

FISCAL YEAR 2005 SECRETARY OF DEFENSE
US ARMY ENVIRONMENTAL AWARDS NOMINATION



TOBYHANNA ARMY DEPOT

POLLUTION PREVENTION



SUSTAINING
THE ENVIRONMENT
FOR A SECURE FUTURE

INTRODUCTION

Tobyhanna Army Depot (TYAD) is considered the largest, most progressive electronics maintenance facility in the Department of Defense (DoD). Its mission is full-service repair, overhaul and fabrication and support of command, control, computers, communications, intelligence, surveillance and reconnaissance systems. TYAD sustains all branches of the Armed Forces, maintaining critical US Air Force (USAF) “go-to-war” ground communications-electronics systems, and USAF and US Navy tactical missile guidance and control systems. TYAD ensures that war fighters have critical systems and support to succeed in the global war on terror.

Strategically located in the Northeastern Pocono Plateau region of Monroe County, Pennsylvania, the 1,296-acre depot is bounded by state parks and game lands. TYAD manages 161 acres of wetlands and the headwaters of Hummler Run, a high-quality cold water fishing stream.

“Tobyhanna Army Depot is one of our largest employers in Monroe County and has always been a leader in implementing environmental efficiency.”

- Mr. Robert Phillips,
President/CEO of the
Pocono Mountains
Chamber of Commerce

Although no federally listed threatened or endangered species reside at TYAD, the Natural Resources Program supports stewardship for seven state-listed rare species, such as the Osprey.

Memories of past environmental impacts from the anthracite coal mining era make these natural resources precious to the regional community, which has transitioned to a light industry and tourism based economy. As the region’s leading industrial center and employer, TYAD has an annual economic impact of \$1.8 billion. It houses 27 tenant organizations, employs about 4,400 workers from 10 counties and serves as home to 200 military personnel and family members.



BACKGROUND

Tobyhanna Army Depot became ISO 14001 third-party registered in November 2003 and maintains this registration. TYAD is also third-party registered in ISO 9001, is an Occupational Safety and Health Administration Voluntary Protection Program Star Site, employs Lean Six Sigma process changes and incorporates a team-directed approach to management.

Environmental Challenges

TYAD faced the challenge of meeting 40 percent and 20 percent increases in mission workload in FY 2004 and FY 2005, respectively. The depot has planned to ensure that sufficient environmental permits and utility capacity are available to accept the new workload by meeting all permit and regulatory requirements. The depot is a Clean Air Act Title V facility, has a Resource Conservation and Recovery Act (RCRA) Part B permit for hazardous waste (HW) storage, maintains a Safe Drinking Water Act permit and manages a National Pollutant Discharge Elimination System permit for industrial and municipal treatment and storm water flows. The depot also manages over 100 underground/aboveground storage tanks. The depot did not receive any official notices of violation during the reporting period. (See attached. “In Viol” for RCRA related to interpretation of when HM becomes HW. TYAD immediately changed process; however, it took several months to change the Enforcement and Compliance History Online.)

Organization, Staffing and Management

The Environmental Management Division (EMD) operates within the Directorate of Industrial Risk Management, which reports to the Commander (CO). The division’s 16 employees provide expertise in pollution prevention (P2), National Environmental Policy Act implementation, hazardous materials

(HM), recycling, buy-recycled (green procurement), air and water quality, energy conservation, HW, environmental restoration, pest management, solid waste, drinking water and natural/cultural resources. The CO holds Quarterly Environmental Quality Control Committee meetings, where the directors and CO provide direction to ensure the maintenance of a high level of environmental stewardship. Each directorate has one or more ISO 14001 representatives that meet quarterly with the Environmental Coordinator to manage the Environmental Management System (EMS).

Conformance with DoD and EMS Policy and Guidance

On 3 November 2003, TYAD became ISO 14001 third-party registered. The depot continues to maintain this high environmental stewardship status. TYAD operates the ISO 14001 process with the EMS manual and the CO's Environmental Policy. All employees have ISO 14001 awareness training and participate in the ISO 14001 process. Analysis of environmental impacts and aspects is performed regularly by each organization as part of the ISO 14001 process, and since the initial analysis, great advances have been made in mitigating these impacts. The biggest environmental impacts for TYAD were determined, and several ISO 14001 Objective and Target (O&T) teams were formed from employees throughout the depot to focus on each of these impacts, including O&T teams for the industrial wastewater recycling plant, sandblast and air emissions.

