
Community Relations Plan

Warner Robins Air Logistics Center Robins Air Force Base, Georgia

prepared for



Environmental Division
78th Civil Engineer Group
Robins Air Force Base, Georgia

submitted by

Geosyntec Consultants, Inc.
Warner Robins, Georgia
Contract No. FA4890-04-D-0008, D.O. Q607

December 2009



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LIST OF ACRONYMS AND OFFICE SYMBOLS

78 CEG/CEV	78th Civil Engineer Group, Environmental Division
ABW	Air Base Wing
ACW	Air Control Wing
AFB	Air Force Base
AFMC	Air Force Materiel Command
ALC	Air Logistics Center
AOC	Area of Concern
ARB	Air Reserve Base
ASW	Aircraft Sustainment Wing
ATSDR	Agency for Toxic Substances and Disease Registry
BCE	Before the Common Era
CAP	Corrective Action Plan
CEG	Civil Engineer Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEVP	Programming Branch of the Environmental Division
CRP	Community Relations Plan
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CSW	Combat Sustainment Wing
DoD	Department of Defense
EAB	Environmental Advisory Board
ERP	Environmental Restoration Program
ft ²	Square feet
FY	Fiscal Year
GA EPD	Georgia Environmental Protection Division
HRS	Hazard Ranking System
HWMU	Hazardous Waste Management Unit
IRA	Interim Remedial Action
IROD/RAs	Interim Record of Decision/Removal Actions
IRP	Installation Restoration Program
J-STARS	Joint Surveillance Target Attack Radar System
LF04	Landfill No. 4
LTM	Long-term Monitoring
MDS/SGPB	Bioenvironmental Engineering Services
MXW	Maintenance Wing
N/A	Not Applicable
NFA	No Further Action
NFRAP	No Further Response Action Planned
NPL	National Priorities List
O&M	Operations and Maintenance
OU	Operable Unit



PA	Public Affairs
PA/SI	Preliminary Assessment/Site Investigation
PCE	Perchloroethene, also known as Perchloroethylene
PP/ROD	Proposed Plan/Record of Decision
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA/PSA	RCRA Facility Assessment/Potential Source Assessment
RFI	RCRA Facility Investigation
RI/FS	Remedial Investigation/Feasibility Study
RIP	Remedy in Place
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SWMU	Solid Waste Management Unit
TCE	Trichloroethene, also known as Trichloroethylene
U.S.	United States
USAF	United States Air Force
US EPA	United States Environmental Protection Agency
WP14	Sludge Lagoon and Waste Pit 14
WR-ALC	Warner Robins Air Logistics Center



Section 1 Introduction

Recognizing the importance of public involvement in cleanup programs, Robins Air Force Base (Robins AFB) has developed this Community Relations Plan (CRP), which provides information on the two-way communication mechanisms established between the base and the local communities. The plan documents the level of awareness and interest concerning the cleanup process.

Environmental cleanup activities at Robins AFB are part of a larger Department of Defense (DoD) environmental program entitled the Environmental Restoration Program (ERP). ERP activities are primarily governed by two federal laws, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Resource Conservation and Recovery Act (RCRA). CERCLA establishes the legal requirements for identifying, investigating, and cleaning up inactive hazardous waste sites. RCRA requires corrective action for releases of hazardous waste or constituents from past or present practices and operations that pose a threat to human health and the environment from any Solid Waste Management Unit (SWMU) at a storage, treatment, or disposal facility with a RCRA permit. Information concerning the ERP process and the specific cleanup activities at Robins AFB is provided in Section 2.0. Section 2.0 also describes the location, history, and mission of Robins AFB.

The purpose of this CRP is to continue sharing knowledge and encouraging community participation related to the cleanup of environmental contamination at Robins Air Force Base. This CRP reflects the specific interests, priorities, and opinions of individuals from the local communities.

This CRP reflects the specific interests, priorities, and opinions of individuals from the local communities. Information was gathered from interviews conducted every two years from 1996 to 2008 throughout local cities including Warner Robins, Centerville, Perry, Byron, Fort Valley, and Macon. Interviewees included representatives of local municipalities, the business community, as well as members of the Robins AFB Restoration Advisory Board (RAB), rechartered in June 2006 as the Environmental Advisory Board (EAB). These interviews were conducted by a representative of the Robins AFB Environmental Division Programming Branch (78 CEG/CEVP) and an independent consultant. A summary of the results of these interviews and profiles of the various communities are presented in Section 3.0. A summary of the EAB and its relationship to the local communities is also provided in Section 3.0.

Section 4.0 identifies the community relations goals and objectives and associated activities that have taken place over the last several years and future objectives to improve two-way communication between Robins AFB and the various area communities. The structure and function of the EAB is described in Section 4.0.

Following these sections, the remainder of this document consists of the following appendices that contain supporting information:

Appendix A Community Relations Contacts

Lists names, addresses, and phone numbers of the central point of contact for the public, key Robins AFB representatives, federal and state agencies, local elected officials, and EAB membership.

Community Relations Plan
Environmental Division
The Civil Engineer Group
Robins Air Force Base, Georgia
November 2009

Annual CRP updates keep the community informed as the program progresses.



Appendix B Public Information Locations

Lists the locations of the information repository and the administrative record that contains documents related to the Robins AFB ERP and lists information on recommended locations for public meetings.

Appendix C EAB Fact Sheets

Presents EAB Fact Sheets produced during 2009 following the EAB meetings held in February, May, and August.

EAB Fact Sheets are produced following each quarterly EAB meeting and present technical information briefed in the meeting in an easily readable format supplemented with appropriate graphics.

The public's point of contact for questions is Mr. Kendahl Johnson of the Robins AFB Public Affairs (PA) Office. He can be reached as follows:

Mr. Kendahl Johnson
Public Affairs Office
78 ABW/PA
620 Ninth Street, Suite 230
Robins AFB, Georgia 31098

Phone: (478) 222-0804
Fax: (478) 926-9597
E-mail:
kendahl.johnson@robins.af.mil



Section 2 Description of Robins AFB and the ERP

The purposes of this section are to describe the location, history, and mission of Robins AFB and to review the nature and extent of environmental issues at the base, including the objectives of Robins AFB's ERP activities and specific details on environmental sites.



Robins AFB is located in the geographic center of Georgia.

2.1 BASE DESCRIPTION

2.1.1 Location

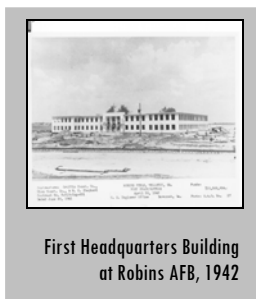
Robins AFB is located in the geographic center of Georgia, adjacent to the city of Warner Robins, within Houston County (see Figure 2-1). The base is 16 miles south of Macon and 100 miles south of Atlanta. Interstate I-75, United States (U.S.) Highways 41 and 341, and state highways 247 and 11 are the primary transportation links to the neighboring communities of Warner Robins and Centerville to the west, Perry to the south, Fort Valley to the southwest, Byron to the northwest, and Macon to the north. The Ocmulgee River borders the base on the east. The base covers 8,435 acres of upper coastal plain, of which 2,235 acres are jurisdictional wetlands and about 300 acres are upland forests. The base also owns two parcels of land in Huber, Georgia (11 acres) and Jeffersonville, Georgia (0.8 acres).

The base consists of 3.8 million square feet (ft²) of maintenance shops, 1.7 million ft² of administrative space, and 3.5 million ft² of storage space. The base's runway is the largest in Georgia, measuring 12,000 feet long by 300 feet wide, with two 1,000-foot overruns.

2.1.2 History

Robins AFB traces its history to June 1941, when Macon city fathers and civic leaders, with the help of U.S. Representative Carl Vinson, influenced the U.S. War Department to construct an Army Air Corps supply and maintenance depot in Houston County. The site was adjacent to the small town of Wellston, which at that time had a population of 47 families. The defense buildup preceding World War II was under way, and the Middle Georgia area was chosen primarily because it had land for an airfield, an abundance of pure water from artesian wells, and an abundant labor pool. These were important points to consider in 1941 when emphasis was on speed of construction.

Ground was broken officially on September 1, 1941, by the first depot commander, Colonel Charles E. "Steve" Thomas, and leading members of the Macon and Middle Georgia business and political communities. Officially dedicated on April 26, 1943, Robins Air Force Base, originally known as Robins Field (named after Brigadier General Augustine Warner Robins), played a key role in winning World War II. Robins AFB has hosted numerous units and organizations and even a major command. The primary function of the base has always been to act as the home of an Army Air Corps, then Air Force, Depot. Originally known as the Georgia Air Depot, it was renamed several times, as follows: the Southeast Air Depot, Wellston Air Depot, Wellston Army Air Depot, Warner Robins Army Air Depot, Warner Robins Air Service Command, and Warner Robins Air Technical Air Service Command. At the end of World War II, as its function changed and satellite bases were closed, the name changed several additional times. In 1946, the Depot became the Warner Robins Air Materiel Area, and the installation was renamed to Robins AFB in 1948 after the Air Force became a separate service. The Depot designation finally



First Headquarters Building at Robins AFB, 1942



changed to its present form in April 1974 when its new world-wide responsibilities led it to be renamed the Warner Robins Air Logistics Center (WR-ALC).



The changing requirements of a "Jet Age" Air Force added a new dimension to the logistics challenge and led to the development of Robins AFB as an avionics center and a huge, sprawling complex of diverse missions supporting the USAF worldwide.

The decades following World War II were a time of challenge and change for the base. After World War II, the employee population was reduced. During the Korean War, Robins AFB workers swiftly and heroically retooled and fitted hundreds of mothballed B-29s, which played a key role in saving the Republic of South Korea from Communist aggression. In the 1960s and 1970s, Robins AFB played an important part in the Southeast Asia "Pipeline," which supplied vital materiel to U.S. troops fighting in Vietnam. The changing requirements of a "Jet Age" Air Force added a new dimension to the logistics challenge and led to the development of Robins AFB as an avionics center and a huge, sprawling complex of diverse missions supporting the United States Air Force (USAF) worldwide. That support was called upon once again during operations Desert Shield and Desert Storm in the Middle East. C-141 aircraft managed by the WR-ALC were the backbone of the airlift to Saudi Arabia. C-130s, also managed by the WR-ALC, provided valuable transport capabilities for the allied forces. Workers surged parts needed to keep aircraft flying and accelerated the maintenance and repair of aircraft vital to the war effort. Another Robins AFB responsibility, the F-15 Eagle, proved its superiority during repeated air strikes over the Persian Gulf.

To better achieve an operational sustainment process, Air Force Materiel Command (AFMC) leadership decided to reorganize the entire Command along more military lines. In this process, the Air Logistic Centers were divided into new unit organizations that changed directorates into wings, divisions into groups, and branches into squadrons. Today, the WR-ALC has four Wings—the 78th Air Base Wing (78ABW), 330th Aircraft Sustainment Wing (330ASW), 402d Maintenance Wing (402MXW) and 542d Combat Sustainment Wing (542CSW).

The history at Robins AFB also included past waste disposal practices that were standard for the times. These practices sometimes led to unintended environmental contamination. Though these practices have long since been discontinued, the ERP efforts today are targeted at total cleanup from this past contamination. Table 2-1 references the history of base operations at Robins AFB.

2.1.3 Military Mission

The WR-ALC is one of three Air Logistics Centers (ALCs) that provide logistics support to the entire USAF. The ALC at Robins AFB has worldwide management and engineering responsibility for the repair, modification, and overhaul of the F-15 Eagle, C-130 Hercules, C-5 Galaxy, U-2 Dragon Lady, Special Operations aircraft and helicopters, and analytical condition inspection and system support management for the C-17 Globemaster III.

Among its missions, the WR-ALC determines the spare parts, supplies, and equipment needed to support the weapon systems and commodities for which it has management responsibility. The WR-ALC budgets for, purchases, distributes, maintains, and repairs these weapon systems and commodities. The WR-ALC is logistics manager for the F-15 Eagle, C-130 Hercules cargo aircraft, and C-5 Galaxy aircraft; the U-2 Dragon Lady; 11 cargo and utility aircraft; 4 helicopters; 3 remotely piloted vehicles; and missiles. The WR-ALC manages more than 200,000 items to support these systems. Robins AFB is also the exclusive technology repair center for airborne electronics, gyros, and life support systems for the USAF; it houses the largest repair facility in the world. The WR-ALC has various shops (plating, machining, metal bonding, etc.), which support major workload activities.

During operations Desert Shield and Desert Storm in the Middle East, aircraft managed by the WR-ALC were the backbone of the airlift to Saudi Arabia.



Robins AFB is the main U.S. operating base for the E-8 Joint Surveillance Target Attack Radar System (J-STARS) aircraft, which gained national attention during the Persian Gulf War for its ability to detect, locate, and track stationary and slow-moving ground targets. During 1996, as part of this mission, the base became home to more than 2,400 additional personnel. An estimated \$129 million in military construction has been related to the J-STARS program.

In 1996, the 116th Fighter Wing, formerly located at Dobbins Air Reserve Base (ARB) in Georgia, converted from F-15A/B aircraft to the B-1 Bomber, became the 116th Bomb Wing, and relocated to Robins AFB. This transition involved a construction program of \$110 million and more than 1,100 new personnel. The 116th became the operational unit for the E-8C J-STARS in 2002 when the B-1 bombers were relocated from Robins AFB. The 116th Bomb Wing and the 93rd Air Control Wing (ACW) merged to become the 116th ACW on September 30, 2001.



The center has worldwide management and engineering responsibility for the repair, modification, and overhaul of numerous aircraft.

Robins AFB provides support to worldwide customers for over 300 airborne electronics systems. This support involves integrated program management, engineering, and software services, as well as hardware repair for radar, infrared, communications, laser, navigation, and electro-optics systems.

Concurrently, Robins AFB's mission includes support for its more than 40 associate units. Major associate units include:

- Headquarters Air Force Reserve Command;
- 116th Air Control Wing;
- 638th Supply Chain Management Group;
- 689th Combat Communications Wing; and
- Defense Distribution Depot.

2.2 ENVIRONMENTAL RESTORATION PROGRAM

The ERP is modeled after CERCLA, passed by Congress in 1980, and SARA, passed in 1986. Both of these laws establish the legal requirements for identifying, investigating, and cleaning up hazardous waste sites. Most ERP sites at Robins AFB are regulated under RCRA. One National Priorities List (NPL) site (consisting of two ERP sites) is regulated under CERCLA. The United States Environmental Protection Agency (US EPA) guidelines are applied in conducting all investigation and remediation work in the ERP, whether under CERCLA/SARA or RCRA. The 78 CEG/CEVP is responsible for implementing and managing the ERP at Robins AFB.

2.2.1 The ERP Process

Although the fundamental objectives and processes of both the CERCLA and RCRA corrective action programs are essentially the same, there are subtle differences in the processes used to implement the RCRA and CERCLA corrective action requirements. Figure 2-2 defines the primary steps of the ERP process under both of these corrective action programs.

2.2.2 Regulatory Participation in the ERP Process

The Georgia Environmental Protection Division (GA EPD) is the state agency involved with the ERP process at Robins AFB and provides regulatory oversight and review for the RCRA sites. Under RCRA, the GA EPD has been delegated authority to manage hazardous waste in the state. As such, the GA EPD has primary regulatory authority for permitting hazardous waste treatment, storage, and disposal facilities in the state of Georgia and for corrective action at identified SWMUs and Areas of Concern (AOCs) that are located on those facilities. Because the base is a large quantity



generator of hazardous waste and has a permit allowing storage of hazardous waste on the facility, a compliance officer has been assigned. The compliance officer is required to annually inspect the facility, manage, and modify the base's RCRA permit; review all documents/reports; and interpret regulatory requirements as needed. Other staff members from the GA EPD, such as hydrogeologists and risk assessors, assist the compliance officer as needed.

The Air Force is the lead agency for remedial activities involved with the ERP process focused on cleanup of the CERCLA site at Robins AFB, with concurrence by the US EPA and the GA EPD. In accordance with Section 120 of CERCLA, the Air Force has negotiated a Federal Facility Agreement with the US EPA and the GA EPD to establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site in accordance with CERCLA, the National Oil and Hazardous Substances Contingency Plan, and the Georgia Hazardous Waste Management Act. The Robins AFB 78th Civil Engineer Group, Environmental Division (78 CEG/CEV) is responsible for remediating the NPL site at the base, and as such has assigned a Remedial Project Manager for this site. The US EPA and the GA EPD have each also assigned a Remedial Project Manager for this site, who is responsible for regulatory oversight and ensuring that the remediation is in compliance with CERCLA and State requirements.

2.2.3 Community Participation Under the ERP Process

The DoD believes that the earlier the public is involved in the ERP process, the sooner their concerns can be incorporated into the cleanup process. The public involvement effort is generally composed of the following activities:

- community interviews;
- publication of a CRP;
- quarterly EAB meetings;
- establishment of a public information repository where citizens have access to technical documents and other materials related to the ERP;
- release of public information materials; and
- public meetings.

The community relations program is discussed in Section 4.0 of this CRP. The community participation process adheres to guidelines established by the US EPA.

Robins AFB recognizes the importance of involving the public in the environmental restoration process. The EAB was established to serve as a forum so that people in the local communities can be involved with Robins AFB and regulatory agencies working toward providing stewardship for our shared environment. All interested parties are invited to attend each meeting. The EAB is described in Section 4.1. Throughout this document, except in historical references where the organization was the RAB, the term EAB is used.

2.3 ROBINS AIR FORCE BASE ERP

2.3.1 Restoration Background

In Fiscal Year (FY) 1982, Preliminary Assessment/Site Investigations (PA/SIs) were completed for 33 sites at Robins AFB. The most significant is the NPL site, consisting of Landfill No. 4 (LF04) and the Sludge Lagoon and Waste Pit 14 (WP14). The site is divided into three operable units (OUs): LF04 and WP14 contaminant source areas (OU1), wetlands (OU2), and groundwater (OU3). Primary contaminants at the site include trichloroethylene (TCE) and perchloroethylene (PCE) in soil and groundwater.



The EAB was established to create a forum allowing local communities, Robins AFB, and regulatory agencies to work together with the common goal of sustaining our shared environment. All interested parties are invited to attend quarterly meetings.



Remedial Investigation/Feasibility Study (RI/FS) activities were initiated in FY1986 and FY1988. An Interim Record of Decision (IROD) was completed in FY1991 for OU1, in FY1994 for OU2, and in FY1995 for OU3. In FY1993, the installation constructed run-on controls and completed the pilot-scale system for lagoon solidification at OU1. In FY1994, the installation completed Phase I of the Leachate Collection System. In FY1995, a pilot system for the Phase II Leachate Collection System was constructed. In FY1996, the following projects were completed: Full-scale Phase II Leachate Collection System Design, Sludge Lagoon Solidification, OU2 Sediment Containment Design, and Remedial Design (RD) for the Groundwater Treatment Facility for the NPL site. In FY1998, construction was completed on the Groundwater Treatment Facility for OU3 and the Base Industrial Area Site as well as the OU1 Cover. The final Record of Decision (ROD) for OU1 and OU3 was signed in September 2004. A risk assessment for OU2 was completed in December 2000. In 2003, it was determined that contamination found in OU2 was not attributed to releases from the NPL site. Therefore, remediation in the wetlands is no longer being addressed under CERCLA, but was completed in compliance with the RCRA Corrective Action Program. A CERCLA-mandated five-year ROD review, the second involving the NPL site, was completed and the final document was approved in 2006.

Since the ERP was initiated, Robins AFB has identified 79 SWMUs. Continuation of an aggressive restoration program has resulted in receiving decisions of "No Further Action" (NFA) from the GA EPD on 55 SWMUs.

Robins AFB has achieved unique success among Air Force installations in the aggressive implementation and management of the ERP. Robins AFB achieved Remedy-in-Place (RIP) at all ERP sites seven years ahead of Air Force goals. The base is the first Air Logistics Center to reach this milestone and has been recognized as having a restoration program that is "one of the best in the Air Force" by the Deputy Assistant Secretary of the Air Force for Environment, Safety, and Occupational Health.

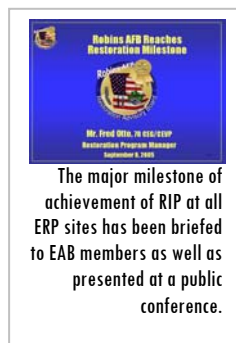
The environmental sites at Robins AFB are listed in Table 2-2 and on Figure 2-3. Figure 2-3 also shows the location of the sites and the current status of restoration at each site.

2.3.2 Installation Commitment to Environmental Quality

Since about 1970, national leaders have realized that environmental protection and resource conservation are critical to sustainable national prosperity. Similarly, the DoD realized that protecting the environment, as well as worker health and safety, was essential to remaining a world power. The role of preserving freedom goes hand-in-hand with protecting the world's environment.

As one of the three ALCs serving the entire AF, Robins AFB and the WR-ALC fulfill a key role in national defense. The Base has structured the 78 CEG/CEV around the AF Environmental Mission Statement for Readiness: sustain operational readiness through environmental excellence. For Robins AFB, this mission statement ensures that proper environmental practices are followed so that aircraft depot maintenance is not interrupted.

The 78 CEG/CEV embodies the installation's commitment to effective stewardship of environmental excellence. The Division's responsibilities encompass the four major pillars of the environmental program at Robins AFB: cleanup of environmental sites (*restoration*) [the focus of this document], compliance with all current environmental laws and regulations (*compliance*), ensuring the preservation and protection of natural, cultural, and historic resources associated with the installation (*conservation*), and proactively ensuring a minimum impact on the environment from future base operations by aggressive optimization of processes and material uses





(pollution prevention). Division personnel are further ensuring, through an active partnering program, that product directorates on base are working with the 78 CEG/CEV to make weapons systems more “green” so they are safer and easier to maintain.

The resources allocated by Robins AFB to support the 78 CEG/CEV and its broad responsibilities continue to assure that the installation's commitment to environmental quality and stewardship is maintained and enhanced.



Section 3 Community Overview

3.1 COMMUNITY PROFILE

This section summarizes the profile of the local area and communities that influence, and are influenced by, Robins AFB. An area location map is shown on Figure 2-1.

3.1.1 Area History

Houston County

Houston (pronounced "Howston") County was named after John Houston, a famous Georgia congressional representative, governor, and judge. Following a treaty with the Creek Indians, the county was first laid out in 1821, with the Ocmulgee River as its eastern boundary, the Flint River on the west, and extending north as far as current-day Macon and south opposite the town of Hartford. The original Houston County encompassed all or parts of the city of Macon and the present-day Bibb, Crawford, Upson, Peach, Macon, and Pulaski Counties. In 1837, Macon County was created, taking from Houston a large part of the western territory. The 1920s saw Houston County's area further reduced when Bibb and Crawford Counties were given a large slice off the northern side of Houston's territory, Peach County was given a northwestern portion, and Pulaski County received sections from the south and southeast.



Gateway to Warner Robins,
home of Robins AFB, in
Houston County.

Perry, the county seat, was settled in 1823 and named in honor of Commodore Oliver Hazard Perry of the 1813 Battle of Lake Erie fame. Centerville appeared on area maps as early as 1888 and was chartered as a city in 1958. Until World War II, Warner Robins was a tiny community of 47 families known as Wellston. On June 14, 1941 it was selected as the site for an Army Air Corps Depot, and on March 5, 1943, the new community of Warner Robins was officially chartered and incorporated.

Peach County

Peach County was formed in 1923 from portions of Macon and Houston Counties. Fort Valley, the county seat, was incorporated in 1856, but had a post office as early as 1825. Originally known as Fox Valley, a clerical error changed the name to Fort Valley. A newspaper article dated September 1925 boasted that "Fort Valley is the point from which more peaches are shipped annually than any other point on earth." Byron, formerly in Houston County, was incorporated in 1874, named after the English poet of the same name. Byron's early history and growth were closely linked to the historic Byron Rail Depot, which was an important railroad center for both passenger travel and peach shipping.

Bibb County

The Macon-Bibb County area has a long and interesting history. Macon is located on Georgia's Fall Line, where the Piedmont region meets the flat Coastal Plains. This is also the site of the Ocmulgee Old Fields, which were home to Creek native tribes and their predecessors for as long as 12,000 years before European settlers arrived. Archaeological excavations at the Ocmulgee National Monument indicate the presence of Native American settlements beginning about 8,000 years Before the Common Era (BCE). Spanish explorer Hernando DeSoto recorded the first Christian baptism on the "new continent" during his explorations in the area in 1540. His priests baptized two Native Americans in the Ocmulgee River near the funeral and temple mounds at Ocmulgee National Monument.



In 1806, after the Creeks ceded their lands east of the Ocmulgee River, Fort Hawkins was built as a trading post and for the protection of settlers moving across the Southeast. Following treaties with the Native Americans in 1821, Bibb County was created in 1822 and Macon, incorporated in 1823, was designated as the county seat. The first college in the world for women, Georgia Female College (now Wesleyan College) was chartered in Macon in 1836. During the Civil War, Macon resisted two attacks by Union troops but was occupied by the Federals in 1865. A Confederate depository was located in Macon, as well as foundries and munitions plants.

3.1.2 Municipal Demographics

Population

The Middle Georgia area continues to exhibit significant growth, as documented in data from the 2000 Census and later state and federal sources. Houston County experienced a 24.2 percent increase in population during the period 1990-2000 and another 20.2 percent increase in growth from 2000 to 2008 (factfinder.census.gov). The 2000 Census shows that Peach County grew by 11.7 percent during the period 1990-2000 and data show that the population increased 13 percent between the years 2000 and 2008. Bibb County had a 2.6 percent increase in growth during the 1990-2000 period and an additional increase of 0.9 percent from 2000 to 2008. Table 3-1 provides more detailed population data during that time period for the three counties.

Approximately 27.6 percent of Houston County's population is African-American, with Hispanic/Latino and Asian representing 4.1 percent and 2.0 percent, respectively. The median age in Houston County is 34.0. Peach County is home to 44.8 percent of African-Americans, 5.4 percent Hispanic/Latinos, and 0.5 percent Asians. The median age in Peach County is 31.8. African-Americans make up 50.5 percent of the population in Bibb County with Hispanic/Latinos at 1.7 percent and Asians 1.5 percent, respectively. The median age in the area is 34.7. The above age and ethnicity statistics are based on the most currently available 2006 data (quickfacts.census.gov and www.city-data.com).

Local Government

Houston, Peach, and Bibb Counties are each governed by a five-member county commission. The city governments of Warner Robins, Perry, and Fort Valley consist of a mayor and six city council members; Warner Robins and Fort Valley have full-time mayors, while Perry has a part-time mayor and a full-time city manager. Centerville is governed by a part-time mayor and four city council members, and Byron has a part-time mayor with five city council members. Macon city government consists of a mayor and city council; three city council members are elected from each of the city's five wards for a total of 15 council members.

Economics

Robins AFB, covering 8,435 acres, is Georgia's largest single employer. Statistics from the Economic Impact Statement for FY2008 indicate that the base had an approximated \$3.3 billion impact on Georgia. Robins AFB employs more than 21,000 personnel, with a net payroll of \$1.6 billion. Annual expenditures by the base in Georgia totaled \$417 million.

The 2008 data from the Georgia LaborMarket Explorer (explorer.dol.state.ga.us) show the five largest employers (excluding all government and public schools, railroads, and the U.S. Postal Service) in Houston County, in alphabetical order, were Frito Lay Inc., Houston County Hospital Authority, Perdue Farms Inc., Southeast



Administrative Services, and Wal-Mart Associates, Inc. with the three employment sectors in 2008 employing the following percentages of the labor force: services (46.8 percent), goods and manufacturing (12.2 percent), and government (41 percent). Peach County's big five employers of 2008 were Advance Stores Co., Inc., Blue Bird Body Company, D/t Carson Enterprises, Inc., Fort Valley State University, and Peach Regional Medical Center. Services (42.5 percent), goods and manufacturing (29.3 percent) and government (28.2 percent) made up the three employment sectors with employment percentages shown for 2008. The three employment sectors in Bibb County and associated employment percentages in 2008 were services (76.0 percent), goods and manufacturing (10.9 percent) and government (13.1 percent) with the largest employers in 2008 being Coliseum Medical Center LLC, GEICO, Mercer University, The Medical Center of Central Georgia, and Wal-Mart Associates, Inc.

Education

With a total projected enrollment of approximately 26,900 students, the Houston County School System consists of 23 elementary (K-5) schools, eight middle (6-8) schools, six high schools (9-12) including the Houston Career/Tech Center (a specialty school), and the Houston County Crossroads Center alternative school (a specialty school for grades 6-12). There are also several private schools in the area. According to the Houston County Board of Education, four Houston County Schools are National Blue Ribbon Schools of Excellence and 22 schools have been named Georgia Schools of Excellence a total of 36 times. During the 2008-2009 school year, 22 schools were Title I Distinguished Schools. Warner Robins is home to the Warner Robins Campus as well as the Robins Resident Center of Macon State College, a Georgia College and State University campus, a commuter campus for Fort Valley State University, and Middle Georgia Technical College, which offers vocational training in business, health, technical, and skilled occupations.

The Peach County public education system, with an enrollment of approximately 4,000, consists of six schools: one elementary, one middle, and one high school in Fort Valley plus one elementary and one middle school in Byron. Also located in Peach County is Fort Valley State University, a four-year college, with an enrollment of nearly 2,500 students, representing 130 of Georgia's 159 counties, more than 30 states, and approximately 10 countries.

The Bibb County public school system consists of 26 elementary schools, seven middle schools, seven high schools, and four special entity schools totaling just under 25,100 students. There are also several private schools in the county. Institutions of higher education include three colleges: Wesleyan College, the first college in America to grant degrees to women, Mercer University, and Macon State College. Also located in Macon are The Georgia Academy for the Blind and Central Georgia Technical College.

Culture and Recreation

Houston County lays claim to a number of cultural and recreational attractions. The Museum of Aviation, adjacent to Robins AFB, has 180,000 ft² of exhibits and more than 93 historical aircraft on a 51-acre site, including the F-15A Eagle that played a key role in Desert Storm. Perry and Warner Robins lie along the Peach Blossom Trail (U.S. Highway 341/41), where peach orchards have traditionally dotted the countryside. Perry is also the location of the Georgia National Fairgrounds and Agricenter, a 1,100+ acre site designed for meetings, trade shows, livestock events, horse shows, fairs, concerts, and sporting events. Perry's other claim to fame is its historic Colonial downtown.



Warner Robins Welcome Center, located in the former train station

Peach County, true to its name, produces 90 percent of all peaches grown in Georgia and offers several attractions related to peach production. Byron and Fort Valley are also along the Peach Blossom Trail, and a week long Georgia Peach Festival is held in the county in mid-June. Byron also characterizes itself as a “shopper’s paradise” with many antique shops and a large outlet mall. Fort Valley is home to the Massee Lane Gardens, headquarters of the American Camellia Society. Peach County has three National Historic Register Districts and three National Historic Register sites.

Cultural and recreational attractions in Bibb County include the Museum of Arts and Sciences and Mark Smith Planetarium; Grand Opera House; Macon Little Theater; the Harriet Tubman Museum, which focuses on black history, culture, and art; the Georgia Music Hall of Fame; the Ocmulgee National Monument, which preserves the funeral and temple mounds of ancient Native American peoples; and the Sports Hall of Fame. Macon has more than 5,500 National Register historic structures in 11 historic districts. The city is also known as the Cherry Blossom Capital of the World for its over 300,000 Yoshino cherry trees; its annual 10-day Cherry Blossom Festival has become one of the top events in the South.

3.1.3 On-Base Community

Robins AFB houses a community that in 2008 included 259 on-base family housing units and 9 dormitories to accommodate airmen, non-commissioned officers, visiting airmen and officers as well as transient lodging facilities to accommodate guests of active duty members and retirees. In October 2007, the base transitioned to a privatized system of housing. Residents are supported by most of the services found in a community of this size. The hospital provides outpatient care. The base has 180 acres of recreational land, as well as a youth center, a library, a theater, and clubs for officers, non-commissioned officers, and airmen.

3.1.4 Community Access to ERP Information

One primary avenue for ensuring community access to ERP information related to environmental sites at Robins AFB is the EAB. The Robins AFB EAB is co-chaired by two individuals, one representing Robins AFB and the other representing the local community. Chairing of quarterly EAB meetings alternates between the installation co-chair and the community co-chair.

The Chief of the 78 CEG/CEV serves as the installation co-chair. This individual promotes effective partnering of the Robins AFB on-base community and Division personnel with the local communities and environmental regulatory agencies. This partnership helps to achieve the most effective sharing of information of interest with the communities. The installation co-chair also ensures access to appropriate base personnel to provide briefings on topics of interest and to answer any questions raised by EAB community members.

The community co-chair serves as the lead representative of the local communities on the EAB. This individual brings any questions, suggestions, or special items of interest voiced by local constituents to the EAB membership and serves as the interface with local communities. The community co-chair ensures the effective partnering of the base with the community residents and organizations to exchange information and ideas. This individual also helps to ensure that complete information is disseminated to interested parties.

A second primary avenue for ensuring community access to ERP information related to environmental sites at Robins AFB is the Information Repository. Robins AFB has been highly proactive in developing and maintaining an electronic record of final documents related to the environmental cleanup program. These documents are



available to the public for review at the Nola Brantley Memorial Library in Warner Robins.

3.2 KEY COMMUNITY COMMENTS AND INTERESTS

Community interviews have been conducted every two years since 1996 throughout the cities of Warner Robins, Centerville, and Perry in Houston County, Byron and Fort Valley in Peach County, and Macon in Bibb County. The most recent interviews were conducted in September and October 2008. All interview sessions were conducted by Charline Logue, as a representative of 78 CEG/CEVP and as EAB Manager, and an independent community relations consultant. Interviewees have included representatives of local municipalities, citizen groups, the business community, and private citizens. Members of the Robins AFB EAB have also been interviewed. The key comments expressed during these interviews are summarized below.

