



Robins Air Force Base Environmental Advisory Board (EAB)

Fact Sheet



Volume 11, Issue 1, August 2016

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.

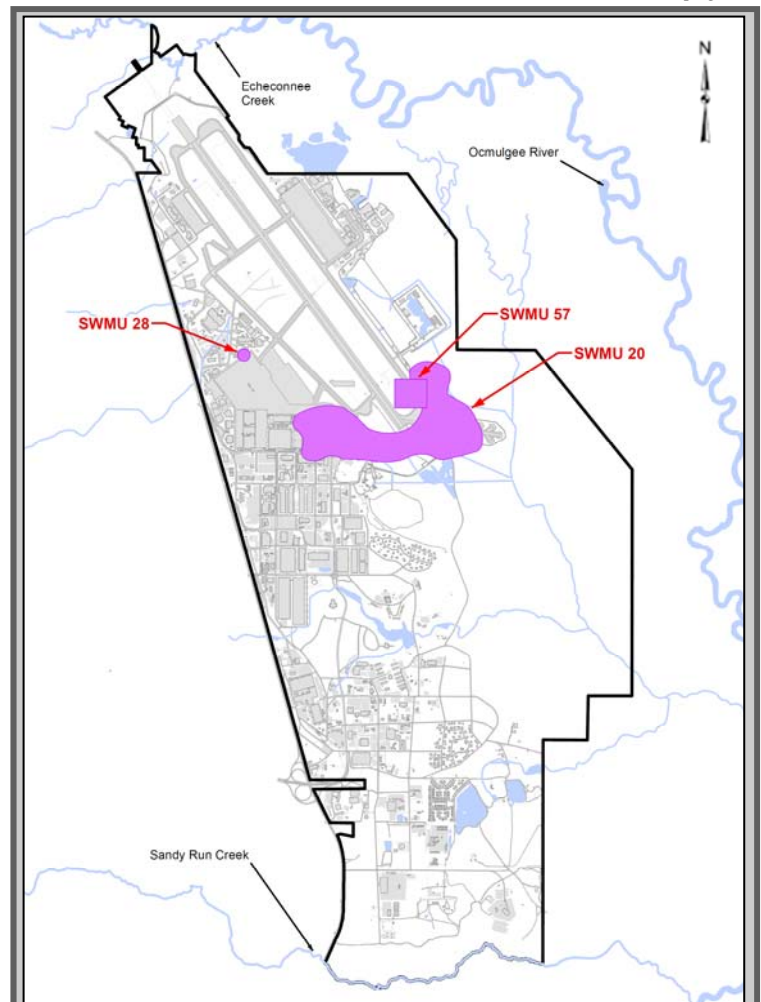
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UPDATE ON PROGRESS AT SELECT RESTORATION SITES

At the recent EAB meeting, Ms. Corinne Walker and Mr. David Fortune of CAPE Environmental Management, Inc. (CAPE) 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 20 (OT020); (iii) SWMU 28 (CG-028); and (iii) SWMU 57 (OT041). The status of each site is presented in this Fact Sheet.

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CAPE provided an overview of the remedial progress at SWMUs 20, 28, and 57 at the summer EAB meeting.

August 2016 EAB Meeting

The summer EAB meeting was held on Thursday, August 4, 2016. The topics briefed included: "Update on Progress at Selected Restoration Sites." The sites briefed included Solid Waste Management Unit (SWMU) 20 (OT020); SWMU 28 (CG-028); and SWMU 57 (OT041).

This *Fact Sheet* provides a summary of the information and topics discussed during the meeting. The next meeting will be held on Thursday, December 1, 2016.

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

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SWMU 20 (OT020)

SWMU 20 is defined as the Greater Base Industrial Area chlorinated solvent groundwater plume. The plume extends from multiple soil SWMUs. The original Corrective Action Plan (CAP) for the site was approved in 2002. Under this CAP, the remediation system for the site originally included operation of a groundwater extraction system and an Air Sparge/Soil Vapor Extraction (AS/SVE) system. Monitored Natural Attenuation (MNA) is implemented for portions of the plume not influenced by the active systems.

As part of the Contract, CAPE has conducted a source area investigation to further delineate the contamination at the site; shut down the groundwater extraction system; continued operation of the AS/SVE curtain; and 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 2015, 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 performance metric for SWMU 20 under the PBR Contract is based on the geometric mean of TCE concentrations in groundwater samples collected from wells located in the source area. Since start-up of the expanded AS/SVE system in April 2014, the geometric mean of TCE concentrations in these source area wells has decreased approximately one order of magnitude (i.e., from 1,000 ug/L to 100 ug/L).

The AS/SVE system is scheduled to run through 2018, followed by MNA to remediate the residual contamination at the site through 2027. Confirmation sampling will be conducted from 2027 to 2030. Site closure at SWMU 20 is projected for 2030.

SWMU 28 (CG-028)

SWMU 28, located on the north end of the Base near the flightline and Building 45, is the site of a fuel release from purge fluid tanks. Contamination generally consists of free product and dissolved petroleum hydrocarbons in groundwater.

The previous remedy for the site consisted of manual removal of free product with natural attenuation of the contamination in the groundwater. To accelerate cleanup of the site, CAPE implemented an optimized remedy consisting of Enhanced Fluid Recovery (EFR[®]) and Surfactant Enhanced Aquifer Remediation (SURFAC[®]).

EFR[®] involves pulling a vacuum on the subsurface through a series of extraction wells. The vacuum removes contaminated groundwater and free product from the subsurface. With the SURFAC[®] process, the EFR[®] process is conducted and then a surfactant is injected into the wells to increase the mobility of the free product. A second EFR[®] event is conducted to vacuum out the surfactant and mobilize free product in the groundwater.

To date, a series of EFR[®] events and SURFAC[®] events have been conducted, and free product thickness at the site was observed to decrease following these events. However, in December 2015, a rebound in product thickness occurred.



Bailer with Free Product and Sur-



Close-up of Wellhead with EFR[®] Connection

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

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Based on an assessment that the site conditions were worse than expected at SWMU 28, the contract goal for SWMU 28 has been revised from unrestricted Site Closeout by September 2020 to: (i) achieving 100 percent removal of free product in the site wells by mid-2017; and (ii) achieving groundwater remedial levels by 2020.

To address the rebound in free product thickness and meet the revised contract goals, CAPE is currently modifying the surfactant formula and delivery method to contact and remove more free product.

A site-specific surfactant is being developed in a laboratory using free product and groundwater obtained from the site. The surfactant will be non-emulsifying, which means that the surfactant itself and the free product will remain in separate phases. The delivery method for the site-specific surfactant will be to inject it in a hydraulically controlled flood, which will result in a larger treatment area.



Example of Treatment Manifold for Optimized Surfactant Remedial System

Once the free product has been removed from the site, CAPE may implement enhanced bioremediation to decrease the groundwater contaminant concentrations to remedial levels.

The path forward for the site is to implement the optimized surfactant approach in January 2017 and achieve 100 percent free product removal by mid-2017. If there is no decrease in the groundwater concentrations following the removal of the free product, CAPE will then implement the enhanced bioremediation approach. The contract goal is to achieve remedial levels in all site groundwater wells by 2020.

SWMU 57 (OT041)

SWMU 57 is defined as the twin 72-inch underground storm drain box culvert system located near the southern end of the main runway. Contamination at the site was identified during a 1995 survey that was conducted to inspect the integrity of the culvert system. Primary contaminants at the site include chlorobenzene and benzene.

The original remedy consisted of groundwater extraction. The groundwater extraction system provided contaminant mass removal and hydraulic containment of the groundwater plume. As part of the optimized remedy for the site, CAPE

installed two biosparge wells with horizontal directional drilling: one along the plume axis and the other as a cutoff curtain along Beale Drive.



Installation of Biosparge Well at

In January 2014, the groundwater extraction system was shut down, and the biosparge system began operation. The groundwater sampling results collected since startup show decreases in contaminant concentration levels, as well as a decrease in the extent of the groundwater contaminant plume.

As part of the design activities for the biosparge system, however, CAPE identified elevated levels of soil contamination based on measurements collected with a screening tool. To further investigate the potential for this soil contamination to be acting as a source to groundwater contamination, a supplemental soil and groundwater investigation will be conducted in the fall of 2016.

EAB Says Goodbye to Ms. Mary Brown

Ms. Mary Brown has served as the Georgia Environmental Protection Division (GA EPD) representative on the EAB for the past 13 years.

As of the end of August 2016, Ms. Brown has retired from the GA EPD, and the summer EAB was her last EAB meeting.

At the EAB meeting, Mr. Lex Stokes, Robins AFB EAB Installation Co-Chair, presented Ms. Brown with two military coins in recognition of her service. Coins are often given to people who management feels has done an “outstanding” job.

The first coin presented was from the Civil Engineer Squadron at Robins AFB, and the second coin was from

the Air Force Civil Engineer Center (AFCEC). Mayor Harley also gave Ms. Brown a coin to recognize her service on behalf of the City of Centerville.

Ms. Charline Logue, the EAB Manager, thanked Ms. Brown for her service and noted that the group will very much miss her

willingness to work with Team Robins to have such a successful environmental program.



Mr. Lex Stokes, Installation Co-Chair, presents Ms. Brown with a military coin in recognition of her outstanding service on the Robins AFB EAB.

Acronyms

AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AS/SVE	Air Sparge/Soil Vapor Extraction
CAP	Corrective Action Plan
CAPE	CAPE Environmental Management, Inc.
EAB	Environmental Advisory Board
EFR®	Enhanced Fluid Recovery
GA EPD	Georgia Environmental Protection Division
ug/L	micrograms per liter
MNA	Monitored Natural Attenuation
PBR	Performance-Based Remediation
SURFAC®	Surfactant Enhanced Aquifer Remediation
SWMU	Solid Waste Management Unit
TCE	Trichloroethene

For more information regarding the EAB, please contact
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Environmental Advisory Board Members

Mr. Alexander Stokes, Robins AFB Installation Co-Chair	Mr. James Harden, Warner Robins Community Member	Mr. Mike Maffeo, Macon Community Member
Dr. Brian E. Rood, Macon Community Co-Chair	Mr. John Harley, Centerville Community Member	Dr. Linda Smyth, Macon Community Co-Chair
Ms. Lila Llamas, US EPA Region 4 Hazardous Waste Division	Mr. Stephen Johnson, Macon Community Member	Mr. Don Thompson, Macon Community Member
Ms. Mary Brown, GA EPD Hazardous Waste Management	Ms. Debra Jones, Warner Robins Community Member	Mr. Penrose Wolf, Perry Community Member