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ship of government monies while supporting the most expedited clean-up of remaining sites.

Comparing historical numbers at Robins to the AF, Mr. Long reported that there are almost 5,000 restoration program sites in the AF (42 at Robins), more than 1,000 AOCs (none active at Robins), and that costs to date have been \$5.4 billion for the AF (\$153 million at Robins). Mr. Long's assignment was to build a

“Restoration Tiger Team” to respond to the audit request. Mr. Long's team included more than 40 individuals from all MAJCOMs. The team addressed five major issues and devised improvement strategies for each. The five were time and cost to ROD, personnel retention, reduction of AOCs, AFRIMS system reliability, and reduction of cost-to-complete. New restoration metrics bring management attention to critical areas. Examples include the review of AFRIMS data, development of a Restoration Report Card, and newly instituted annual reviews of MAJCOMs.

Mr. Long concluded by stating that Robins received the top grade on the Restoration Report Card in the AFMC, which was itself the top MAJCOM in the review.

Glossary

- AF Air Force
- AFB Air Force Base
- AFMC AF Materiel Command
- AFRIMS AF Restoration Information Management System
- AOC Area of Concern
- EM Environmental Management Directorate
- ERP Environmental Restoration Program
- FY Fiscal Year
- GA EPD Georgia Environmental Protection Division
- MAJCOM Major Command
- MNA Monitored Natural Attenuation
- NFA No Further Action
- PAH Polynuclear Aromatic Hydrocarbon
- PBC Performance Based Contracting
- RAB Restoration Advisory Board
- ROD Record of Decision
- SWMU Solid Waste Management Unit
- VOC Volatile Organic Compound



Mr. Long describes his activities as leader of the AF “Restoration Tiger Team”

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Restoration Advisory Board Members

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



Robins Air Force Base Restoration Advisory Board (RAB) *Fact Sheet*



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The Robins AFB RAB

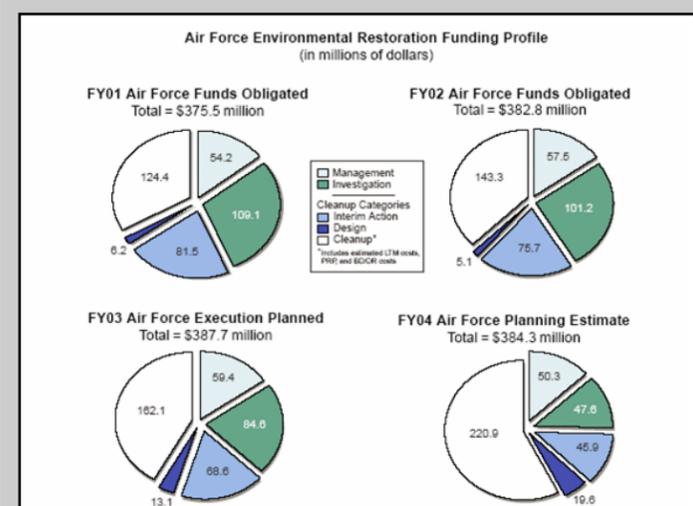
Recognizing the importance of public involvement in environmental restoration, Robins Air Force Base has established the Restoration Advisory Board. The mission of the RAB is to encourage community participation in the Air Force Environmental Restoration Program (ERP) cleanup process and allow community members and other stakeholders to have meaningful dialog with Base officials. The RAB includes members from the community, regulatory agencies, and the Base, and holds four public forums per year. The RAB serves to advise Robins AFB management and disseminate information to the public.

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Robins Restoration Program Receives Top Marks in Air Force Review

Mr. Kevin Long, Chief of the Environmental Operations Division, briefed the RAB on the results of a recently-completed internal AF review of the service-wide restoration program. During his recent temporary assignment at the Pentagon, Mr. Long was instrumental in ensuring that the comprehensive AF-wide program



Mr. Long showed several graphics illustrating AF progress toward completion of the restoration program. In this figure, he indicated the shrinking green wedge and widening dark blue wedge show how the program is progressing from studies to clean-up

achieved its goals in the most efficient and cost-effective manner possible.

The Deputy Assistant Secretary of the Air Force for Environment, Safety, and Occupational Health recently directed that a detailed audit be conducted of restoration programs within the AF. The audit outcome was to be a series of measures to ensure the best steward-

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January 2004 RAB Meeting

The winter meeting of the RAB was held on January 8, 2004, at the Hampton Inn, Warner Robins, Georgia. The theme of this meeting was “Key Robins Initiatives in the Spotlight.” Three briefings were presented; the topics covered were, “Horse Pasture Site Remediation,” “Air Force Environmental Restoration Program,” and “Luminous Paint Shop Survey.”

This RAB *Fact Sheet* provides a summary of the information and topics discussed in the meeting. **The next meeting will be held on March 11, 2004.**

Remediation Alternatives Under Evaluation for Horse Pasture Site Restoration Project

Results to Date Support Excavation-Stabilization-Disposal for Soils, Chemical Oxidation and MNA for Groundwater

Mr. Mark MacEwan, Tetra Tech, briefed the RAB on the remedial program underway at the Horse Pasture site under the Performance Based Contract (PBC) mechanism described at several recent RAB meetings.