General Perceptions About Robins AFB

Over the years, almost everyone interviewed has spoken enthusiastically about the role Robins AFB plays as the single largest employer in the area and in the state. "Everybody loves the base" was the view expressed by one respondent, and this comment has been typical of local comment during the entire interview span. Accolades from interviewees have focused on the high morals, high integrity, and professionalism of Robins AFB employees, and the "awesome knowledge base" available to the community because of the presence of the base in the community.

During the 2008 interviews, the interviewees were presented with a brief history of the environmental cleanup program at Robins AFB. As part of this discussion, the 2008 Restoration Status Map (Figure 2-3) was compared to the 1997 Restoration Status Map (Figure 2-4) to provide a visual image of the significant progress that the base has made in cleaning up the environmental sites. One interviewee commented that the progress in the last 11 years is "mind-boggling." The same interviewee asked if he could have copies of the maps to share with his City Council. During follow-up conversations with this interviewee, he indicated that the information was presented during a recent council meeting, and the response was overwhelmingly positive. The council members were grateful to Robins AFB for the outstanding job they are doing with their cleanup program. He thanked base management for allowing people from the base to meet with the public and share the progress. He summarized by noting that the local community appreciates the Base's willingness to share information with the community and provide Fact Sheets and other avenues for keeping the public informed. This was a sentiment expressed by several interviewees during the 2008 interviews.

Relationship Between the Base and Local Communities

During all sets of interviews, elected officials and business leaders have spoken highly of the cooperative ways in which local government, commerce, and the base work together. Several interviewees have complimented the senior base leadership for being so open and accessible and for participating so actively in community affairs. "An A+ relationship!" is how one local official has characterized the interactions between Robins AFB and local municipalities. During the 2008 interviews, one interviewee noted that it is a "miracle" and a true testament to effective teaming partnerships that the base has been able to come to an agreement on the cleanup strategies on so many sites with both the GA EPD and the US EPA in such a short time period.

A recurring theme in the interviews relates to progress of the base's environmental cleanup. "The base is seen as environmentally friendly," one interviewee asserted.



He also considered the base's approach to cleanup to be so smooth and well-planned that "the average citizen has no idea the cleanup is going on." In 2008, an elected official noted that "if the community knows that responsible, intelligent, and educated people are taking care of things, then they do not worry about the details." The community knows that the cleanup will progress in an expedited manner. Another elected official noted that he has always felt that the base is a great steward of tax payer dollars.

Knowledge of the Robins AFB Environmental Restoration Program

During the span between the first set of interviews in 1996 and the most recent in 2008, interviewees have revealed essentially constant knowledge and interest relative to the cleanup, but a significant increase in public confidence that Robins AFB is doing a good job has been noted during this time period. In fact, several elected officials have commented that the overall lack of interest and concern is reflective of the public's confidence that Robins AFB is a good steward of the environment.

During the 2008 interviews, the interviewees were informed that the environmental program has won several awards in recognition of the outstanding progress. Most recently, the base received the 2009 Thomas D. White Restoration Award at the Air Force Material Command level for excellence in the cleanup program. Interviewees responded that these awards were "wonderful" and that the base should "take a lot of pride in them." Several 2008 interviewees complimented the base leadership for doing such a tremendous job and taking such a proactive approach. Many interviewees thanked the EAB Manager for taking the time to come out and inform them of the progress that has been made.

Public Knowledge of the Environmental Advisory Board

During early interview sessions, most of the interviewed municipal officials and members of the general public either did not know an EAB existed, or if they did, were unfamiliar with its purpose or activities. However, more recent interviews revealed a much higher level of familiarity with, and interest in, the EAB.

During the 2008 interviews, the interviewees received information about the methods used by the base to distribute information regarding the cleanup program to the community, including the EAB meetings, Fact Sheets, the EAB public website, this Community Relations Plan, etc. Several elected officials in recent interviews were aware of people in their communities who were EAB members, and most of the elected officials said they would like to attend an EAB meeting in the future.

During 2008 interviews, all the elected officials acknowledged receiving the EAB Fact Sheet, and everyone interviewed said they would like to remain on the mailing list. Several also commented that they copy and distribute the Fact Sheet to City Council members and city staff members. Several interviewees have complimented the base on the look and content of the materials. One official commented that he finds the Fact Sheets to be a tremendous help and "very, very useful." Interviewees have expressed ongoing interest in receiving information related to environmental programs at the base.

The 2008 interviewees were also informed that the presentations from each EAB meeting, the Fact Sheets, as well as each year's CRP are posted on the EAB website (www.robinseab.org).

Member Opinions about the Environmental Advisory Board

Long-term EAB members have felt in general that their expectations about belonging



The Robins AFB EAB receives briefings and tours in regularly scheduled meetings throughout the year. Here EAB members and representatives of the Robins Environmental Management Division listen to a technical briefing during a tour.



to the EAB had been met and that their longevity with the EAB was due to the personal benefits they gained from their participation. Several EAB members have positively commented on the impact of the Robins EAB Manager in ensuring that topics of current interest are presented, the tours are efficiently conducted, and all member questions receive complete answers. He attributed his long tenure on the EAB to his interest in what is going on and what approaches are used to address the cleanup problems at the base, as well as the sense of doing something worthwhile. Some of the expectations other EAB members said had been realized included learning more about the "reality" of base operations and environmental issues, playing a role in communicating to others, and bringing items of interest to the base from the community. One member said he had learned more from his EAB participation than he had given, a sentiment shared by several of the other members that have been interviewed.

EAB members interviewed have had consistently high praise for how EAB meetings are conducted and the support provided by the EAB staff. "The EAB staff is very inviting and encouraging, presentations are very good, and the meetings are very cordial," said one member. Another appreciated the willingness of the base to be open to communication and their honesty in "discussing where they are making progress and where they are not." This same individual also stated that the EAB staff had "never not filled a request [for information] I have had." New EAB members have said they were delightfully surprised that when they asked a question or requested additional information, the designated topic would appear on the next meeting's agenda and that any information promised would be delivered. One new member appreciated that there is a form he can complete at the end of each meeting with his questions, comments, and suggestions.



EAB meetings provide a forum for members, Environmental Division staff, visitors, and briefers to discuss items of interest.

Interviews of EAB members have also yielded compliments for good agendas and concise presentations. Stated one member, "The presenters stay on time, everyone knows when to talk, and all questions are answered." This same individual also observed that "the EAB process is completely equitable, no one is dominant, even though there are strong personalities on the board." Another member said he "push[es] away from the table satisfied, with just enough information presented." Also appreciated by a new EAB member was the fact that the individuals who make presentations at the meetings come up afterwards to talk to the members. In that same vein, one interviewee liked the fact that the Air Force consultants are at every meeting and interact with the EAB members. Many EAB members over the years have attributed the smooth running of the EAB to the EAB Manager, who one member described as "very versatile," with "keen flexibility" and good public relations and technical skills.

Throughout the interviews, members have continued to lament the difficulty in getting more public participation and community interest both in the Base's cleanup and in EAB activities. Most members have expressed the common observation that when they share information with friends, neighbors, relatives, or co-workers (as most of them say they do), people are usually mildly interested, but generally do not ask follow-up questions or show any inclination to get involved.

EAB members interviewed did cite several ways in which they share the cleanup information they learn with various audiences, including students and organizations. Several members discussed their efforts in sharing information with the professional, environmental, and civic organizations to which they belong.

Level of Public Environmental Awareness

Interviewees over the years have expressed differing opinions on the level of local



environmental awareness. Some citizens had low knowledge of local environmental problems, while others said environmental awareness was higher than average. Elected officials in Macon and Fort Valley believe that the presence of Superfund sites in their communities has heightened the level of local environmental interest.

The general sentiment in 2008 was that local environmental knowledge is adequate, but that real interest is generated only when a particular issue has potential to affect an individual or one's neighbors. One interviewee stated that the public interest is relatively low because the base is doing such a good job managing their environmental program. There are no major concerns for the public to be worried about.

Several environmental groups involved in Robins AFB and the surrounding communities were mentioned during the 2008 interview series. These included the 21st Century Partnership, the Middle Georgia Clean Cities Coalition (involved with alternative fuels), and the Middle Georgia Clean Air Coalition (concerned with air quality).

Considerations in Communicating ERP Environmental Information

Three major local newspapers have been repeatedly mentioned as key mechanisms for dissemination of environmental information and widespread communications vehicles for the local communities. These are *The Telegraph*, the *Houston Home Journal*, and the *Rev-Up*. The *Telegraph* serves as the primary local printed medium and the *Houston Home Journal* often carries legal notices and the like. The *Rev-Up* serves as the official Robins AFB newspaper.

Related to other forms of communication, interviewees have indicated that local broadcast news media, including broadcast television, cable channels, and radio, are effective outlets for transmitting news. In 2008, in particular, several interviewees noted that brief presentations by Robins AFB officials to local organizations (e.g., the Lions Club, Rotary Club, etc.) may be an effective means for disseminating information regarding the cleanup program to the local community.

During 2008 interviews, all the elected officials acknowledged receiving the EAB Fact Sheet, and everyone interviewed said they would like to remain on the mailing list. Several also commented that they copy and distribute the Fact Sheet to City Council members and city staff members. Several interviewees have complimented the base on the look and content of the materials. One official commented that he finds the Fact Sheets to be a tremendous help and "very, very useful." Interviewees have expressed ongoing interest in receiving information related to environmental programs at the base.

The 2008 interviewees were also informed that the presentations from each EAB meeting, the Fact Sheets, as well as each year's CRP are posted on the EAB website (www.robinseab.org).



Section 4 Community Relations Objectives and Recommended Activities

This section briefly discusses previous community relations activities related to the Robins AFB ERP, summarizes the objectives of this CRP based on the community interviews, and outlines recommended community relations activities.

4.1 COMMUNITY RELATIONS ACTIVITIES

Based on the successes of the base's existing community relations programs and recommendations in previous CRPs, the following community relations activities occur:

- EAB meetings:

The mission of the EAB is to encourage community participation in the full range of environmental matters at Robins AFB, including the Air Force's ERP cleanup process, and to allow community members and other stakeholders to have meaningful dialog with Robins AFB officials. The EAB specifically serves to support Robins AFB and disseminate information to the public. The EAB is made up of representatives of regulatory agencies, local community members, and Robins AFB members.

EAB meetings are held quarterly. Prior to each EAB meeting, a public notice is run in local print media to announce and publicize the event. The meetings are attended by members, Robins AFB personnel, regulatory agency representatives, and members of the local community, as well as contractors, briefers, and others with an interest in the environment. Frequently, distinguished guests attend; these may include command personnel from the base and local elected officials. EAB meetings are open to the public.

EAB meetings are chaired by the Installation Co-chair and the Community Co-chair. Meetings normally open with a welcoming statement and announcements. Various briefings are presented by base personnel and others, supported with graphics and storyboards as appropriate. The topics presented are timely and of great interest to the membership and the general public. Generally, one meeting each year is conducted as a tour of environmental sites and facilities of interest at the base. Minutes documenting the activities of each meeting are prepared and submitted to the EAB members.



EAB meetings are chaired by the community-co-chair and the installation co-chair.





- Fact Sheets:

A four page, color Fact Sheet is prepared after each EAB meeting to present technical and related information briefed at the EAB meeting in an easily understandable written format. The Fact Sheets from the February, May, and August 2009 EAB meetings are provided in Appendix C.

- EAB Web Site:

An EAB web site has been developed to enable communication of information related to the ERP and EAB through electronic means. The EAB web site can be accessed at:

www.robinseab.org

- Public Comment Periods:

All required public comment periods are scheduled and publicized.

4.2 OBJECTIVES OF THE COMMUNITY RELATIONS PLAN

Community participation is an important aspect of a site or installation cleanup. The Robins AFB ERP community relations program seeks to continue to facilitate communication that has existed between Robins AFB and local citizens for many years. The overall objective of the CRP is to increase direct communication with individual citizens who are interested in the Robins AFB ERP.

Specific objectives of the community relations program are as follows:

Objective #1:

Encourage community participation and facilitate two-way communication between surrounding communities and Robins AFB ERP officials. All written materials emphasize the various avenues through which community members can easily receive information, have questions answered, or convey comments. Technical information is provided to community members to increase the public's understanding of the ERP cleanup process. Information documents are archived and made available to the public through the Nola Brantley Memorial Library [also known as Houston County Libraries-Warner Robins Houston County Library; see Appendix B for location and contact information.

Objective #2:

Educate community members about the ERP. Through quarterly EAB meetings the public is educated on the ERP process. Fact Sheets are published and distributed throughout the community following each meeting, and the EAB web site is updated regularly.



Communication with local communities is enhanced through a series of environmental documents made available to the public at the Nola Brantley Memorial Library in Warner Robins.



Objective #3:

Provide clear and accurate information about the location and boundaries of each ERP site. Several ERP sites are close to areas that can be readily observed by military and/or civilian workers (see Figure 2-3). Because of this fact, all written and graphic materials define each site location and its specific boundaries.

Objective #4:

Provide the community with clear, accurate, and timely information about activities associated with the cleanup. If necessary, Robins AFB attempts to inform local citizens, officials, military housing representatives, and military/civilian workers of the schedule for conducting field investigations, removal actions, and other activities that involve the mobilization of workers and equipment. The advance notice ensures that people are not surprised by the presence of field personnel. It also helps the base anticipate increases in public interest that may occur when on-site activities begin.

Objective #5:

Provide citizens with explanations of sampling and test results. Results of sample analyses associated with the cleanup of environmental sites are made available to the EAB members and are recorded in reports made available to the public at the Nola Brantley Memorial Library.

Objective #6:

Provide information on potential impacts on human health or the environment. Robins AFB informs community members of public health issues. Bioenvironmental Engineering Services (78 MDS/SGPB at Robins AFB) communicates information on health risks to the community.

Objective #7:

Maintain a central Robins AFB Public Affairs contact to facilitate communication. Providing a central contact person who represents Robins AFB allows concerned citizens and officials to have access to a government official for site inquiries and concerns. It also allows the government official to address promptly any community concerns when they arise. Direct communication enhances opportunities for community participation in the ERP process.

Objective #8:

Maintain communication with local officials. Members of local government are valuable contacts for citizens in surrounding communities. Citizens are more familiar with local officials and may tend to contact them before they contact Robins AFB representatives. Cooperation and ongoing personal contact between local officials and Robins AFB is necessary to ensure a harmonious working relationship and a reliable and constructive flow of information.

Objective #9:

Maintain communication with on-base housing management. The Robins AFB housing management office is a valuable contact for military families living on base. Family members may naturally tend to ask questions or pose concerns to these housing managers before they contact Robins AFB representatives. Cooperation between the housing managers and Robins AFB environmental and PA staffs may be necessary in certain situations to ensure a harmonious working relationship and a reliable and constructive flow of information.



Objective #10:

Develop communication avenues with interested citizens not currently receiving ERP information. Quarterly Fact Sheets sent to local elected officials provide the name and telephone number of the EAB Manager, the names of the EAB members, and the address of the EAB web site.

Objective #11:

Maintain consistency with Robins AFB PA Publication Guidelines. Publications developed related to specific activities contained in this CRP will be consistent with Robins AFB PA publication guidance.

The following section presents the specific activities recommended to meet these objectives.

4.3 RECOMMENDED COMMUNITY RELATIONS ACTIVITIES

This section describes the recommended community relations activities related to the Robins AFB ERP. These activities are divided into three categories: (1) General ERP Activities; (2) CERCLA Site Activities; and (3) RCRA Site Activities. The General ERP Activities are applicable to the entire program, regardless of whether a specific site is governed by CERCLA or RCRA. However, a distinction is made for certain activities, since CERCLA and RCRA each have different public communication requirements. The timing of the different CERCLA and RCRA activities will be tied to the appropriate technical milestones applicable to the two laws.

The activities outlined are designed to address the communities' interests summarized in Section 3.0 and to meet the community relations objectives discussed in Section 4.2. Following each activity are the specific objectives that each activity meets.

4.3.1 General ERP Activities

1. Designate a central contact person(s) at Robins AFB.

Mr. Kendahl Johnson of the Robins AFB PA Office serves as the central contact person for the public. Mr. Johnson is responsible for coordinating with the 78 CEG/CEV, which generates for his release accurate, consistent, and timely responses to questions from citizens, civic leaders, and local officials throughout the ERP process and for conveying community concerns to the EAB. If new restoration information or an unexpected environmental incident with the potential to affect the local community were to occur on the base, the 78 CEG/CEV would notify the Command Section and PA. PA would ensure timely public notification using methods deemed appropriate to the situation to inform those on the base and in the community who may be impacted. Mr. Johnson's address, email address, and telephone number can be found in Section 1 and in Appendix A. (Meets Community Relations Objectives #1 and #7.)

2. Update the ERP information repository.

The information repository contains both CERCLA and RCRA program documentation. The electronic information repository, which includes more than 2,400 Robins AFB



Representatives from the Public Affairs and Judge Advocate offices attend EAB meetings and are available to answer questions from the public.



documents, can be found at the Nola Brantley Memorial Library (also known as Houston County Libraries-Warner Robins Houston County Library). The repository enables community members to have access to information regarding ERP activities and to stay informed of findings at the individual sites. The Nola Brantley Memorial Library was chosen because of its centralized location, hours of availability, and accessibility. The information repository contains documents that were used to form the basis of the remedy selections made at the NPL site and is the official legal record of environmental investigative and remedial activities at the site. Appendix B provides the address, telephone number, and contact person for the library. (Meets Community Relations Objectives #2, #3, #4, #5, and #6.)

