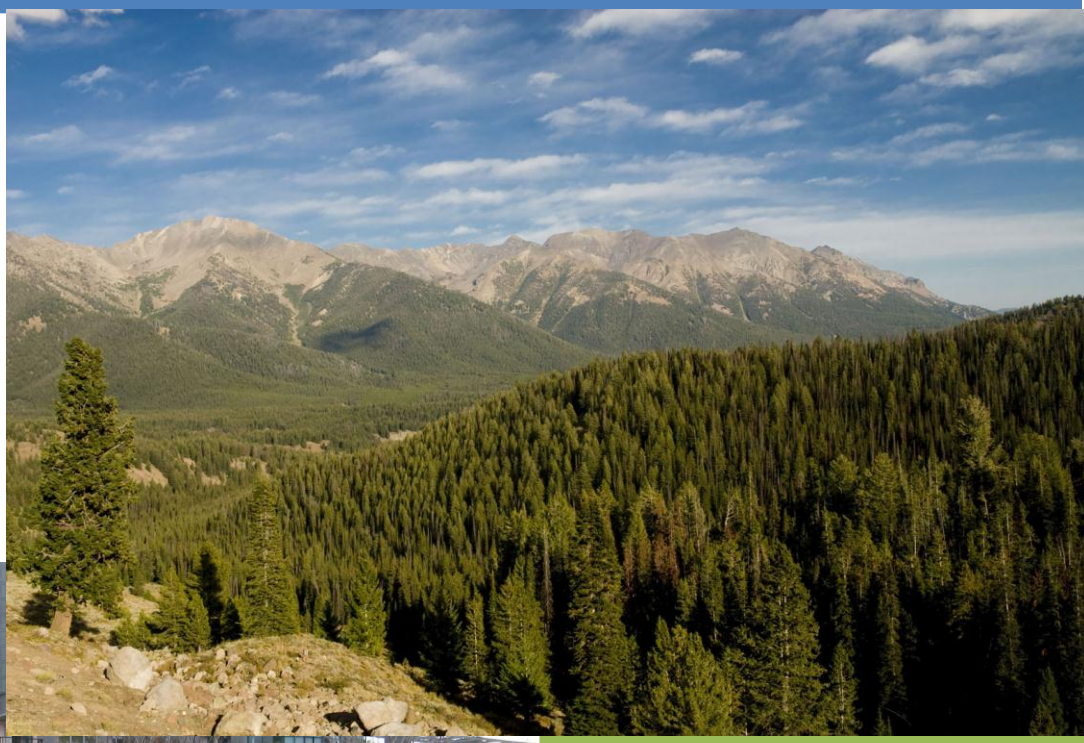
United States Environmental Protection Agency

PROTECTING COMMUNITIES AND RESTORING LAND

OSWER FISCAL YEAR 2012 ACCOMPLISHMENTS REPORT



February 2013

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Message from the Assistant Administrator for the Office of Solid Waste and Emergency Response

I am pleased to present the Office of Solid Waste and Emergency Response's (OSWER) Fiscal Year 2012 (FY12) Accomplishments Report. OSWER, in partnership with other federal agencies, states, tribes, local governments, and communities, strives to preserve land and clean up communities to create a safer environment for all Americans. Wastes on land can migrate to the air, groundwater, and surface water, contaminating drinking water supplies; causing acute illness or chronic diseases; threatening human health and ecosystems in urban, rural, and suburban areas; and inhibiting economic opportunities on and adjacent to contaminated properties. Furthermore, impacts from climate change present additional challenges to land cleanup, waste management and emergency response.

OSWER's work touches on key priorities of the Administration including clean energy and domestic fossil fuel energy development, job training, job creation, manufacturing and economic development. OSWER's programs also contribute to the mitigation of greenhouse gas (GHG) and the adaptation to climate change impacts. It has been estimated that approximately 42 percent of GHG emissions are attributable to materials management activities and approximately 16 percent are related to land management choices. Leveraging materials and land management programs can achieve measurable GHG reductions.

The attached report summarizes OSWER's significant achievements in FY12 and our progress in meeting our 30 annual performance measures under the EPA's Strategic Plan. It focuses on three facets of our work: preserving land, cleaning up and restoring land, and responding to emergencies.

Preserving Land

In FY12, OSWER met all of its commitments in our hazardous waste, petroleum, and oil spill prevention programs. Through these efforts we ensure proper management of hazardous waste and petroleum products, and help prevent and prepare for oil spills, chemical accidents, and other emergencies to protect the health of communities. OSWER, in partnership with our state co-regulators, currently oversee and manage permits for 10,000 hazardous waste units at 2,466 facilities, and set standards for approximately 580,000 federally-regulated underground storage tanks in order to prevent potentially dangerous releases. In FY12 confirmed releases from underground storage tanks fell six percent. Since 2007 the annual number of confirmed releases has fallen 25 percent. OSWER and other Agency programs conduct prevention, preparedness, compliance assistance, and enforcement activities for more than 640,000 oil storage facilities through its spill prevention program and 13,000 Risk Management Program (RMP) facilities which handle highly toxic and flammable chemicals. In FY12, the number of accidents at RMP facilities decreased almost 15 percent from FY11.

