Continued from page 2)

iSOC<sup>®</sup> units in December 2018.

The path forward for SMWU 61 is continued operation of the oxygen diffusers. When the COC concentrations in groundwater samples collected from S61W4 are below RLs, closure monitoring can be conducted. COC concentrations must remain below the RLs for three years before the site can be closed. The goal for SWMU 61 is Site Closure.

### SWMU 28

SWMU 28 is the site of a fuel release from purge fluid tanks located west of the taxiways/runway. Contamination generally consists of free product and dissolved petroleum hydrocarbons in groundwater.

The previous remedy for the site consisted of free product recovery. Under the PBR Contract, CAPE developed an optimized remedy for the site to consist of Enhanced Fluid Recovery (EFR<sup>®</sup>) and surfactant flushing, which was conducted between August 2012 and February 2015. Following these events, rebound in light non-aqueous phase liquid (LNAPL) thicknesses occurred.

To address the rebound in free product thickness, CAPE then implemented a Surfactant Enhanced Aquifer Remediation (SEAR) approach, in which the surfactant formula and delivery method was modified to contact and remove more free product.

A non-emulsifying surfactant was developed, which means that the surfactant itself and the free product will remain in separate phases. The delivery method for the site-specific surfactant is to inject it in a hydraulically controlled flood, which results in a larger treatment area, and subsequently extract it.

The revised approach included: (i) a site-specific phase behavior study (June 2016); (ii) the development of a hydraulic model (October 2016); (iii) installation of extraction/injection wells (late 2016); (iv) a pilot test followed by system modifications (December 2016 to May 2017); and (v) full scale implementation (May to August 2017).

During the full scale implementation, approximately 1.8 million gallons of surfactant, polymer, and potable water were injected, and approximate-

ly 1.6 million gallons was extracted. Field conductivity measurements were conducted to track surfactant concentrations in the extraction wells.

As a result of the full scale SEAR implementation, sitewide LNAPL thicknesses decreased. Previously trapped LNAPL pockets had been mobilized to recovery points, but additional recovery was needed. To recover this LNAPL, CAPE implemented a potable water flush/groundwater extraction event in November/December 2017. Passive skimmer pumps and absorbent socks were subsequently deployed in January 2018 to remove remaining LNAPL.

With respect to groundwater contamination, dissolved phase concentrations have reduced in groundwater monitoring across the site once the LNAPL in the well has been removed. Geochemical data indicate that natural biodegradation processes are also present at SWMU 28.

The path forward at SWMU 28 consists of monthly free product gauging. The skimmer pumps and absorbent socks will be removed when LNAPL is no longer observed in a well. The goal is to achieve RLs in all site groundwater wells by 2020.



Views of the full-scale remediation treatment system.



## RECOGNITION OF MR. DON THOMPSON

The Robins AFB EAB lost one of their members on November 2, 2018 with the passing of Mr. Don Thompson. Mr. Thompson was an original member of the Robins EAB and served 10 years as the EAB Community Co-Chair.

As part of the winter EAB meeting, Dr. Linda Smyth, the current EAB Community Co-Chair, read his obituary. Amended excerpts of this are presented below.

Mr. Thompson joined the Army during World War II, served three years, and then returned to the United States to finish his education. He also served for 17 years as a member of the Air National Guard.

He received his undergraduate degree from Oklahoma State University majoring in Agri-

culture and a Graduate Degree from the University of New Hampshire in Civil Engineering. He then joined Metcalf and Eddy Engineering Consultants overseeing the construction, training and startup of water and wastewater treatment plants. In 1985, he was hired by the Macon Water Authority as Director of Water and Wastewater facilities. Mr. Thompson belonged to several professional organizations in his career, including the EAB.



Mr. Don Thompson (left) and Mr. Mike Perlmutter from Jacobs (right) inspect an iSOC<sup>®</sup> unit at the Horse Pasture Site at the May 2014 EAB Tour.

For more information regarding the EAB, please contact  
**Ms. Laurel Cordell, Robins AFB EAB Manager**, at (478) 327-9275  
 or visit <http://www.robinseab.org>

<u>Acronyms</u>	
AFB	Air Force Base
AS	Air Sparge
CAP	Corrective Action Plan
CAPE	CAPE Environmental Management Inc.
COC	Contaminant of Concern
EAB	Environmental Advisory Board
EFR <sup>®</sup>	Enhanced Fluid Recovery
GA EPD	Georgia Environmental Protection Division
iSOC <sup>®</sup>	In Situ Submerged Oxygen Curtain
JP-8	Jet Propellant Number 8
LNAPL	Light Non-aqueous Phase Liquid
ug/L	micrograms per liter
MNA	Monitored Natural Attenuation
PBR	Performance-Based Remediation
RL	Remedial Level
SEAR	Surfactant Enhanced Aquifer Remediation
SWMU	Solid Waste Management Unit
SVE	Soil Vapor Extraction
TCE	Trichloroethene
VOC	Volatile Organic Compounds

### Environmental Advisory Board Members

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