Final remedies for the Horse Pasture site are still under review; results to date favor stabilization of soils by blending of soil with stabilizing chemical followed by excavation and disposal off-base

Left - excavation underway. Right - blending apparatus with integral chemical injection pipe

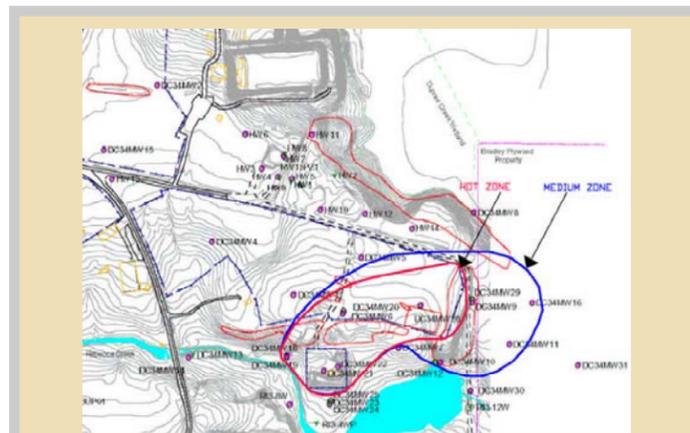
The site has been divided into several SWMUs to ensure appropriate focus and clean-up. The SWMUs that comprise the site are:

- SWMU 36 - trench disposal burn pit - VOCs (mostly chlorinated solvents) and metals
- SWMU 48A - miscellaneous fill material - metals (lead and arsenic), PAHs, one pesticide
- SWMU 48B - miscellaneous fill material - metals (lead and arsenic)
- SWMU 48C - miscellaneous fill material - metals (lead and arsenic) and one PAH
- SWMU 49 - small arms firing range - lead and one PAH
- Site-wide groundwater - VOCs

The final selection of remedies is still pending, with evaluations and comparisons underway. At present the evaluation results are supporting the following remedies.

For soils, results thus far indicate that excavation, stabilization with chemical addition, and disposal off-base as a non-hazardous solid waste may be the preferred alternative. The approach under this scenario would include further delineation of soils, followed by excavation, separation and removal of any lead slag encountered (especially in SWMU 49), and stabilization of soils with addition and blending of the appropriate chemical (still under evaluation).

For groundwater, results so far indicate that a combination of in-situ chemical oxidation in more concentrated contamination areas along with MNA in outlying areas may be the preferred alternative. This approach includes the conduct of bench tests of oxidants, injections into the “hot zone” (area of highest concentration) followed by injections into the “medium zone,” with groundwater monitoring throughout. The schedule calls for complete Horse Pasture site remediation by 2009.



Hot and medium zones proposed for groundwater remediation at the Horse Pasture Site

Survey of Former Luminous Paint Shop Underway

Preliminary Results Subject of RAB Briefing

A building that formerly housed a luminous paint shop during the 1940s and 1950s at Robins has been included in a nationwide survey of such facilities on AF installations. **Capt. Steven Lange**, 78 AMDS/SGPB, briefed the RAB on the study background, sampling program, and preliminary results.

As described by Capt. Lange, luminous paints containing radium were used nationwide to paint aircraft dials during the 1940s and 1950s. Although “glow-in-the-dark” painted dials were highly useful in aircraft, the AF adopted improved technologies. As a result, the luminous paint shops were deactivated in the 1950s generally across the country, and the buildings that housed these operations were converted to other uses.

Recently a survey was initiated by the AF Surgeon General to investigate the remaining buildings that formerly housed these shops to determine if any residual contamination may be present. The study has been conducted at the bases by local Bioenvironmental Engineers and coordinated by the AF Institute for Operational Health.



Areas of Building 158 undergoing investigation to detect any remaining residuals of luminous paints from the application of these paints in the 1940s and 1950s; initial results show no health risks

At Robins AFB, the luminous paint shop activities had been conducted in Building 158. Preliminary samples were taken and subjected to analysis; a long-term study is now underway.

Results obtained from the preliminary investigation show that only very limited areas of low-level radium contamination remain in the building following its



Capt. Steven Lange, 78 AMDS/SGPB, briefs the RAB on the investigation of former AF luminous paint shops underway nationwide, including Building 158 at Robins

repeated cleanings over the years and its renovations over time to meet the changing missions of Robins. These areas of very localized low-level contamination include a sink and drain, one isolated spot on a floor, and in a long-disconnected ventilation duct.

The initial survey results have led to the conclusions that (a) no health hazards to workers in Building 158 exist due to residual radium contamination; (b) external radiation exposure levels are indistinguishable from natural background levels; (c) concentrations of radon (a decay product of radium) are comparable to outdoor concentrations; and (d) the workplace environment is safe with regards to external radiation levels and radon concentrations.