In FY12, OSWER made significant progress implementing the Sustainable Materials Management (SMM) framework to encourage approaches that consider the human health and environmental impacts associated with the full life cycle of the materials. Efficiencies gained in SMM approaches can capture the economic benefits of less energy use, more efficient use of materials, more efficient movement of goods and services; as well as, conservation of water and reduced volume of toxicity of waste. FY12 saw growth in the three SMM Challenges: the Electronics Challenge, the Food Recovery Challenge, and the Federal Green Challenge. In addition, in FY12 EPA issued a proposed amendment to the Nonhazardous Secondary Materials Rule. As a result of this amendment, materials that were otherwise destined for the landfill can now be used for energy recovery.

Restoring Land

OSWER has made substantial progress restoring the land over the past year. OSWER's land cleanup programs track over 520,000 sites and 22 million acres; this translates to almost 22 percent of all developed land in the United States. In FY12, the Superfund and Brownfields Programs exceeded their site assessment targets, setting the stage for protective cleanups and redevelopment, as well as providing the community with valuable information regarding the environmental condition of sites. The Resource Conservation and Recovery Act Corrective Action and Superfund Programs addressed any unacceptable exposures and eliminated acute risks at more than 180 sites, while continuing to pursue long-term permanent cleanups. The Brownfields Program's funding for cleanup and redevelopment activities leveraged $1.2 billion and over 5,500 jobs. As of FY12, OSWER and its partners made over 2.4 million acres (over 428,000 sites) available for communities to reclaim for commercial, industrial, ecological, recreational, residential and other purposes. Once a property is cleaned up and redeveloped, the reuse results in new income to the community in the form of taxes, jobs to local residents or provides recreational or other services to make the community a better place to live. In FY12, OSWER's RE-Powering America's Land Initiative released numerous tools to facilitate siting renewable energy on contaminated sites including solar and wind decision trees and the *Handbook on Siting Renewable Energy Projects While Addressing Environmental Issues*.

Responding to Emergencies

Every year, more than 30,000 emergencies involving the release (or threatened release) of oil and hazardous substances are reported in the United States. Our first priority during these emergencies is to control danger to the public. OSWER's role is a fundamental part of the national response system and is heavily relied upon by all levels of government to deal with any environmental emergency. In general, responsibilities are spread across federal, state, local and tribal governments, depending upon the size and type of the emergency and involve the environmental, emergency management, public safety and public health agencies of all levels of government. OSWER completed or oversaw the completion of more than 425 removal actions in FY12, including removals resulting from natural disasters or industrial contamination. These cleanups addressed a wide range of contaminants that posed a threat to human health and the environment.

Engaging the Community and Working for Environmental Justice

As OSWER and its partners produced these outcomes, we strove to be transparent and deliver information that communities could use to participate meaningfully in the decision-making process. Through the Community Engagement Initiative, many existing or new community engagement tools and processes have been updated or developed. For example, OSWER established the Technical Assistant Needs Assessment to aid project managers in determining if communities have any technical assistance needs and what these needs may be.

To ensure that environmental justice (EJ) is considered in EPA's regulatory decisions, OSWER took the lead in a cross-agency workgroup to integrate EJ into rules. As a part of that effort, and in support of OSWER's EJ Workplan, OSWER developed an intranet-based tool that combines the key EJ questions and tools into the Action Development Process for use by all agency rule writers. The Office of Environmental Justice has incorporated this site with additional tools on its own intranet page.

I am proud of OSWER's dedicated and skilled work force and our accomplishments in FY12. Working collaboratively with other federal agencies, states, tribes and communities we can use our energy and expertise to improve human health and protect and restore land for all Americans.

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Introduction

In Fiscal Year 2012 (FY12) the Office of Solid Waste and Emergency Response (OSWER) continued to advance the protection and restoration of land. This document tells the story of OSWER's year, including new program initiatives, activities of note in long-term programs, and our progress in meeting our 30 annual performance measures.

The Environmental Protection Agency (EPA) and its state, tribal and local government partners strive to protect the land from contamination by helping to ensure that solid and hazardous waste, as well as hazardous materials are managed properly. When contamination does occur, EPA and its partners clean up communities to create a safer environment for all Americans. The presence of uncontrolled hazardous substances in soil and sediment can cause human health concerns, threaten healthy ecosystems, and inhibit economic opportunities on and adjacent to contaminated properties. