

**Environmental Quality – Industrial  
Fiscal Year 2010  
Defense Logistics Agency  
Defense Supply Center Richmond**

**Introduction**

Defense Supply Center Richmond (DSCR), located along the I-95 corridor in southern Chesterfield County, Virginia, has been a consistent, dependable supplier of quality goods and services to those defending freedom around the world since it was activated in 1942.

Designated as the aviation demand and supply chain management team within the Defense Logistics Agency (DLA), the Center serves within the Department of Defense (DoD) supply chain as the primary source of supply for nearly 1.3 million repair parts and operating supply items. More than 444,000 of the items we manage are aviation parts, including spares for engines on fighters, bombers, cargo aircraft and helicopters; aircraft and helicopters; airframe and landing gear parts; flight safety equipment; and propeller systems. Defense Supply Center Richmond's core mission is to supply products with a direct application to aviation. These items support over 1,300 major weapons systems utilized throughout the DoD.

With over 600 acres and approximately 120 warehousing, utility and administrative buildings totaling over 6.7 million square feet, DSCR is host for a number of other DoD, Federal and state organizations. The largest of these tenants are the 350-acre DLA Distribution Richmond, DLA Distribution Mapping, and the Virginia Army National Guard Vehicle Maintenance Shop.

The Center and its tenant activities employ nearly 3,000 civilians, service members, and contractor personnel, whose mission is to provide critical material support across the DoD and other Federal agencies.

**Background**

In November 2005 the Environmental Management System (EMS) created and managed by DLA Installation Support at Richmond was externally registered for the requirements of ISO 14001. In 2007 and again in 2010, this system, and the employees that maintain it, successfully passed the external re-registration audit. In February 2006, our EMS was accepted into the Environmental Protection Agency's former Performance Track Program. Although this achievement and recognition program is now abolished, our EMS was the sole DoD representative in this program. After the implementation of our EMS, we quickly began using the formal structure of the management system and its innovative and effective strategies and tools to pursue environmental improvements on Defense Supply Center Richmond.



**Accomplishments**

From the continually reviewed aspects and impacts list within our EMS, and in conjunction with our EMS Environmental Policy Statement, we identified and developed our

2009 - 2010 objectives and targets. We placed particular attention to addressing the various environmental challenges and sustainable practices detailed in Executive Orders 13423 (Strengthening Federal Environmental, Energy, and Transportation Management, January 26, 2007) and 13514 (Federal Leadership in Environmental, Energy, and Economic Performance, October 5, 2009). Specifically, we utilized our EMS to obtain the following benefits for our installation:

**Vehicle Procurement:** During the achievement period, we added five new E85 compatible vehicles and two hybrid vehicles to our managed fleet. This brings the total number of E85 compatible vehicles, (i.e., trucks, passenger cars, and scooters) to over a hundred. This



number is in addition to our existing four hybrid vehicles, which are used for long distance travel off center. One hundred and seven out of the 128 light trucks and passenger vehicles in the DLA Installation Support at Richmond-managed fleet are either E85 compatible or hybrids. During the period, we also added five new Neighborhood Electric Vehicles (NEVs) to our existing fleet of thirty NEVs and electric scooters which are used for transportation to meetings on the installation, as well as utility work vehicles

by our facilities staff. These new NEVs replaced conventional gas powered scooters, thereby reducing conventional gasoline use and greenhouse gas emissions.

**Petroleum Conservation and Alternative Fuel Use:** For the past two years, we have continued to utilize our own 6,000 gallon E85 fuel supply tank. This fuel is available to our compatible government vehicles, as well as to those compatible vehicles owned by the installation's 2,500 employees. During this time frame, more than 70,000 gallons of E85 fuel was utilized in lieu of conventional gasoline. During business travel, additional E85 fuel is purchased where available.



**Green Buildings (Energy Efficiency):** During this achievement period, we spent \$275,000 to replace outdated mercury vapor lamps with high efficiency T5 fluorescent lamps in several of our large warehouses and street lamps. The new warehouses and office lamps were accompanied by motion sensors, which power down the lamps during periods of inactivity. The replaced mercury vapor lamps were recycled in lieu of being placed directly in a landfill, which also minimized environmental liabilities and saved costs. We have seen a savings of about 92% from the use of 450 - watt lights all day to 220 - watt lights only 2 hours of the day. We expect to see a return on cost within the next year.

In addition, during FY 2010, the Defense Supply Center Richmond supported both Executive Orders by replacing 300 400-watt metal halide lamps with high efficiency 151 watt LED (Light Emitting Diode) lights with no decrease in the street and parking lot lighting. Annual energy consumption decreased from 591,000 to 198,414 kilowatt hours. Annual energy cost decreased from \$30,000 to \$10,000. Each of the halide light required \$500 in maintenance over its lifetime to replace



the bulb every 2 years and the ballast every 10 years. The new lights are guaranteed to be maintenance free for fifteen years and have no environmental disposal cost.