3. Maintain list of individuals and organizations interested in receiving information about the ERP at Robins AFB.

Robins AFB maintains a list (see Appendix A) of mayors and others interested in ERP activities. Anyone who wishes to be added to the list should contact Mr. Kendahl Johnson at the Robins AFB PA Office (see Appendix A). (Meets Community Relations Objectives #1, #4, #8, #9, and #10.)

4. Channel information on ERP activities through the EAB and increase the visibility of the EAB.

Robins AFB has a very active EAB, including members from surrounding communities. Annually, three of the quarterly EAB meetings are held off base to ensure participation by elected officials and community members. The date, time, and location of each EAB meeting is published in *The Telegraph*, the *Houston Home Journal*, and the *Robins Rev-Up* newspapers prior to the meeting. After each meeting, a Fact Sheet is developed and distributed that contains an overview of the issues presented and discussed during the quarterly meeting. The public is welcome to contact the EAB Manager for questions and comments concerning the EAB. The telephone number for the EAB Manager is identified on the Fact Sheets. In addition, an EAB web site has been developed to channel information on ERP activities to the communities through electronic means. The web address for the EAB web site is provided on all quarterly Fact Sheets. (Meets Community Relations Objectives #1, #2, and #10.)

5. Provide information about site boundaries and their relationship to family housing and on-base schools.

The locations for the environmental sites at Robins AFB are identified on Figure 2-3. Additionally, site boundaries are provided, as applicable, in all documents available in information repository. EAB meetings are held on a quarterly basis and provide detailed information on the environmental sites on Robins AFB. These meetings are open to the public. Public notices are published in the local newspapers and the base paper to allow those living in base family housing and attending on-base schools an opportunity to attend the quarterly EAB meetings. (Meets Community Relations Objectives #3, #4, and #9.)



6. Send news releases and/or public notices to local media outlets.

Local media are made aware of environmental issues ongoing at Robins AFB. To ensure that the local communities receive timely notification of upcoming EAB meetings, public notices are published in the local media in advance of the meetings. (Meets Community Relations Objectives #1, #2, #4, #5, and #11.)

7. Develop articles for The Rev-Up base newspaper.

The Robins AFB PA Office reviews and approves Division-drafted ERP articles for publication in the base's newspaper, the *Rev-Up*. The articles inform military personnel, their families, and civilian workers about the technical progress of the ERP, upcoming fieldwork, public meetings, and public comment periods. (Meets Community Relations Objectives #1, #2, #4, #5, #9, and #11.)

8. Develop and distribute updated Fact Sheets or newsletters that contain information on ERP sites.

Robins AFB publishes and distributes quarterly Fact Sheets to report on progress being made at the various ERP sites. (Meets Community Relations Objectives #2, #4, #5, #6, #8, #9, and #10.)

9. Place ERP materials and announcements on the Environmental Advisory Board web site.

The web site is accessible to the public at www.robinseab.org. (Meets Community Relations Objectives #1, #2, #3, #4, #6, and #10.)

10. Summarize findings and announce availability of ERP Public Health Assessment.

In April 1998, the Agency for Toxic Substances and Disease Registry (ATSDR) conducted a Public Health Assessment, which reviewed the ERP at Robins AFB from the health perspective of the surrounding community. The Final Public Health Assessment Report was briefed to EAB members and is available for public review at the Nola Brantley Memorial Library (also known as Houston County Libraries-Warner Robins Houston County Library). (Meets Community Objectives #2 and #6.)

11. Revise this CRP.

The Robins AFB CRP is updated annually. (Meets Community Relations Objectives #1 and #11.)



The Robins AFB EAB web site provides information briefed at recent EAB meetings and related information in an attractive format and in language understandable by the general non-technical public. www.robinseab.org



4.3.2 CERCLA Site Activities

There are specific public activities that are either required by law or encouraged by the US EPA protocol for CERCLA sites. These apply to the LF04 CERCLA NPL site and related OUs. OU1 is the landfill and sludge lagoon source areas. OU2 is the wetlands and surface water downgradient of OU1, and OU3 is the groundwater.

A ROD has already been prepared for OU1 and OU3. A second five-year ROD review, including a public comment period, was completed and the final report issued in 2006. Since the contamination at OU2 was not attributed to the NPL site, OU2 was addressed under the RCRA program, and NFA status for the site was granted in September 2006.

The following activity will occur after the remedial action (RA) is complete for OU1 and OU3.

- 1. Provide public comment opportunities for a proposed deletion of the CERCLA site from the NPL.**

Once the RA has been completed and the US EPA has placed a Notice of Intent to Delete in the Federal Register, the agency will announce a 30-day public comment period. The US EPA will respond to any significant comments submitted during the comment period before the agency carries out its final deletion. Once the deletion is finalized, a notice to that effect will be placed in the information repository. (Meets Community Relations Objectives #1, #2, #4, #6, #8, #9, and #10.)

4.3.3 RCRA Site Activities

RCRA communication requirements were formerly not as stringent or as extensive as those under CERCLA. However, in December 1995, the US EPA issued a final rule expanding its public participation requirements. These requirements are listed under Parts 124 and 270 in Title 40 of the Code of Federal Regulations and apply to facilities undergoing Part B permitting or permit modifications under Subtitle C. Facilities such as Robins AFB that treat, store, or dispose of hazardous waste must apply for and receive a permit allowing them to manage this waste. Such permits spell out the conditions and requirements the facility must meet for a specific period of time. The permit may be modified to include new conditions or requirements, or to change existing conditions or requirements.

Following are key activities for the Robins AFB RCRA sites.

- 1. Provide opportunities for the public to comment on Corrective Action Plans (CAPs) and/or RCRA permit modifications and develop a Public Participation Package for public review.**

Upon regulatory approval of a CAP or a No Further Action status resulting in a permit modification, the GA EPD will prepare and submit a Public Participation Package to the information repository for public review. The Public Participation Package contains a Statement of Basis concerning each proposed action. As part of the process, the GA EPD announces a 45-day public comment period. The public participation information is also provided to all persons on the GA EPD mailing list prior to the public comment period. During this time, interested community members may submit oral or written comments to the GA EPD. The public notice is



published in the *Macon Telegraph* and announced on a local radio station. (Meets Community Relations Objectives #1, #2, #4, #6, #8, #9, and #10.)

2. Hold public meetings.

A public meeting can be held during the CAP/permit modification public comment period, if the GA EPD feels there is sufficient community interest or cause for such a meeting. Appendix B lists the suggested locations for public meetings. (Meets Community Relations Objectives #1, #2, #4, #8, #9, and #10.)

3. Announce the closure of a RCRA ERP site.

A RCRA ERP site is officially closed when an NFA decision is made by the GA EPD. Procedures for announcement of site closure action are contained in Activity 1 above. (Meets Community Relations Objectives #2, #4, #8, #9, and #10.)

TABLES

**Table 2-1
History of Base Operations at Robins Air Force Base**

Period	Types of Operations	Hazardous Substance Activities
Pre-1941	Farmland, Swamp/Lowland	None
1941-1943	Base Construction	Construction
1943-1945	Flight Training Center Logistics - B-17, B-26, and B-29 Bombers - C-46, C-47, C-54, and C-60 Cargo Aircraft - A-20 and A-26 Attack Aircraft - Piston Engine Spark Plugs	Landfills, Airplane/Automotive Fuel Storage, Hangars, Machine Shops, Wastewater Treatment Facility, Fire Protection Training Areas
1945-1956	Logistics - B-29 Bombers - C-119, C-130, and Other Cargo Aircraft - Piston Engine Spark Plugs	Landfills, Fuel and Oil Storage, Low Level Radioactive Disposal, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Paint, and Depaint
1956-1961	Logistics - C-124, C-130, and C-133 Cargo Aircraft - Piston Engine Spark Plugs	Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Paint, and Depaint
1961-1968	Operations - B-52 Bombers Logistics - C-7, C-123, C-130, and C-141 Cargo Aircraft	Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Paint, and Depaint
1968-1983	Operations - B-52 Bombers Logistics - AC-130 Special Operations Aircraft - C-130 and C-141 Cargo Aircraft - F-15 Fighters - Avionics, Electronics, Communications, Radar, and Electronic Countermeasures	Weapons Storage Area, Landfills, Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Paint, and Depaint
1983-1995	Operations - B-52 Bombers - KC-135 Refuel Aircraft Logistics - AC-130 Special Operations Aircraft - C-130 and C-141 Cargo Aircraft - F-15 Fighters - Avionics, Electronics, Communications, Radar, and Electronic Countermeasures	Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Maintenance Facilities, Paint, and Depaint

1995- Present	Operations <ul style="list-style-type: none"> - KC-135 Refuel Aircraft - Joint STARS Logistics <ul style="list-style-type: none"> - AC-130 Special Ops Aircraft - C-5, C-17, C-130, C-141 (Taken Out of Service in 2006) Cargo Aircraft - F-15 Fighters - Avionics, Electronics, Communications, Radar, and Electronic Countermeasures - U-2 Reconnaissance Aircraft - Helicopters 	Fuel and Oil Storage, Wastewater Treatment Facility, Fire Protection Training Areas, Hangars, Machine Shop, Maintenance Facilities, Paint, and Depaint
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Table 2-2
Robins Air Force Base Hazardous Waste Permit HW-064(S)
Solid Waste Management Units and Areas of Concern

SWMU/ AOC NUMBER	IRP NUMBER	SWMU/AOC NAME	CORRECTIVE ACTION REQUIREMENT
1	LF01	Landfill No. 1	CAP
2	LF02	Landfill No. 2	CAP
3	LF03	Landfill No. 3	CAP
4	LF04	Landfill No. 4	National Priorities List Site; Federal Facility Agreement dated June 14, 1989 incorporated into Permit by reference.
5	FT05	Fire Protection Training Area No. 1	NFA
6	FT06	Fire Protection Training Area No. 2	CAP
7	FT07	Fire Protection Training Area No. 3	NFA
8	FT08	Fire Protection Training Area No. 4	NFA
9	SS09	DDT Spill Site and Railroad Ditch at Entomology Shop, Buildings 295 & 296	NFA
10A	SS10	JP4 Spill Site A	NFA
10B	N/A	JP4 Spill Site B	CAP
11	SS11	PCB Spill Site	NFA
12	WP12	Hazardous Waste Disposal Site	NFA
13	WP13	Laboratory Chemical Disposal Area	CAP
14	WP14	Sludge Lagoon	National Priorities List Site; Federal Facility Agreement dated June 14, 1989 incorporated into Permit by reference.
15	RW15	Low Level Radioactive Burial Site	NFA
16	OT16	Well No. 8 TCE Contamination	NFA

**Table 2-2
Robins Air Force Base Hazardous Waste Permit HW-064(S)
Solid Waste Management Units and Areas of Concern (continued)**

17	OT17	Building 645 TCE Contamination	CAP
18	LF18	Construction Debris Landfill, East of B/1400 (Landfill E of PAVE PAWS)	NFA
19	LF19	Construction Debris Landfill at North End of Base	NFA
20	OT20	Greater Base Industrial Area TCE Groundwater Contamination	CAP
21	OT21	Corrosion Control Facility at Building 80	NFA
22	OT22	Satellite Storage Area Southeast of Building 361	NFA
23	OT23	Sanitary Sludge Placement Area southeast of Building 361	CAP
24	N/A	Former Waste Solvent Underground Storage Tank at Building 645	CAP
25	OT25	Pasture Disposal Site	NFA
26	OT26	Off-Base Drum Disposal Site	NFA
27	OT27	Gas Line Road Dump Site	NFA
28	SS28	Purge Fluid Leak at Building 45	CAP
29	OT29	Duck Lake and unnamed Stream south & east of Entomology Shop, Buildings 295 & 296	NFA
30	N/A	Building 1601 - DRMO Hazardous Waste Container Storage Building	Clean Closed HWMU; NFA
31	N/A	Building 352 - Hazardous Waste Container Storage Building	Operating HWMU; NFA
32	N/A	Building 369 - Dioxin Container Storage Building	NFA
33	AOC1	SAC Drum Site	NFA
34	AOC3	Fire Fighting Foam Lagoon	NFA
35	N/A	Methyl Ethyl Ketone Unit at Building 680	NFA
36	DC34	Horse Pasture Trench Disposal Sites	CAP

Table 2-2
Robins Air Force Base Hazardous Waste Permit HW-064(S)
Solid Waste Management Units and Areas of Concern (continued)

37	N/A	Solvent Reclamation Area (Building 181)	CAP
38	N/A	Industrial Wastewater Treatment Plant Nos. 1 & 2 at Building 141	CAP
39	N/A	Metal Finishing Shop at Building 142	CAP
40	N/A	Machine Shop at Building 140	CAP
41	N/A	Civil Engineer Pole Yard and Transformer Storage Yard	NFA
42	N/A	Former Transformer Storage Site at Building 1178	NFA
43	SS35	Plastic Shop Baghouses at Building 670 (Former Dry Cleaning Facility)	NFA
44	N/A	Phenolic Treatment Facility at Building 363	NFA
45	N/A	Chemical Site No. 25 and Truck Wash Area	NFA
46	N/A	Vehicle Steam Cleaning Area at Building 319	NFA
47	N/A	Aboveground Diesel Fuel Storage Tank #177-2 (250,000 Gallon) and Fuel Line to Steam Plant	CAP
48	DC34	Miscellaneous Disposal Sites	NFA
49	DC34	Horse Pasture West of Site RW15	NFA
50	N/A	Fire Protection Training Area No. 5	NFA
51	N/A	Oil/Water Separator at Building 680	NFA
52	N/A	Chemical Storage Shed at Building 680	NFA
53	AOC8	Storm Sewer System from Base Industrial Area to Outfall 009	NFA
54	AOC9	Industrial Wastewater Treatment Plant Process Line between Building 142 and 141	NFA
55	AOC10	Soil Contamination at Monitoring Well RB20MW6	NFA

Table 2-2
Robins Air Force Base Hazardous Waste Permit HW-064(S)
Solid Waste Management Units and Areas of Concern (continued)

56	AOC11	Jet Engine Maintenance Buildings 145, 256, and 257	NFA
57	AOC12	Twin 72-Inch Underground Storm Drain Culvert System Through South Flightline	CAP
58	AOC13	Culvert/Storm Drain from Base Industrial Area to Drainage Ditch at FPTA No. 3 (SWMU 7)	NFA
59	N/A	JP-8 Product Line along Main Controlled Taxiway	CAP
60	N/A	JP-8 Product Line near intersection of Taxiway No. 2 and Taxiway No. 3	CAP
61	N/A	JP-8 Product Line near South End of Main Runway	CAP
62	OT37	Third Street Storm Sewer and Outfall	CAP
63	OT38	Test Firing Range for M61-20mm Guns (Buildings 2041, 2042, and 2043)	NFA
64	N/A	Two (2) Former Heating Oil Tanks at Building 993	NFA
65	N/A	Former Heating Oil Underground Storage Tank at Building 994	NFA
66	N/A	Tarpit at ANG B-1 Site	NFA
67	N/A	Former Building 113 Aboveground Storage Tank	NFA
68	N/A	Former Building 245 Underground Storage Tank	NFA
69	N/A	Building 110 – Aircraft Hangar	NFA
70	N/A	Building 640 Industrial Wastewater Treatment Plant Process Line	NFA
71	N/A	Building 359 - Hazardous Waste Container Storage Building	Operating HWMU; NFA
72	N/A	Building 644 Heating Oil Underground Storage Tank	NFA

Table 2-2
Robins Air Force Base Hazardous Waste Permit HW-064(S)
Solid Waste Management Units and Areas of Concern (continued)

73	N/A	Building 325 - Old DRMO Hazardous Waste Container Storage Building	NFA
74	N/A	Building 360 Heating Oil Underground Storage Tank	NFA
75	N/A	Building 352 Heating Oil Underground Storage Tank	NFA
76	N/A	Building 2076 Heating Oil Underground Storage Tank	NFA
77	N/A	Four pairs of vaults and associated piping at Building 125 (C-5 Hangar)	NFA
78	N/A	Lead Slag Area in Horse Pasture	NFA
AOC1	SS36	Area of Concern near Taxiway No. 4	NFA
AOC2	N/A	Surface Water and Sediment Exposure Group Nos. 3, 5, 6, 8, 9, 10 & 13 (i.e., the wetlands downgradient of the National Priorities List Site and the Greater Base Industrial Area)	NFA