Green Procurement Program

TYAD implemented the Recycling Program to conserve natural resources and landfill space, and to reduce refuse removal costs. This enables the program to be operated to the benefit of the environment as well as the depot mission. Buying recycled, also known as green procurement, is a part of this program. All depot employees are responsible for buying recycled-content items. Recycled-content products regularly purchased by TYAD employees range from office products, such as copier/printer paper, file folders and printer/toner cartridges to vehicle products, such as re-refined lubricating oils.



TYAD's environmental intranet page provides employees with information to maintain both ISO 14001:2004 and environmental compliance.

Stakeholder Involvement and Community Outreach

TYAD participates in various environmental programs involving and educating their 4,000+ employees and the surrounding community. TYAD encourages employees to bring in their recyclables from home and deposit them in county-owned recycling bins. The county annually receives credit for state grants from all depot recycled material.

Not only did TYAD participate with Monroe County, other businesses, industries and offices, in a "Clean Your Files Week" paper-recycling program, but the depot also launched a pilot program that provides convenient means for depot personnel to recycle their personal printer cartridges directly from their home or they can bring the cartridges into work to recycle.

TYAD leaders realize the importance of educating their employees and the public on environmental issues. Environmental awareness training is provided to all employees via the depot's public address and visual information system, newspaper, e-mail, intranet, employee bulletins, weekly staff meetings and environmental displays. Environmental awareness is also provided to the public via TYAD's

Internet page, news releases, annual Earth Day displays and environmental management displays during open house at TYAD.

TYAD also participates in various P2 environmental advocacy organizations. Their environmental management innovation is supported through active membership in the Pollution Prevention/Energy Efficiency (P2E2) Round Table of the Pennsylvania Association of Environmental Professionals and the Pocono Mountain Chamber of Commerce Environmental Council. A representative from TYAD's EMD also sits on the Monroe County Solid Waste Advisory Committee. TYAD also became a charter member of the Pennsylvania Environmental Partnership, which consists of military installations, the Environmental Protection Agency (EPA) Region III and Pennsylvania Department of Environmental Protection (PADEP) personnel working together to improve environmental conditions within the state. A representative from TYAD also participates in the Environmental, Health and Safety module of the Army Materiel Command's Logistics Modernization Program (LMP) to transition HM tracking and monitoring with the LMP.

Further community outreach includes a quarterly, voluntary, after-hours Adopt-A-Highway cleanup program. The proceeds from the recycling and sale of aluminum cans are donated to Operation Santa Claus, while the proceeds of sales of other recyclables support TYAD's morale and welfare functions, pay recycling employees' salaries and support other beneficial depot projects.

EMD personnel provided several ISO 14001 briefings to local organizations and other federal facilities. The briefs explain how the ISO 14001 process is implemented. Also presented at the briefs are depot continuous environmental improvement initiatives.

PROGRAM SUMMARY

The objectives of the P2 Program at TYAD are far-reaching and address various environmental issues including water pollution and conservation, HM disposal and air emissions. The depot has also initiated projects to validate assorted environmental technologies such as a vegetative roof and a fuel cell generator. These efforts are made to reduce mission operating costs, which ultimately help the war fighter. Several of the more significant reductions are shown in the Reductions Achieved section.

The ISO 14001 Industrial Wastewater Recycling Plant O&T team focused on reducing metal discharges from plating operations. This team oversaw the commissioning of the P2 projects associated with the Industrial Operations Facility (IOF) plating shop. Projects included implementing the use of microfiltration of acid baths to extend bath life and recycling of rinse waters using reverse osmosis and other filtration methods. Concentration on water conservation included installation of a water chiller at the IOF, so that hot byproduct water may be reused.

Additionally, in coordination with PADEP, a Source Water Assessment Plan has been designed to identify and correct potential contaminated areas within the depot's watershed. Increased monitoring of watersheds is one aspect employed under this plan. This project also has Force Protection ramifications, which greatly improves the security of the depot's drinking water system.

"Since 1996, Tobyhanna Army Depot was a founding member and strong supporter of Pennsylvania's Northeast Pollution Prevention and Energy Efficiency Roundtable. They are always willing to share information with other organizations and businesses through this forum and currently co-chair the Roundtable. The Depot is not only responsible for their own environmental management systems and accomplishments, but also provide valuable ideas that help other companies to increase their bottom line, improve product quality, increase production and energy efficiencies and reduce environmental liabilities. Their continuing efforts to promote environmental awareness and environmental progress, not only for the sake of their own organization, but for the benefit of the region as a whole, makes them an asset to the northeast region."

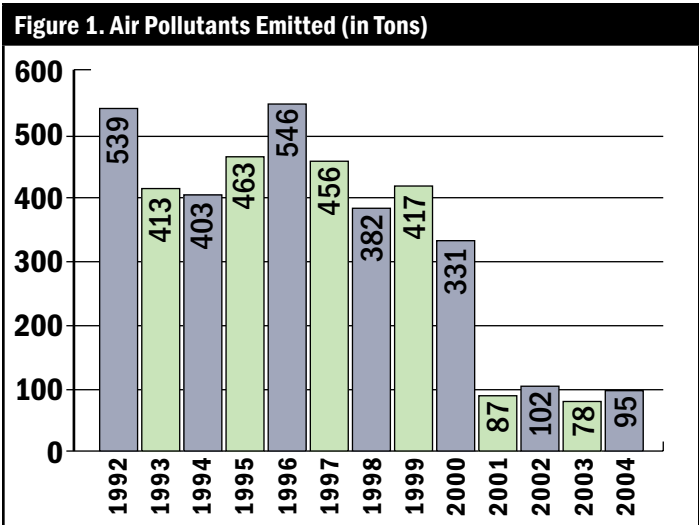
- Ms. Janet Warnick, Pennsylvania Department of Environmental Protection, Northeast Regional Office, Office of Energy and Technology Deployment

Improved Material Management

TYAD has demonstrated improvements in handling HM using the Hazardous Material Management System to track usage, HW generation and disposal, and to exceed environmental regulatory reporting requirements. The ISO 14001 Air Emissions O&T team is managing the installation of a new HM pharmacy at the large item paint facility to reduce HM usage and reduce volatile organic compound (VOC) emissions by intensively managing shelf-life materials. Low VOC-containing paints are being used to reduce surface emissions and low nitrogen oxides natural gas burners in boilers further reduced emissions. Under this system, HM is delivered to a storage facility and receives a bar-coded tracking label via 14 HM pharmacies. Authorized Use Lists are prepared for each organization, which informs HM pharmacy operators what HM each employee is trained to use, and warns of possible unauthorized transactions. TYAD is partnering with DoD, Oracle, Intel, and others to develop Radio Frequency Identification technology for hazardous material application. This technology can have far-reaching impacts in public safety, incident response, automation and more. Phase II of the ChemSecure project will include an automated hazardous material pharmacy/hazardous waste generation point at TYAD.

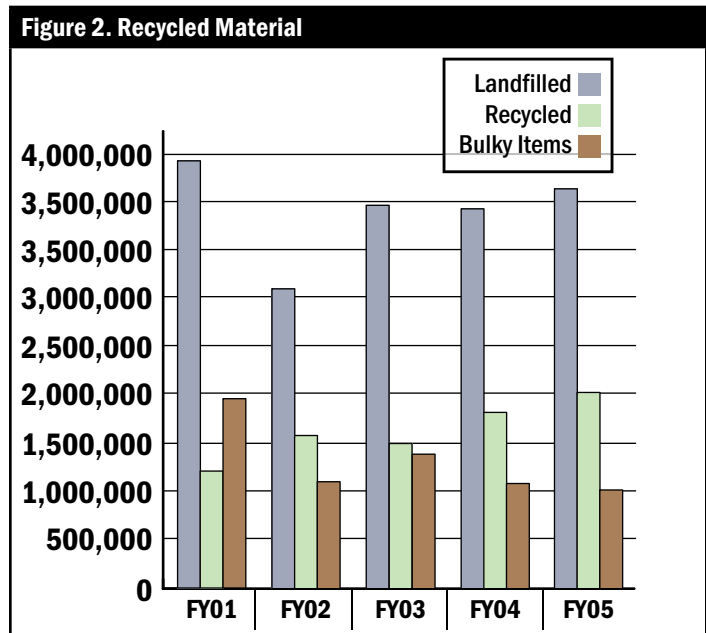
The ISO 14001 Sandblast O&T team developed procedures to reduce emissions from sandblasting and painting operations. An enclosure for sandblasting dust collectors is in construction (should be completed in FY 2006). The new enclosure will substantially reduce weather-related equipment failure, as well as provide containment for potential spills or releases to the atmosphere.

In September 2005, sustainable installation projects were started using funding approved under the Joint Services Initiative (JSI). A vegetative roof is being installed over one wing of the main administrative building to validate the benefits of this technology. Storm water (quantity and quality) and energy savings will be measured by comparing two wings of the same building. This project has the potential to double or triple the useful life of the roof. JSI funding was also approved for a fuel cell generator which will provide backup electrical power to operate the environmental offices to validate the reliability of fuel cell power generation.



Recycling Program

The Recycling Program has reduced the amount of solid waste disposed of in landfills by 40.6 percent during FY 2004 and 42 percent during FY 2005. TYAD recycles the usual materials, such as white paper, corrugated cardboard, glass and plastics, as well as unusual items, such as used safety shoes, CD-ROM discs and plastic stretch wrap. It encourages employees to reduce the amount of solid waste generated by using electronic mail and double-sided copies and reusing items such as pallets, recharged toner cartridges and retread tires, just to name a few.



REDUCTIONS ACHIEVED

Technologies implemented by the various ISO 14001 O&T teams and other depot P2 initiatives

have allowed TYAD to reduce environmental impacts in various ways, demonstrating a progressive and advancing environmental program that includes top-quality management of depot-level industrial processes.

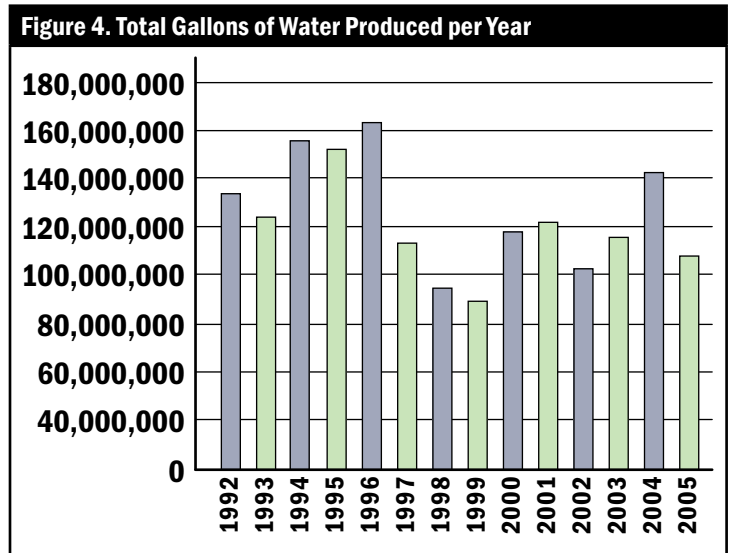
Figure 3. Pollution Prevention (P2) Initiative Reductions and Cost Savings

P2 Initiative	Reduction Achieved	Cost Savings
Recycling of Rinse Waters	Recycles over 900,000 gallons of rinse waters each month, reducing the need to draw this water from groundwater.	Over \$100,000 saved annually.
Air Emissions from Sandblasting and Painting	Surface coating emissions have been reduced almost 50 percent (from 27,398 pounds to a projected 14,090 pounds).	Saved in annual emission fees \$313.
Reuse of Hot Byproduct Water	Saves in excess of 2.1 million gallons of depot water each month.	\$91,494 saved in the first five months of operation.
Recycling	Achieved recycling rate of over 40 percent, a 58,691 cubic yards solid waste reduction.	Saved the depot \$291,186.03 in disposal costs and generated >\$430,000 for the depot.

Filtration/Coalescing systems were purchased to recycle unusable diesel from military vehicles. So far, 350 gallons of unusable fuel has been salvaged. Another unit is being used to clean mineral oil for reuse.

In addition, the P2 program achieved less quantifiable savings, including the development of a Source Environmental Protection Plan designed to identify and correct potential contaminated areas within the depot’s watershed, and the initiation of two sustainable installation projects (a vegetative roof and fuel cell generator). Additional accomplishments include improvements in overall HM management, encouraged by the ISO 14001 process, allowing the closure of a 60,000 square foot facility formerly used to store unusable (expired or no longer needed) HM. TYAD also became the first federal facility to enter the EPA National Waste Minimization Partnership Program with goals of eliminating lead solder and reduce the use of cadmium by 52 percent by CY 2008.

Other DoD and local organizations have easily adopted several of the depot’s P2 programs, such as EMS implementation, the recycling program, the use of HM tracking and HM pharmacy and the use of less harmful HM. Other programs, such as the vegetative roof/fuel cell projects and compliance monitoring procedures, can be adopted and are shared with others through forums already mentioned. For example, hundreds of people have been briefed on TYAD’s ISO 14001 implementation.



CONCLUSION

TYAD’s mission presents environmental aspects and challenges similar to those of major manufacturing and industrial facilities, while operating in a four-season tourist and resort region. TYAD meets these challenges to excel as a leader in environmental quality and pollution prevention through a mature EMS that is integral to the fabrication/repair of communications and electronic equipment. The depot successfully created and nurtures a workforce culture that promotes and integrates environmental stewardship responsibilities into its mission to support the nation’s war fighters every day. TYAD continues to achieve environmental excellence and to demonstrate devotion to mission sustainability, EMS implementation and community environmental stewardship. TYAD continues to implement innovative and effective programs that protect and improve the environment, increase productivity, save money and support the war fighter.

On the cover: Entrance to Tobyhanna Army Depot, PA.