**Ceiling Tile Recycling:** During ceiling tile replacement projects, Defense Supply Center Richmond historically disposed of the majority of ceiling tiles as solid waste, taking up valuable space in the landfill. During this achievement period, DLA Installation Support at Richmond and Armstrong Ceilings staffs' efforts avoided disposal of numerous tiles and the associated costs. More than 75,000 square feet of ceiling tiles were placed on pallets, shipped to a nearby recycling facility, and turned into new tiles. The shipments weighed in excess of 150,000 pounds and avoided solid waste disposal costs of \$12,276.

**Recycling Fluorescent Lamps and Mercury:** There are approximately 60,000 fluorescent lamps in use at the Defense Supply Center Richmond. During the last two years, we replaced 26,700 lamps. Rather than disposing of these lamps as costly solid waste, DLA Installation Support at Richmond operated its own regulatory compliant bulb crusher, which captured 0.5 pounds of mercury for recycling, and allowed diversion of the mercury from the landfill.

**Green Purchasing:** During this past year, DLA Installation Support at Richmond worked with DLA Information Operations at Richmond to ensure that purchased computers, laptops, desk tops, and monitors were energy efficient and environmentally preferable by selecting Energy Star-qualified products and Electronic Product Environmental Assessment Tool (EPEAT)-registered products. Additionally, we continued to implement the requirements of our Green Procurement Policy Statement and Green Purchasing Plan by providing contracting officials and contract requirements staff formalized Green Procurement training. During this achievement period, more than 65 percent of this staff and select contractors received updated and targeted outreach training. This training is ongoing and will be tracked within the objectives and targets of our EMS.

**Education and Outreach:** During this achievement period, Defense Supply Center Richmond successfully maintained its designation as a Wildlife Habitat Council's Corporate Lands for Learning (CLL), which provides third party recognition for educational programs. Defense Supply Center Richmond, and Fort Carson, Colorado, are the only two DoD sites to obtain this designation. The Defense Supply Center Richmond program offers an outdoor learning laboratory to share information regarding Defense Supply Center Richmond's natural resource conservation programs and wildlife habitat improvement projects. In addition to working with learners on site, the Defense Supply Center Richmond CLL team does outreach lessons in school classrooms covering water quality, soil science, and conservation. Girl Scouts get involved in water quality protection and watershed lessons on site by labeling the vast majority of the installation's storm water drains to warn residents not to dump in the drains to prevent pollution from reaching a nearby major tributary of the Chesapeake Bay.

**Wildlife Habitat Restoration:** During this past year, we re-graded and planted numerous pieces of vegetation along the banks of the installation's fresh water pond. Not only does this vegetation stabilize the pond's banks and minimize soil erosion, the bushes, shrubs and trees also make attractive homes for local wildlife. In an effort to increase the bio-diversity of this pond, we introduced more than 300 Small Mouth Bass fingerlings. We created green parks in numerous previously impervious areas where structures and buildings formerly existed. The

green parks include landscaping and vegetation specifically designed for habitat restoration. Continual habitat restoration is an important and growing element of our EMS as we work to preserve our natural heritage and to restore and protect the environment.

**Installation Restoration:** During this past year, we have achieved significant cost reductions, accelerated our remediation schedule and ensured minimal long term liability at all of the areas of soil contamination on the installation. The remedies at these sites are protective, require minimal long term maintenance and incorporate ecological enhancements that are extremely beneficial to the environment, and subsequently to the installation. Specifically, during this past year we constructed natural vegetative covers at two contaminated sites that are protective of human health yet also promote ecological and wildlife habitats. These two sites provide educational opportunities, enhanced natural resources, and aesthetic benefits to the installation. We have continued to implement passive low cost yet effective treatment technologies such as in-situ bioremediation and monitored natural attenuation that have resulted in a considerable reduction in the costs to complete estimates for the areas of groundwater contamination. These remedies will achieve a cost avoidance of over \$15 million. At one location, we continue to pursue an innovative passive bio-barrier approach to treat dense non-aqueous phase liquid concentrations of chlorinated solvent contaminated groundwater. This bio-barrier utilizes bark mulch and other wastes obtained free of charge from the City of Richmond, thereby minimizing overall material costs. During this past year, this remediation approach has been extremely successful in reducing the contaminant concentrations in ground water by over two orders of magnitude. Based on the success of our implementation efforts, we have signed Records of Decision (RODs) and implemented remedies for 11 out of the 13 Operable Units on the installation. We anticipate having signed RODs for the two additional OUs within the upcoming two calendar years.