KEY

AOC - Area of Concern

CAP - Corrective Action Plan

HWMU - Hazardous Waste Management Unit

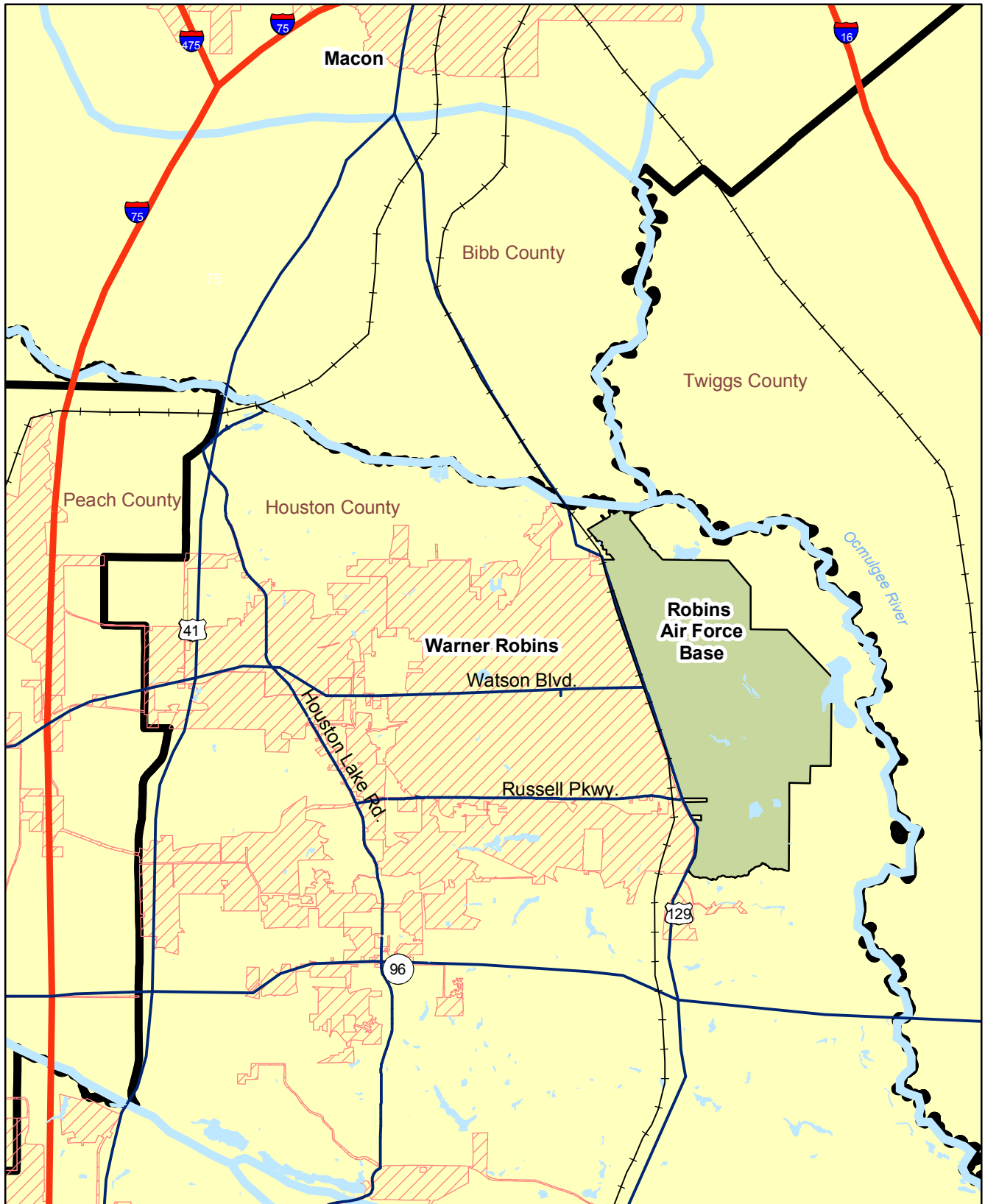
IRP - Installation Restoration Program

N/A - Not Applicable

NFA - No Further Action required at this time

SWMU - Solid Waste Management Unit

FIGURES



- Major Roads
- Interstate
- Railroad
- Urban Area
- Installation Boundary
- Hydrography
- County Boundary

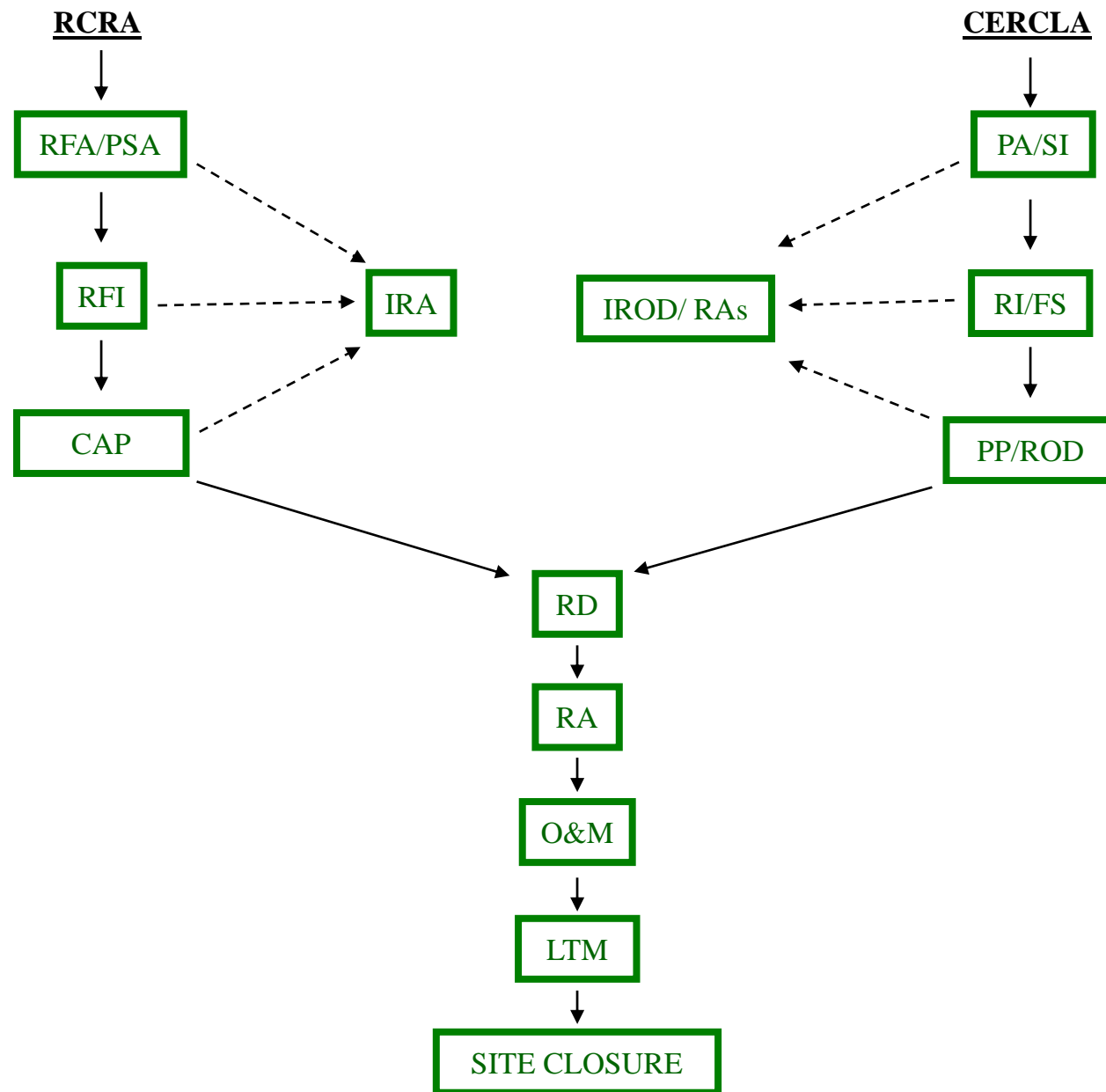
Figure 2-1
Robins Air Force Base
Site Vicinity Map



November 2009

1 0.5 0 1 2 Miles

Figure 2-2 Environmental Restoration Program (ERP) Process



RFA/PSA - RCRA Facility Assessment/Potential Source Assessment
RFI - RCRA Facility Investigation
CAP - Corrective Action Plan
IRA - Interim Remedial Action
PA/SI - Preliminary Assessment/Site Inspection
RI/FS - Remedial Investigation/Feasibility Study
PP/ROD - Proposed Plan/Record of Decision
IROD/RAs - Interim Record of Decision/Removal Actions
RD - Remedial Design
RA - Remedial Action
O&M - Operations and Maintenance
LTM - Long-term Monitoring

RCRA

RCRA Facility Assessment/Potential Source Assessment: A study conducted to identify individual sites, SWMUs, that could pose a hazard to public health or the environment. If no hazard exists, the SWMU is categorized as “No Further Response Action Planned” (NFRAP).

RCRA Facility Investigation: An investigative phase to fully delineate the contamination at the site. The information that is gathered in this step is used to develop a cleanup strategy.

Corrective Action Plan: The Corrective Action Module of the Robins AFB Permit is the process for evaluating the cleanup alternatives that will provide adequate remediation to meet the regulatory requirements. The Corrective Action Module requires that CAPs integrate the Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI) steps of the traditional RCRA corrective action process together. Once the CMS is complete, the CAP outlines the available data, the results of the CMS, and presents the proposed CMI. The CAP is submitted for formal regulatory review.

Interim Remedial Actions: Cleanup measures that are directed to address an imminent threat to public health or control contaminant releases to the environment. These may be initiated at anytime during the process and do not necessarily bring the site to close out.

CERCLA

Preliminary Assessment/Site Inspection: A study to identify sites that may pose hazards to public health or the environment. Sites are scored using a Hazard Ranking System (HRS) based on the amount/toxicity of the contamination and the potential for migration/human exposure. If a site receives a sufficiently high score, it is proposed for inclusion on the National Priorities List (NPL).

Remedial Investigation/Feasibility Study: An investigative phase to fully delineate the contamination at the site (RI) and an evaluation of potential cleanup strategies (FS).

Proposed Plan/Record of Decision: The PP describes the proposed cleanup method in a formal document that is released for public comment. After public comments are reviewed and an agreement is reached with appropriate regulatory authorities, the ROD is a record of the legal decision for site cleanup.

Interim ROD/Removal Actions: Cleanup measures that are directed to address an imminent threat to public health or control contaminant releases to the environment. These may be initiated at anytime during the process and do not necessarily bring the site to close out. If an IROD is used, the process includes a formal regulatory review.

Remedial Design: A detailed engineering design for the cleanup technology outlined in the CAP or ROD.

Remedial Action: The implementation phase of the corrective action including construction and installation.

Operations and Maintenance: Operation and maintenance of the approved corrective action to reduce the contaminant levels to meet required regulatory levels.

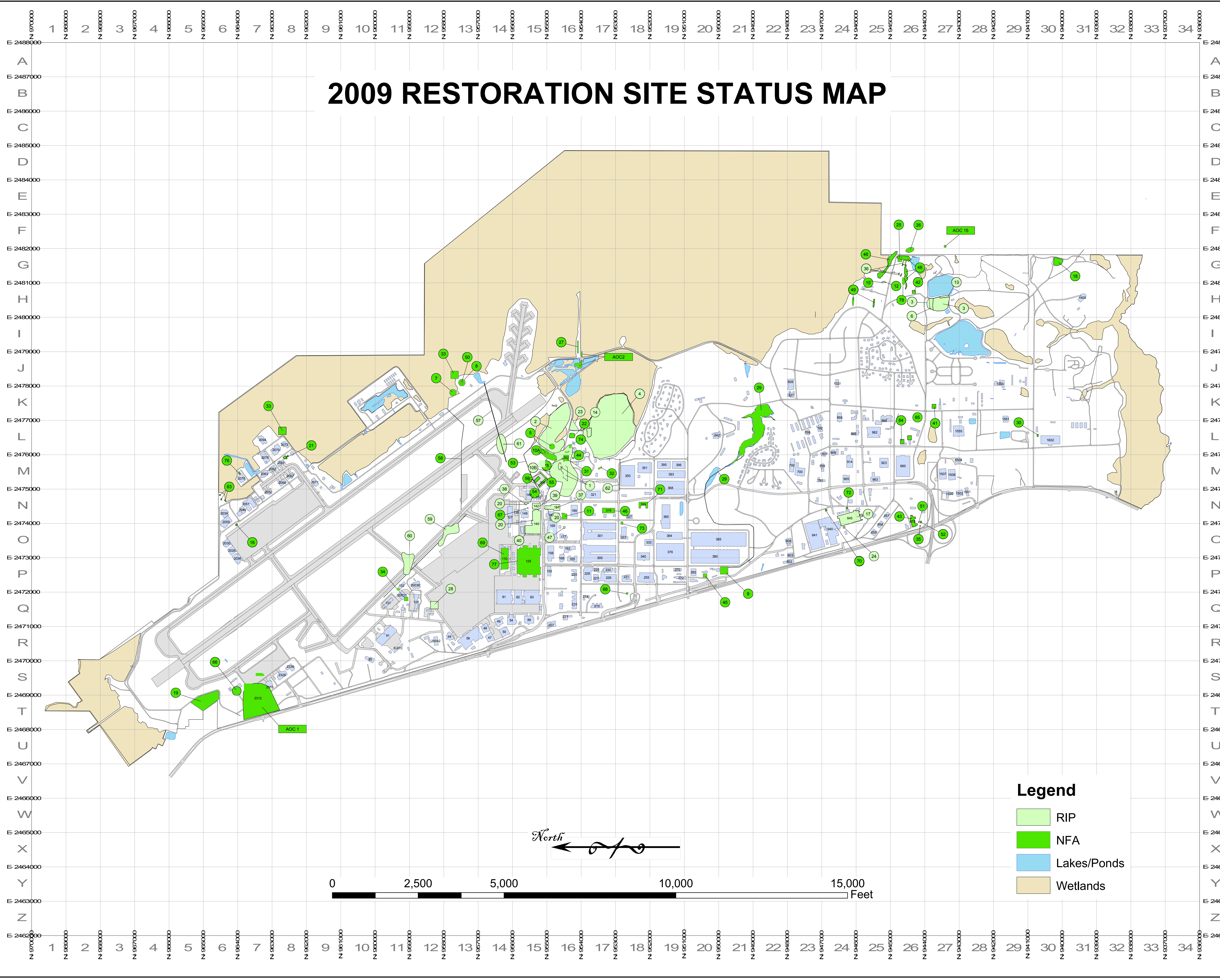
Long-term Monitoring: Testing conducted to assure that the corrective action is removing contaminants and to evaluate when contaminant levels have stabilized below the required regulatory levels. Even after the corrective action is complete, LTM may continue to ensure that contaminant levels remain below the regulatory limits.

Site Closure: Site is considered closed when no further response is required to protect human health and the environment.

2009 RESTORATION SITE STATUS MAP

Robins Air Force Base Environmental Sites (Solid Waste Management Units, Areas of Concern, and Other Sites)

SWMU/AOC #	ERP No.	SWMU/AOC Description	Corrective Action Status	Location Grid
1	L101	Landfill No. 1	RIP	M-16
2	L102	Landfill No. 2	RIP	K-16, L-15,16
3	L103	Landfill No. 3	RIP	H-27
4	L104	Landfill No. 4 (CERCLA/NPL Site)	RIP	K-17, L-18, M-17
5	L105	Fire Protection Training Area No. 1	NFA	L-15, M-15
6	F106	Fire Protection Training Area No. 2	RIP	H-27
7	F107	Fire Protection Training Area No. 3	NFA	K-13
8	F108	Fire Protection Training Area No. 4	NFA	J-13
9	S800	DDT Spill Site at Engraving Shop Bldg. 200 & 206	NFA	P-21
10A	S800	JPS Spill Site A	NFA	L, M, 13,16
10B	S800	JPS Spill Site B	RIP	L, M, 13,16
11	S811	PCH Spill Site	RIP	N-16
12	W102	Hazardous Waste Disposal Site	NFA	G-25
13	W113	Laboratory Chemical Disposal Area	RIP	H-27
14	W114	Sludge Lagoon (CERCLA/NPL Site)	RIP	L-17
15	W115	Low Level Radioactive Hazard Site	NFA	G-25
16	OT16	Well No. 8 TCE Contamination	NFA	O-6
17	OT17	Building 645 TCE Contamination	RIP	N-24,25 O-34
18	L118	Construction Debris Landfill, East of Bldg. 1800 (PAVE PAWS)	NFA	G-30
19	L119	Construction Debris Landfill at South End of Base	NFA	S-6, T-5,6
20	OT20	Greater Base Industrial Area TCE Groundwater Contamination	RIP	N-15,16 O-15
21	OT21	Construction Debris Facility at Building 301	NFA	M-4
22	OT22	Sandfill Storage Area Southeast of Building 301	NFA	L-16
23	OT23	Sanitary Sludge Placement Area Southeast of Building 301	RIP	L-16
24	OT17	Former Waste Solvent Underground Storage Tank at Bldg. 645	RIP	O-24
25	OT22	Pit and Disposal Site	NFA	G-26
26	OT26	Oil-Base Drum Disposal Site	NFA	F-10-26
27	OT27	Gas Line Road Dump Site	NFA	L-16
28	S828	Purge Fluid Leak at Building 65	RIP	Q-12
29	OT29	Diesel Lube and Grease Spill at Bldg. 200 & 206	NFA	K, L, M - 20, K-22
30	NFA	Bldg. 300 - 12000 Hazardous Waste Container Storage Building	HWM/NFA	L-30
31	NFA	Bldg. 302 - Hazardous Waste Container Storage Building	HWM/NFA	M-16
32	NFA	Bldg. 309 - Chemical Container Storage Building	NFA	M-17
33	AOC1	SAC Drum Site	NFA	L-6, J-13
34	AOC3	Fire Fighting Foam Lagoon	NFA	Q-11
35	NFA	Methyl Ethyl Ketone Unit at Bldg. 600	NFA	O-26
36	DCM	Horse Pasture Trench Disposal Sites	RIP	G-26
37	OT20	Solvent Reclamation Area (Bldg. 183)	RIP	N-15,16
38	OT20	Industrial WWP Pond at Bldg. 141	RIP	N-15
39	OT20	Meat Freezing Shop at Building 140	RIP	N-15
40	OT20	Mechanic Shop at Building 140	RIP	N-15
41	NFA	Civil Engineer Park Yard and Transformer Storage Yard	NFA	K-27
42	NFA	Former Transformer Storage Site at Bldg. 1778	NFA	H-26
43	S833	Plastic Shop Highways at Building 650 (Former Dry Cleaning Fac. - 80y)	NFA	N-20-26
44	NFA	Phenolic Treatment Facility at Building 363	NFA	M-16
45	NFA	Chemical Site No. 25 and Truck Wash Area	NFA	P-20
46	NFA	Vehicle Storage Cleaning Area at Building 119	NFA	N-17
47	NFA	Aboveground Diesel Fuel Storage Tank at Building 177 - 2 & Fuel Line to Steam Plant	RIP	O-16
48	DCM	Miscellaneous Disposal Site	NFA	G-25,26, H-26
49	DCM	Horse Pasture West of Site RW15	NFA	H-24,25
50	NFA	Fire Protection Training Area No. 5	NFA	J-13
51	NFA	Oil/Water Separator at Building 600	NFA	N-26
52	NFA	Chemical Storage Shed at Building 600	NFA	N-26
53	OT20	Solvent Storage Tank at Industrial Area to Building 600	NFA	L-15, M-15
54	OT20	Industrial Wastewater Treatment Plant Process Line Between Bldg. 141 & 142	reg. No.	N-15
55	S840	Soil Contamination at Monitoring Well R200M06	NFA	N-15
56	OT20	Jet Engine Maintenance Bldg. 145, 250 & 277	NFA	M-15
57	OT14	Four 72" Inch Underground Storm Drain Culvert System Through South	RIP	J, K, L, M - 14
58	OT20	Culvert Storm Drain From the Base Industrial Area to Drainage Ditch at Fire Protection Training Area No. 3 (R200M07, 7)	sh at Fire	K, L, M - 13
59	NFA	JP-8 Product Line Along Main Control Trenchway	RIP	O-12, N-10 - 13
60	NFA	JP-8 Product Line Near Intersection of Trenchway No. 2 and Trenchway No. 3	RIP	OP-11,12
61	NFA	JP-8 Product Line Near South End of Main Runway	RIP	L-14
62	OT17	Third Street Storm Sewer and Outfall	RIP	M-18
63	OT18	Test Firing Range for M61 - 20mm Gun	NFA	N-6
64	NFA	Two Former Heating Oil Tanks at Building 903	NFA	L-26
65	NFA	Former Heating Oil Underground Storage Tank at Bldg. 904	NFA	L-26
66	NFA	Former Heating Oil Tank	NFA	S-14, 7
67	NFA	Former Building 113 Underground Storage Tank	NFA	N-15
68	NFA	Former Building 245 Underground Storage Tank	NFA	Q-18
69	NFA	Building 110 - Aircraft Hangar	NFA	OP-14
70	NFA	Building 640 Industrial WWP Process Line	NFA	N-24
71	NFA	Building 359 - Hazardous Waste Container Storage Building	HWM/NFA	N-18
72	NFA	Building 644 - Heating Oil Underground Storage Tank	NFA	N-24
73	NFA	Building 325 - O&H (R200) Hazardous Waste Container Storage Building	NFA	N-10-18
74	NFA	Building 360 Heating Oil Underground Storage Tank	NFA	L-16
75	NFA	Building 310 Heating Oil Underground Storage Tank	NFA	M-16
76	NFA	Building 2075 Heating Oil Underground Storage Tank	NFA	M-7
77	NFA	Four Pans of Voids & Associated Piping at Bldg. 122 (C - 3) Hangar	NFA	G-15, P-15
78	NFA	Lead Slag Area in Horse Pasture	NFA	G, H-26
AOC1	S836	Area of Concern Near Trenchway No. 4	NFA	S-7, T-7, 8
AOC2	NFA	Wetland Degradation of the NPL Site and GRBA	NFA	J-16, 17

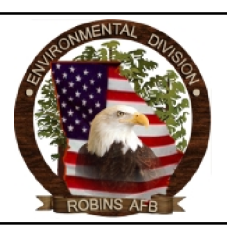


Legend

- RIP
- NFA
- Lakes/Ponds
- Wetlands

ABBREVIATIONS & ACRONYMS

- AOC - Area of Concern
- CAP - Corrective Action Plan
- CERCLA - Comprehensive Environmental Response, Compensation, & Liability Act
- HWMU - Hazardous Waste Management Unit
- ERP - Environmental Restoration Program
- NFA - Not Applicable
- NPL - National Priorities List Site; Federal Facility Agreement Dated June 14, 1989
- RCRA - Resource Conservation and Recovery Act
- POL - Petroleum, Oil, & Lubricants
- RCRA - Resource Conservation and Recovery Act
- RFI - RCRA Facility Investigation
- RIP - Remedy in Place
- SWMU - Solid Waste Management Unit



ENVIRONMENTAL DIVISION

Figure 2-3 2009 RESTORATION SITE STATUS MAP

Filename: J:\DATA\RESTORATION\ENV_SITES\2009RestorationSites.mxd			
Prepared By: MACTEC/Krista M. Mott	Prepared For: 78 CEG/CEV	Date: July 28, 2008	Revision Date: November 09, 2009
Date: July 28, 2008		Revision Date: November 09, 2009	Rev. #: 4

1997 RESTORATION SITE STATUS MAP

Robins Air Force Base Environmental Sites (Solid Waste Management Units, Areas of Concern, and Other Sites)

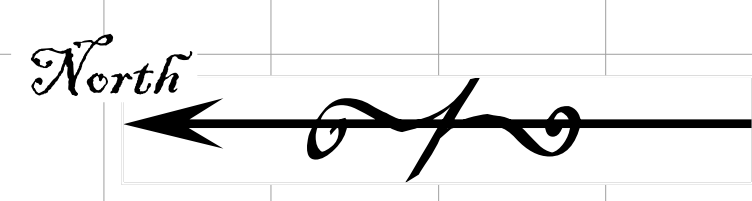
SWMU/ AOC #	ERP	SWMU/AOC Description	Corrective Action Status	Location
1	L101	Landfill No. 1	Prior to CAP	M-16
2	L101	Landfill No. 1	Prior to CAP	K-16, L-15, L-16
3	L101	Landfill No. 1	CAP	H-27
4	L104	Landfill No. 4 (CERCLA) NPL Site	Prior to CAP	K-17, L-18, M-17
5	L105	Fire Protection Training Area No. 1	Prior to CAP	L-15, L-16
6	L106	Fire Protection Training Area No. 2	CAP	H-27
7	L107	Fire Protection Training Area No. 3	Prior to CAP	K-13
8	L108	Fire Protection Training Area No. 4	Prior to CAP	L-13
9	SS09	JF4 Spill Site at Entomology Shop Bldgs. 295 & 296	NFA	NFA
10A	SS10	JF4 Spill Site A	RIP	L-14, L-15, L-16
10B	SS10	JF4 Spill Site B	Prior to CAP	L-14, L-15, L-16
11	SS11	PCH Spill Site	NFA	N-16
12	WP12	Hazardous Waste Disposal Site	NFA	G-25
13	WP13	Laboratory Chemical Disposal Area	CAP	H-27
14	WP14	Sludge Lagoons (CERCLA) NPL Site	Prior to CAP	L-17
15	WP15	Low-Level Radioactive Material Site	Prior to CAP	G-25
16	OT16	Well No. 8 TCE Contamination	NFA	O-6
17	OT17	Building 645 TCE Contamination	CAP	N-24
18	LF18	Construction Debris Landfill, East of Bldg. 1409 (PAVE PAWS)	NFA	G-30
19	LF19	Construction Debris Landfill at North End of Base	NFA	S-6, T-5, S-6
20	OT20	Greater Base Industrial Area TCE Groundwater Contamination	Prior to CAP	N-15, L-16, O-15
21	OT21	Corrosion Control Facility at Building 30	NFA	M-8
22	OT22	Solvent Storage Area Southeast of Building 361	Prior to CAP	L-16
23	OT23	Sanitary Sludge Placement Area Southeast of Building 361	Prior to CAP	L-16
24	OT17	Former Waste Solvent Underground Storage Tank at Bldg. 645	CAP	O-24
25	OT25	Painture Disposal Site	NFA	G-26
26	OT26	Off-House Drain Disposal Site	NFA	G-26
27	OT27	Gas Line Road Dump Site	NFA	LJ-16
28	SS28	Paints, Fluids Leak at Building 34	Prior to CAP	O-13
29	OT29	Duck Lake and Stream NE of Bldg. 295 & 296	CAP	K-1, M-21, L-22
30	N/A	Bldg. 1601-DRMO Hazardous Waste Container Storage Building	NFA	L-30
31	N/A	Bldg. 352-Hazardous Waste Container Storage Building	NFA	M-16
32	N/A	Bldg. 361-Drum Container Storage Building	NFA	M-17
33	AOC1	SAC Drain Site	NFA	L-8, J-13
34	AOC3	Fire Fighting Foam Lagoon	NFA	Q-11
35	N/A	Methyl Ethyl Ketone Unit at Bldg. 680	Prior to CAP	O-26
36	DC34	Horse Pasture Trash Disposal Sites	Prior to CAP	G-26
37	OT20	Solvent Reclamation Area (Bldg. 181)	Prior to CAP	N-16
38	OT20	Industrial W/WTP I&E at Bldg. 141	Prior to CAP	N-15
39	OT20	Meal Finishing Shop at Building 142	Prior to CAP	N-15
40	OT20	Machine Shop at Building 140	Prior to CAP	O-15
41	N/A	Civil Engineer Pole Yard and Transformer Storage Yard	NFA	K-27
42	N/A	Former Transformer Storage Site at Bldg. 1178	NFA	H-26
43	SS35	Plastic Shop Buildings at Building 974 (Former Dry Cleaning Facility)	Prior to CAP	N/O-26
44	N/A	Phenolic Treatment Facility at Building 363	NFA	M-16
45	N/A	Chemical Site No. 25 and Truck Wash Area	NFA	M-29
46	N/A	Vehicle Steam Cleaning Area at Building 319	NFA	N-17
47	N/A	Aboveground Diesel Fuel Storage Tank at Building 1772	Prior to CAP	O-16
48	DC34	Miscellaneous Disposal Sites	Prior to CAP	G-25, G-26, H-26
49	DC34	Horse Pasture West of Site RW15	Prior to CAP	H-25
50	N/A	Fire Protection Training Area No. 4	Prior to CAP	L-13
51	N/A	Oil/Water Separator at Building 680	Prior to CAP	N-26
52	N/A	Chemical Storage Shed at Building 680	Prior to CAP	N-26
53	OT20	Storm Sewer System from Base Industrial Area to Outfall 009	Prior to CAP	L-15, M-15
54	OT20	Industrial Wastewater Treatment Plant Process Line Between Building Nos. 141 & 142	Prior to CAP	N-15
55	SS80	Soil Contamination at Monitoring Well RH00MW6	Prior to CAP	N-15
56	OT20	Jet Engine Maintenance Bldg. 145, 256 & 257	Prior to CAP	M-15
57	OT41	Twin 72-Inch Underground Storm Drain Culvert System Through South Flightline	Prior to CAP	JK, J, M-14
58	OT20	Culvert Storm Drain from the Base Industrial Area to Drainage Ditch at Fire Protection Training Area No. 3 (SWM17)	Prior to CAP	K, L, M, N-13
59	N/A	JP-8 Product Line Along Main Controlled Taxway	Prior to CAP	O-12, N/O-13
60	N/A	JP-8 Product Line Near Intersection of Taxway No. 2 and Taxway No. 3	Prior to CAP	O/P-11, 12
61	N/A	JP-8 Product Line Near South End of Main Runway	Prior to CAP	L-14
62	OT13	Third Street Storm Sewer and Outfall	Prior to CAP	M-15
63	OT13	Low Emission Range for M61-20mm Gun	Prior to CAP	N-6
64	N/A	Two Former Heating Oil Tanks at Building 993	NFA	L-26
65	N/A	Former Heating Oil Underground Storage Tank at Bldg. 994	Prior to CAP	L-26
66	N/A	Tarps at A300 Bldg. Site	NFA	S-7, 6-7
67	N/A	Former Building 113 Aboveground Storage Tank	NFA	N-15
68	N/A	Former Building 245 Underground Storage Tank	NFA	Q-18
69	N/A	Building 116-Armament Hangar	NFA	O/P-14
70	N/A	Building 640 Industrial W/WTP Process Line	NFA	N/O-24
71	N/A	Building 359 - Hazardous Waste Container Storage Building	NFA	N-18
72	N/A	Building 644 - Heating Oil Underground Storage Tank	NFA	N-24
73	N/A	Building 325 - Old DRMO Hazardous Waste Container Storage Building	NFA	O-18
74	N/A	Building 360 Heating Oil Underground Storage Tank	NFA	L-16
75	N/A	Building 207 Heating Oil Underground Storage Tank	Prior to CAP	M-16
76	N/A	Building 207 Heating Oil Underground Storage Tank	NFA	M-7
AOC1	SS36	Area of Concern Near Taxway No. 4	Prior to CAP	S-7, T-7

ABBREVIATIONS & ACRONYMS

- AOC - Area of Concern
- CAP - Corrective Action Plan
- CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
- HWMU - Hazardous Waste Management Unit
- ERP - Environmental Restoration Program
- N/A - Not Applicable
- NFA - No Further Action required at this time
- NPL - National Priorities List Site; Federal Facility Agreement
- Dated June 14, 1989
- Incorporated into this Permit by Reference
- POL - Petroleum, Oil, & Lubricants
- RCRA - Resource Conservation Recovery Act
- RFI - RCRA Facility Investigation
- RI - Remedial Investigation
- RIP - Remedy in Place
- SWMU - Solid Waste Management Unit

Legend

- Prior to CAP
- CAP
- RIP
- NFA
- Lakes/Ponds
- Wetlands



ENVIRONMENTAL DIVISION

Figure 2-4
**1997 RESTORATION
SITE STATUS MAP**

Filename: J:\DATA\RESTORATION\ENV_SITES\1997 Restoration Sites Map E Size.mxd

Prepared by: MAC/TEC/Krista M. Mott

Date: July 28, 2008

Prepared For: 78 CEV/CEV

Revision Date: December 16, 2009

Rev. # 5

APPENDIX A

COMMUNITY RELATIONS CONTACTS

COMMUNITY RELATIONS CONTACTS

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APPENDIX B

PUBLIC INFORMATION LOCATIONS

Information Repository/Administrative Record/Other Information Locations

The information repository and administrative record contain laws, work plans, technical reports, and other relevant information associated with the ERP. The information repository and administrative records for the Robins AFB ERP have been set up at the following locations:

Nola Brantley Memorial Library
(also known as Houston County Libraries - Warner Robins Houston County Library)
(Information Repository and Selected Administrative Record Documents)
721 Watson Boulevard
Warner Robins, Georgia 31093
(478) 923-0128
Contact: Karen Odom, Head/Reference Librarian

78 CEG/CEV
(Administrative Record /Mailing Address)
755 Macon Street, Building 1555
Robins AFB, GA 31098-2201

(Physical Location)
Building 359
Robins AFB, Georgia 31098-2201
(478) 327-9268
Fax: (478) 926-3267
Contact: Ms. Charline Logue

Public Meeting Locations

The following locations could be used for public meetings or information open houses:

Scott Theater
Museum of Aviation
Highway 247
P. O. Box 2469
Warner Robins, Georgia 31099
(478) 923-6600
Contact: Ms. Rachel Bartz (Events Coordinator)

Warner Robins Civic Center
702 Watson Blvd.
P.O. Box 1488
Warner Robins, Georgia 31099
(478) 929-1111
Contact: Ms. Kathy Opitz

Warner Robins City Hall
700 Watson Blvd.
Warner Robins, Georgia 31099
(478) 929-1115
Fax: (478) 929-1957
Contact: Ms. Faye Coulter

Centerville City Hall
300 East Church Street
Centerville, Georgia 31028
(478) 953-4734 ext. 231
Fax: (478) 953-4797
Contact: Ms. Krista Bedingfield

APPENDIX C

EAB FACT SHEETS



Robins Air Force Base Environmental Advisory Board (EAB)

Fact Sheet



Volume 3, Issue 3, February 2009

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...