**Stakeholder Involvement.** Our EMS is organized and managed so that it takes into consideration not only the needs of all of the offices within DLA Installation Support at Richmond but also other stakeholders on the installation. Our aspects and impacts and objectives and targets are continually updated to meet the needs of various tenant activities. Further, we have a Restoration Advisory Board that has proven to be an extremely effective means of involving our surrounding community, state and local organizations, and non-governmental organizations within the operations of our installation restoration program. This past year, each quarterly informational meeting has been opened to the public and is often attended by individuals and businesses from throughout the community. Lastly, we learned a long time ago that it was best to work hand in hand with our community rather than hide behind our fencelines. In 2005 we founded the Virginia Regional Environmental Management System (VREMS). At that time, this partnership consisted of four organizations; Defense Supply Center Richmond, the Virginia Department of Environmental Quality, Chesterfield County, Virginia, and the City of Richmond. Virginia.



We worked together to help each other improve the environmental operations of our organization and to pursue various environmental initiatives, either individually or as a partnership. Since 2005, our partnership has grown. During this past year, this regional-public/private community outreach and collaboration added its eighty-fifth partner. Together we continue to share information and jointly work to develop cost-effective, sustainable solutions to individual and regional issues, promote mission

readiness, and measure and track environmental, economic, and community-based improvements. This partnership has taken DLA Installation Support at Richmond's Environmental Management System process and framework one step beyond traditional implementation - reaching out from an individual facility's fence lines to capture a community of participants. Such an innovative approach has supported the building and alignment of collaborative problem-solving throughout the Commonwealth of Virginia and has helped contribute to significant accomplishments within the goals of Executive Orders 13423 and 13514.

### **Judging Criteria**

**Program Management.** The Installation showed tremendous improvement by utilizing our Environmental Management System (EMS) strategies and tools to pursue environmental improvements. Implementing new sustainable practices and continual improvement of sustainable practices already in place has allowed us to obtain improved benefits for our installation. These practices replaced old standard of operations which were providing ineffective stewardship of natural resources. By implementing new practices, the Agency was able to save on energy usage totaling over 591,000 kilowatt hours from the replacements of light bulbs. Continual improvement in the usage of alternative fuel and purchase of alternative vehicles, recycling of fluorescent lamps and mercury, green purchasing, education outreach and our wildlife habitat restoration. Sustainable practice is an integral part of Defense Supply Center Richmond's ISO 14001 externally registered Environmental Management System. This allows us to save on our natural resources as we identify and effectively track program improvements and associated milestones.

**Technical Merit.** Through program review of aspects and impacts listed within our EMS, and in conjunction with our EMS Environmental Policy Statement, we identified and developed our 2009-2010 objectives and targets. We placed particular attention to addressing the various environmental challenges and sustainable practices detailed in Executive Orders 13423 and 13514.

**Orientation to Mission.** The effectiveness of the implemented practices has resulted in the conservations of energy, reducing the use of natural resources and financial savings. These sustainable practices have helped to prolong the life of our natural resources. Our outreach and education is a part of the training we provide to local Girl Scouts and nearby schools. All aspects of Defense Supply Center Richmond's installation Environmental Management System program are pursued in full compliance with all applicable Commonwealth of Virginia and Federal environmental regulators.

**Transferability.** A significant percentage of the practices being pursued within Defense Supply Center Richmond's installation Environmental Management System, are natural and sustainable. They involve the relatively non-technical use of sustainable energy conservation, recycling, alternative vehicle, green purchasing, education and outreach and wildlife habitat restoration. The simplicity of these effective and low cost remedies, and the ease of their sustainment, facilitates their continued use long into the future. The broadness of these remedies also allows for their adoption by other DoD facilities.

Defense Supply Center Richmond's EMS outreach capability includes an external partnership known as the Virginia Regional Environmental Management System (V-REMS). This one of a kind partnership is comprised of more than eighty public and private organizations that routinely communicate and meet to address the environmental needs of its members and of the Commonwealth of Virginia. All DoD facilities within the Commonwealth are members of this partnership. Defense Supply Center Richmond routinely updates this partnership regarding the development, success, and potential transferability of our sustainable initiatives.

**Stakeholder Interaction.** Defense Supply Center Richmond's EMS V-REMS has proven to be an effective means of involving our surrounding community, state and local organizations, and non-governmental organizations since 2005. Each monthly informational meeting is opened to the public and is often attended by businesses and local government. V-REMS gives regular briefings detailing the ongoing projects businesses are pursuing highlighting their challenges and progress. V-REMS have, throughout the past several years, achieved a friendly rapport with the local government and businesses allows for casual and transparent discussions regarding concerns and project status. We have borrowed many lessons learned from the experience of others. We also routinely publish stories highlighting the accomplishment of the various projects in our Today and Tomorrow News which is distributed to our workforce. The stories helps to keep our employees updated regarding the environmental challenges that we have faced, the progress being made, and anticipated future success.