- Applications of Biomimicry at Robins AFB.... page 2
- Leachate Treatment in Constructed Wetlands.. page 3
- Acronyms page 4
- EAB Member List page 4

FEBRUARY 2009 EAB Meeting

The winter meeting of the EAB was held February 5, 2009, at Centerville City Hall, in Centerville, Georgia. The topic briefed was: "An Exploration into Biomimicry and It's Application in Engineering and Environmental Restoration."

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

The next meeting will be held on May 7, 2009.

EAB MEMBERS EXPLORE THE EMERGING SCIENCE OF BIOMIMICRY

World economic and population growth has led to an increased demand for energy, food, water, and other natural resources. To meet this increased demand and provide for a more sustainable future, renewable resources must be developed that manage energy and resource demands more efficiently. Adopting biomimicry principles is one option for developing renewable resources. "Biomimicry", which originates from the root words "bios", meaning life, and "mimesis", meaning to imitate, is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems and, in particular, promote sustainability.



Mr. Neil Davies, with Geosyntec consultants, gave the EAB members an introduction to the field of Biomimicry at the February EAB meeting.

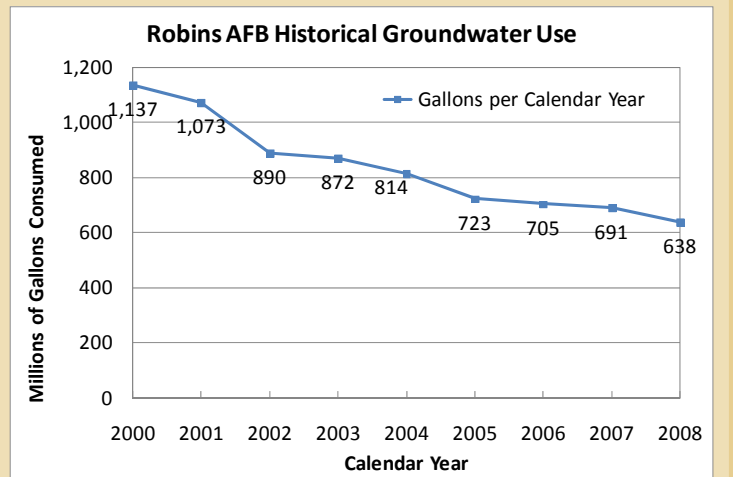
Mr. Neil Davies, with Geosyntec Consultants, Inc., gave the EAB members an introduction to the science of biomimicry during the recent EAB meeting. There are both "direct approaches" (i.e., developing solutions based closely on replication of nature) and "indirect approaches" (i.e., developing solutions based on the general principles of nature) to biomimicry.

(Continued on page 4)

ROBINS AFB APPLYING BIOMIMICRY PRINCIPLES TO PROMOTE SUSTAINABILITY

Robins AFB is continually seeking ways to promote sustainability. Several recent projects have done this through the use of technologies and solutions consistent with biomimicry principles. As part of his briefing to the EAB members (see Page 1), Mr. Davies presented an overview of examples from Robins AFB in which biomimicry principles have actively been employed. A few of these examples included the following:

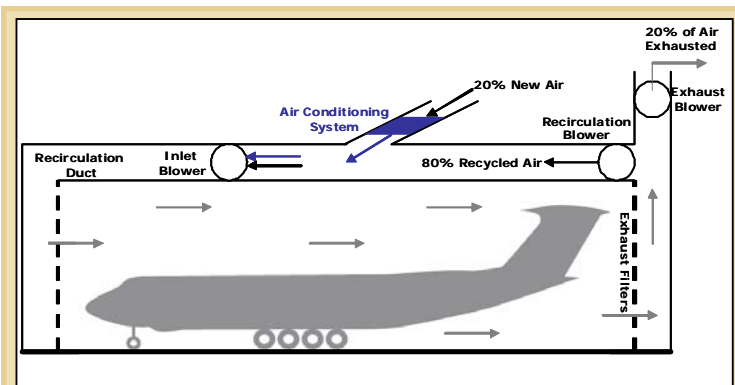
- **The Robins AFB Paint/Depaint Facility** - The facility, which the EAB members toured in April 2008, recirculates and reuses 80 percent of the conditioned air, reducing both electrical and gas demands. This is consistent with the biomimicry principle of: “Gather and Use Energy Efficiently.”
- **Water Conservation** - In line with the biomimicry principles of “Do Not Drawdown Resources” and “Optimize, Not Maximize”, Robins AFB proactively seeks ways to conserve water. Improvements to industrial processes, leak detection surveys and infrastructure improvements, educational efforts, and low flow plumbing fixtures have resulted in a significant reduction in water usage in the past eight years.
- **Composting Facility** - Robins uses the biomimicry principle of “Use Waste as a Resource” every day at the composting facility. The facility recycles yard waste and stable waste from the horses maintained as part of the Base recreation program for use in Robins AFB beautification projects. Yard waste is one of the largest waste streams on Base, often topping 2,000 tons annually.



Water conservation efforts have resulted in a significant reduction in water usage in the past eight years.



The composting facility recycles yard and stable waste for use in Robins AFB beautification projects.



Conceptual diagram for the air recirculation system at the Robins AFB Paint/Depaint Facility (adapted from The Air Force Civil Engineer magazine, Volume 15, Number 2, 2007).



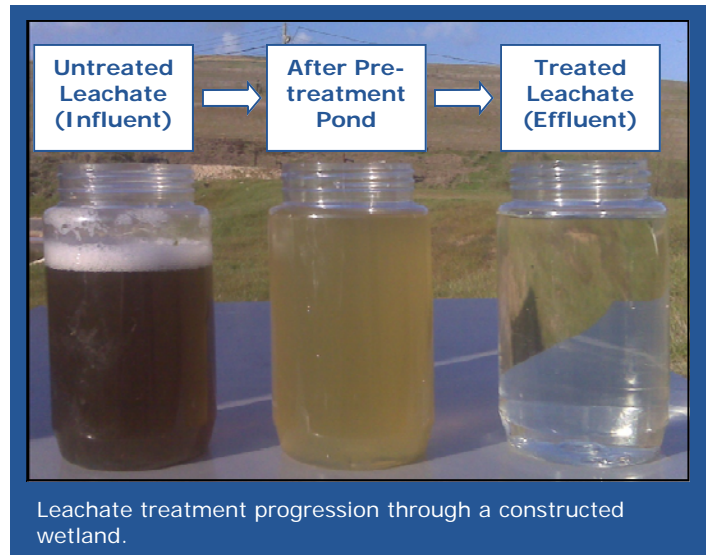
Mr. Joe Ballard, Director of the 78th Civil Engineer Group (78 CEG), participated in the February EAB Meeting. Mr. Ballard retired from the Air Force in 2008 after serving over 25 years as a Civil Engineering officer. Throughout his career, he held numerous assignments, including two tours at Robins AFB. As director of the 78 CEG, he oversees all civil and environmental engineering activities at the Base and is responsible for maintenance of the Base's infrastructure, valued at \$3.5 billion.

USING CONSTRUCTED WETLANDS AS AN INNOVATIVE TREATMENT TECHNIQUE FOR LANDFILL LEACHATE

As part of the EAB meeting, **Dr. Herwig Goldemund**, also of Geosyntec Consultants, Inc., presented a detailed overview of constructed wetlands. Constructed wetlands are an indirect approach to biomimicry, in which microorganisms found in nature can be used to treat contaminants in our environment (e.g., in landfill leachate).

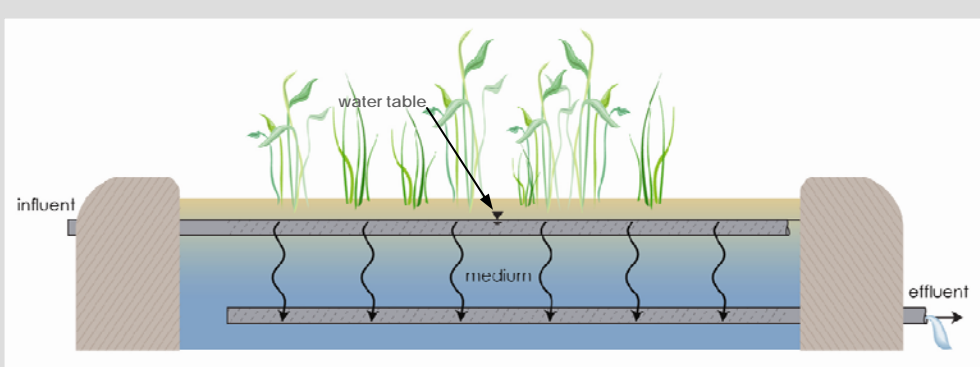
Leachate treatment and disposal is one of the largest ongoing operating costs for a typical municipal solid waste landfill. Landfill managers continue to seek alternative leachate management strategies that are both cost-effective and environmentally sound. The use of constructed wetlands has emerged as a viable solution. Constructed wetlands systems incorporate biological (i.e., microbial activity, plant uptake), physical (i.e., filtration), and chemical (i.e., precipitation) treatment processes, and are comprised of engineered treatment cells planted with a variety of wetland plants. In a constructed wetlands system, the main treatment mechanism is not plant uptake, but rather microbiological processes that are facilitated by the plant life.

There are three main types of constructed wetlands including surface flow, subsurface horizontal flow, and subsurface vertical flow wetlands. While surface flow wetlands mimic natural wetland systems, potential limitations include poor treatment performance in the winter (if the system is susceptible to freezing); the requirement of significant land area for treatment; and the potential for mosquitoes and



odors. In a subsurface flow wetland, the above limitations are removed. As an added benefit, subsurface flow wetlands allow for increased contact time between the leachate and bacteria.

Case studies from several sites have shown that constructed wetland systems can be used to successfully treat landfill leachate to meet stringent water quality criteria prior to discharge while also substantially reducing treatment costs. For example, at one landfill site in Alabama, it has been estimated that the leachate treatment cost will be reduced from 15 cents per gallon for off-site trucking and disposal to 1.2 cents per gallon for the constructed wetland system (including both the capital cost for construction and operations and maintenance costs).



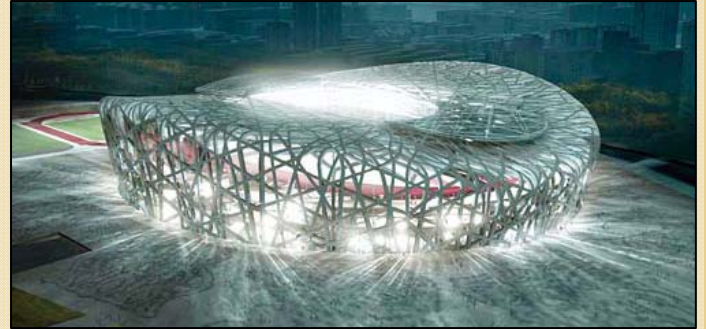
Subsurface vertical flow wetland systems were one of three types of constructed wetlands systems discussed by Dr. Goldemund. In a subsurface vertical flow system the liquid to be treated is allowed to percolate downward through the treatment medium, which allows for increased contact between the liquid and the bacteria. These systems offer efficient treatment, even in winter, while requiring a relatively small aerial footprint.

(Continued from page 1)

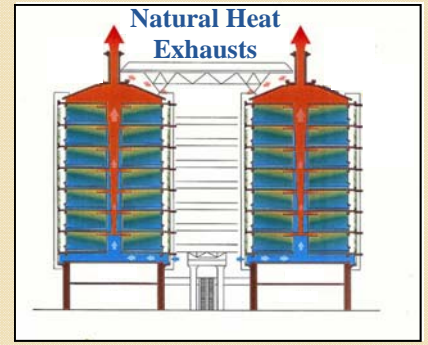
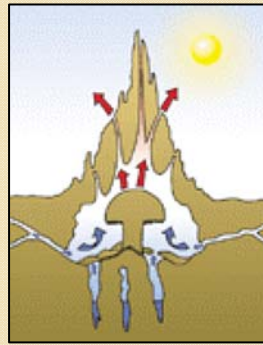
Examples of the direct approach include applications such as mimicking shark skin in designing surface coatings for ships or mimicking the design of a whale fin in designing turbine blades. Indirect approaches are generally based on the following ten principles:

- Use waste as a resource
- Diversify and cooperate
- Gather and use energy efficiently
- Optimize, not maximize
- Use materials sparingly
- Cleanup, don't pollute
- Do not drawdown resources
- Remain in balance with the biosphere
- Run on information
- Use local resources

The goal of both approaches is to improve the world through designs that take advantage of what nature has learned will work through 3.5 billion years of research and development.



Beijing National Stadium (i.e., the "Birds Nest"), which was unveiled during the 2008 Summer Olympics, is an example of a direct approach to biomimicry. The stadium was structurally designed to closely replicate an actual bird's nest.



The Eastgate Shopping Center in Harare, Zimbabwe is an example of an indirect approach to biomimicry. The design (photo on the right), which was developed to mimic the self-cooling African termite mounds (see two photos on the left), requires no conventional air-conditioning or heating.

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

- AFB Air Force Base
- 78 CEG 78th Civil Engineer Group
- EAB Environmental Advisory Board

Environmental Advisory Board Members

Ms. Becky McCoy, Robins AFB Installation Co-Chair	Mr. Ron Carbon, Warner Robins Community Member	Mr. Broderick Lowe, Warner Robins Community Member
Dr. Linda Smyth, Macon Community Co-Chair	Ms. Marianne Golmitz, Warner Robins Community Member	Mr. Mike Maffeo, Macon Community Member
Dr. Dann Spariosu, U.S. EPA Region 4 Federal Facility, Hazardous Waste Div.	Mr. James Harden, Warner Robins Community Member	Dr. M.B. Neace, Macon Community Member
Ms. Mary Brown, GA EPD Hazardous Waste Management	Mr. John Harley, Centerville Community Member	Dr. Brian E. Rood, Macon Community Member
Mr. Fred Hursey, Robins AFB Chief, Programming Branch	Dr. Joyce Jenkins, Fort Valley Community Member	Dr. Joseph Swartwout, Fort Valley Community Member
Dr. Dan Callahan, Warner Robins Community Member	Mr. Stephen Johnson, Macon Community Member	Mr. Don Thompson, Macon Community Member



Robins Air Force Base Environmental Advisory Board (EAB)

Fact Sheet



Volume 3, Issue 4, May 2009

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...

Rotosonic Drilling and Monitoring Well Installation Techniques	page 2
Base Receives Environmental Awards	page 2
Acronyms	page 4

MAY 2009 EAB Meeting

The spring EAB meeting was held Thursday, May 7, 2009, at Robins AFB. The meeting included a demonstration of Rotosonic drilling and monitoring well installation at the Building 645 Site (also referred to as OT17). Upon completion of the tour, the members assembled at The Lodge at Luna Lake for the meeting portion of the program.

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

The next meeting will be held on Thursday, August 6, 2009.

EAB MEMBERS OBSERVE FIELD INVESTIGATION ACTIVITIES AT BASE RESTORATION SITE

Mr. Phil Manning, 78 Civil Engineer Group, Environmental Division (78 CEG/CEV) and representatives from Geosyntec Consultants (Geosyntec) and Miller Drilling held a demonstration of Rotosonic drilling and installation of a groundwater monitoring well for the EAB members during the Spring 2009 Tour. The demonstration was held at OT17 where Geosyntec was completing a field investigation program to drill ten holes at locations around the site and subsequently install monitoring wells in them.



Mr. Phil Manning, with the 78 Civil Engineer Group, Environmental Division, provides the EAB members with an overview of the OT17 geology.

OT17 is one of the Base's restoration sites consisting of groundwater that was impacted by historic releases of solvents [trichloroethylene (TCE)] that leaked from an underground storage tank which was removed in 1988. The remedial system for the site currently consists of both groundwater and soil vapor extraction systems. Groundwater collected from the extraction wells is pumped to the Groundwater Treatment Plant (GWTP) for treatment.

(Continued on page 4)

ROTOSONIC DRILLING USED FOR MONITORING WELL INSTALLATION AT OT17

During the Spring 2009 Tour, EAB members were on-site at OT17 to observe firsthand the installation of monitoring well OT17MW17 (see related story on page 1). Although several drilling methods are available to install monitoring wells, Rotosonic drilling was selected for this field investigation program. While many other drilling methods only use two forces to advance the drill stem (i.e., rotation of the cutting head and vertical pushing by hydraulics), Rotosonic drilling also uses sonic vibrations.

Advantages to Rotosonic drilling are numerous and include that it: (i) is relatively fast; (ii) allows for the collection of continuous cores for visual observation; (iii) allows for the collection of soil samples at discrete depth intervals for laboratory testing; and (iv) minimizes the amount of drill cuttings that must be disposed.

Boreholes can range in size, but for this project, the drillers first drilled to the desired depth with a four inch



Representatives from Miller Drilling advance a four inch casing to obtain the soil core. The drill rig used for this project was a Versa-Sonic Sonicor 50k. A support vehicle is shown to the left of the drill rig. This vehicle supplies water to the borehole to flush out the soil between the four and six inch casings.

casing to obtain the soil core. Then, they advanced a six inch casing over the four inch casing to keep the borehole open while the four inch casing containing the soil core was removed. Following extraction of the soil core from the borehole, a plastic bag was wrapped around the bottom of the core barrel, and the

(Continued on page 3)

ROBINS AFB WINS MULTIPLE ENVIRONMENTAL AWARDS



Robins AFB was recently selected for the **2009 White House Closing the Circle Award** for its Green Procurement Program. This award recognizes outstanding achievements of Federal employees and their facilities for efforts resulting in significant contributions toward promoting environmental stewardship.

In 2009, 15 winners and 14 honorable mentions were selected from nearly 200 nominations in the areas of environmental management systems, pollution prevention, recycling, green product purchasing, alternative fuels, electronics stewardship, and sustainable buildings. Green purchasing includes the acquisition of recycled content products, environmentally preferable products and services, biobased products, energy- and water-efficient products, alternate fuel vehicles, products using renewable energy, and alternatives to hazardous or toxic chemicals. The awards ceremony will be held in Washington D.C. in June 2009.



The GWTP at Robins AFB continues to be recognized for its outstanding operations. The plant treats groundwater extracted from six of the Base's restoration sites. The Base and plant operators were recognized by the Georgia Association of Water Professionals in April 2009 with three awards including:

- **Plant of the Year for Industrial Water Treatment Plants (Best in State for Outstanding Operation);**
- **Safety Award (No lost-time accidents since the plant began operation in 1997); and**
- **Gold Award (100 percent Industrial Discharge Permit Compliance).**

This is the seventh time the GWTP has been awarded the Georgia Plant of the Year honors.

ROTONSONIC DRILLING USED FOR MONITORING WELL INSTALLATION AT OT17 (CONT'D...)

(Continued from page 2)

soil core was vibrated out of the barrel. The drillers then provided the core to a field geologist to inspect it, record the types of soil encountered (color, grain size, gradation, etc.), collect samples, and take photographs. This information was then transferred to a soil boring log.



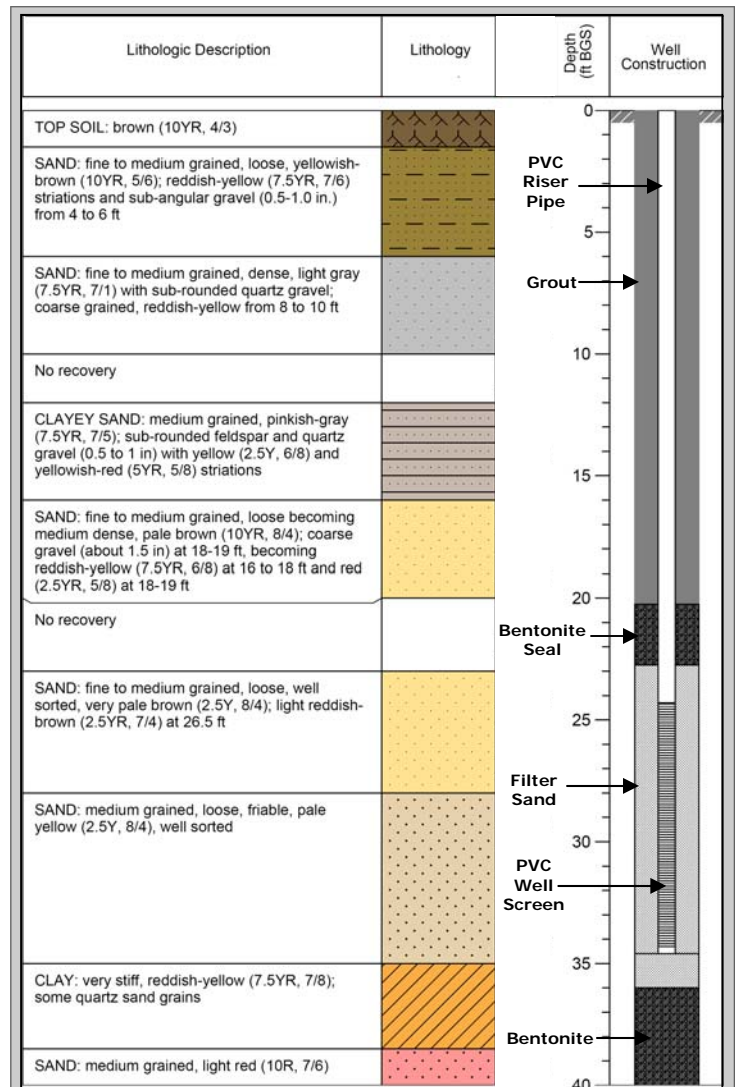
Representatives from Miller Drilling collect the four inch soil core from the core barrel in a plastic sleeve.



Dr. Lina Kodjo-Wayo, P.G., field geologist with Geosyntec, inspects the core to record the types of soil encountered during drilling.

Following drilling, the monitoring well was installed in the borehole. Bentonite chips and sand were used to fill the borehole to the desired well placement depth. Then a 2-inch diameter 10-foot long polyvinyl chloride (PVC) slotted well screen and un-slotted PVC riser pipe was lowered to the top of the sand. A stainless steel centralizer was placed on the PVC pipe to ensure that the well stays centered in the borehole. Filter sand was used to backfill the annular

space between the well and the borehole to just above the top of the screened interval. The sand acts as a filter to prevent fine grained soil particles from clogging the well screen (or entering into the well casing), while allowing for flow of the surrounding groundwater into the screened portion of the well. The remainder of the annular space was filled with approximately two feet of bentonite and then a cement bentonite grout to provide a seal that prevents the migration of surface water into the aquifer. A locking cap was placed at the top of the well. The well was encased in a manhole vault with a protective cover and concrete well pad.



Soil boring log for OT17MW17, which was drilled the day of the EAB tour. The log provides a description of the types of soils that were encountered during drilling and details how the monitoring well was constructed.

(Continued from page 1)

The groundwater contamination at OT17 is located in the unconfined upper Providence and confined upper Providence aquifers, which are separated by a clay unit that ranges in thickness from 3 to 20 feet in the vicinity of the site.

The overall goal of the field investigation program at OT17 is to help

refine the understanding of the subsurface soil and groundwater flow at the site in order to identify remedial optimization strategies that could potentially enhance the site's remedial system, shorten the cleanup time, and reduce the overall cleanup cost.

The soil borings were performed to obtain geologic information about

the subsurface soils and to permit the installation of monitoring wells. Groundwater elevations obtained from the wells will be used to better understand groundwater flow direction. Additionally, the results of groundwater samples collected from the wells will be used to refine our understanding of the extent of contamination at the site.

The hydrogeologic information will be added to an historic database to develop cross-sections and three-dimensional visualizations, create contaminant concentration time trends, assist in groundwater modeling efforts, etc. These tools will help to evaluate remedial progress at the site and optimize the site's remedial systems.



Mr. Jimmy Whitmer, with Geosyntec, uses a mock-monitoring well setup to demonstrate how a groundwater sample is collected using a bailer and transferred to a sample container for shipment to an analytical laboratory. Dr. M.B. Neace, one of the EAB Advisory Board members assists Mr. Whitmer.

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

AFB	Air Force Base
CEG	Civil Engineer Group
CEV	Environmental Division
EAB	Environmental Advisory Board
GWTP	Groundwater Treatment Plant
OT17	Building 645 Site
PVC	Polyvinyl Chloride
TCE	Trichloroethylene

Environmental Advisory Board Members

Ms. Becky McCoy, Robins AFB Installation Co-Chair	Mr. Ron Carbon, Warner Robins Community Member	Mr. Broderick Lowe, Warner Robins Community Member
Dr. Linda Smyth, Macon Community Co-Chair	Ms. Marianne Golmitz, Warner Robins Community Member	Mr. Mike Maffeo, Macon Community Member
Dr. Dann Spariosu, U.S. EPA Region 4 Federal Facility, Hazardous Waste Div.	Mr. James Harden, Warner Robins Community Member	Dr. M.B. Neace, Macon Community Member
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Robins Air Force Base Environmental Advisory Board (EAB)

Fact Sheet



Volume 4, Issue 1, August 2009

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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AUGUST 2009 EAB Meeting

The summer EAB meeting was held Thursday, August 6, 2009, at Centerville City Hall in Centerville, Georgia. The topic briefed was: "Utilizing Trenchless Technologies for Water Main Upgrades at Robins Air Force Base (AFB)."

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

The next meeting will be held on Thursday, November 5, 2009.

TRENCHLESS TECHNOLOGY OFFERS SOLUTION TO COSTLY INFRASTRUCTURE UPGRADES

Trenchless technologies are a family of methods, materials, and equipment that are becoming frequently used to install new utilities or to repair and/or rehabilitate existing utilities. During the summer EAB meeting, **Mr. Jonathan Raymer of TEPA EC** gave the EAB members a detailed introduction to trenchless technologies and discussed the many benefits of them over more traditional excavation methods for many applications.



EAB members Mr. James Harden (left) and Mr. Mike Maffeo (right) inspect pieces of pipe during the recent summer EAB meeting. Mr. Harden is holding a piece of polyvinyl chloride (PVC) pipe that has been lined. Mr. Maffeo holds a piece of the liner.

Much of the underground utility infrastructure (e.g., industrial and sanitary sewers, drinking water conveyance pipes, stormwater conveyance pipes, etc.) in the United States is approaching the end of its typical 50-year design life, especially in older communities. As a result, it is becoming more common to have problems with these systems. Pipes that are corroded can result in sinkholes on the surface, interruption in service when the lines are broken, and overloading of treatment plants when stormwater and/or groundwater leaks into broken lines.

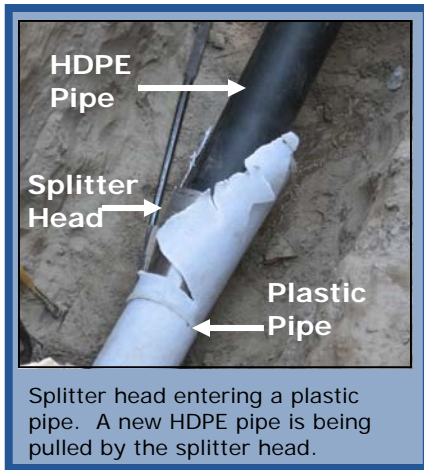
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ROBINS AFB PROACTIVELY UPGRADING WATER DISTRIBUTION SYSTEM

The Robins AFB drinking water system consists of more than 100 miles of conveyance piping. Much of the system was constructed with asbestos cement piping that is now operating beyond its 50-year design life. The pipelines are requiring more frequent point repairs, and oftentimes, once a repair is made, another segment of the pipeline downstream then experiences a problem.

As a result, the Base has taken a proactive approach to replacing the asbestos cement water distribution lines. Because the pipes must be replaced without interrupting Base operations, and the lines are generally located under sensitive areas including live electric lines and active traffic flows, trenchless technologies often offer a cost-effective solution with minimum impact to the Base's mission.

Pipe bursting is generally selected as the trenchless rehabilitation method for the projects on the Base. Pipe bursting consists of breaking an existing pipe while simultaneously pulling in a new replacement pipe



Splitter head entering a plastic pipe. A new HDPE pipe is being pulled by the splitter head.

(see inset on Page 3). High density polyethylene (HPDE) is most commonly used at Robins AFB for the new pipes, but ductile iron, steel, concrete, PVC, etc. can also be used. Pipe bursting also allows you to replace the existing pipe with the same size pipe or increase the pipe by one size larger. The new pipe is commonly pulled distances up to 350 feet, and in some cases, pipe lengths as long as 1,000 feet have been replaced in a single pull.

Prior to commencing with the pipe bursting process, the pipeline is typically inspected using robotic closed circuit television to evaluate the condition of

the pipe, confirm service connections, etc. As necessary, the existing pipe is then cleaned using a vacuum system. Any material collected during the cleaning process is disposed of in accordance with appropriate local, state, and federal regulations.



Robotic cameras are used to inspect pipelines.

The HDPE pipes for the projects at Robins AFB are staged in the construction area. Each segment of pipe is disinfected before placed into service. A chlorine solution is placed in the pipe for 24 hours to kill any bacteria, and the pipe is subsequently flushed with rinse water. A sample of the rinse wa-

(Continued on page 3)



Prior to being installed, each section of pipe must be disinfected for 24 hours using a chlorine solution.



The entire length of pipe is laid out and welded together before installation.

ROBINS AFB PROACTIVELY UPGRADING WATER DISTRIBUTION SYSTEM (CONT'D)

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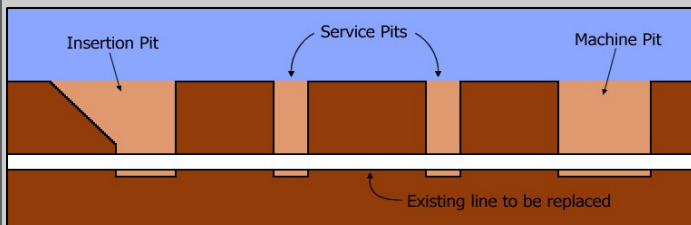
ter is then obtained and analyzed by a certified laboratory for bacteria. If the sample is free of bacteria, the pipe is sealed at both ends until it is ready to be placed into service. The ends of the pipe are spot cleaned before being connected to the system. The entire length of pipe is connected together using an HDPE pipe welding/fusing machine and tested for leaks before being placed into the ground. The welded joints on the pipe are stronger than the pipe itself.

As the new pipe is installed, new valves, hydrants, and manholes are also connected to the line. Following the pipe installation efforts, the ground surface is restored at each access pit.

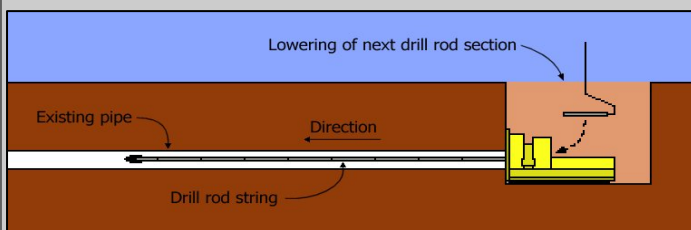


Pipe bursting equipment in the machine access pit.

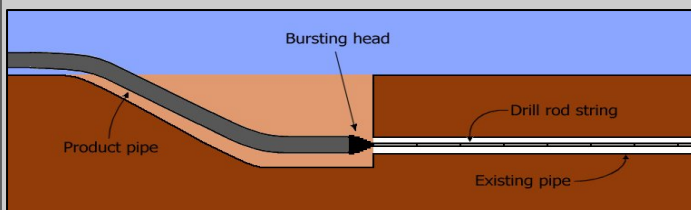
Static Pipe Bursting Process



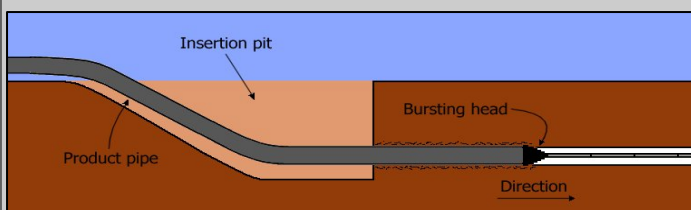
Step 1: Prior to beginning a pipe bursting project, the existing pipe is inspected using closed circuit television. Then, the pits for the machine, the new pipe insertion equipment, and any service pits are excavated. The pits must be maintained dry and properly shored to prevent collapse.



Step 2: Next, the pipe bursting machine is set up in the machine pit. Drill rods are lowered into the pit and continuously pushed through the existing pipe toward the new pipe insertion pit.



Step 3: When the drill rod string emerges at the new pipe insertion pit, the pipe bursting head and replacement pipe are attached to the rod string. The new pipe is already fused into a single continuous length and ready for the pull back replacement process.



Step 4: The drill rod string is then pulled back toward the machine pit. The bursting head breaks the existing pipe, pushes the broken pieces into the surrounding ground, and pulls the new pipe through the opening created by the bursting head.

(Continued from page 1)

Infrastructure upgrades are often costly because it is difficult to access pipes using traditional excavation methods below streets, sidewalks, and buildings. Traffic or businesses must often be interrupted; and frequently, the location and condition of these utilities are unknown or unclear.

Trenchless technologies are often a less costly solution because they can be implemented with minimal disruption to surface traffic, businesses, and other activities. Additionally, they typically reduce or eliminate the costs associated with: (i) removal and replacement of asphalt and/or concrete; (ii) excavation; (iii) hauling and disposal of excess soil; and (iv) fill material and compaction. On projects with asbestos cement piping, trenchless technologies can be used to replace the hazardous material with minimal exposure to the workers.

Trenchless technologies can be used to repair or replace existing utilities (i.e., rehabilitation) or for new construction (i.e., install pipe). Rehabilitation techniques commonly include pipe bursting (see inset on page 3), cured in place pipe, sliplining, etc. Trenchless construction techniques commonly include directional drilling, tunneling, pipe ramming, etc.



Aging infrastructure across the United States is causing problems with the drinking water infrastructure. Corroded pipes that collapse or break can result in sinkholes at the ground surface, interruption to service and traffic, and costly repairs.

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 or visit <http://www.robinseab.org>

Acronyms

- AFB Air Force Base
- EAB Environmental Advisory Board
- HPDE High Density Polyethylene
- PVC Polyvinyl Chloride

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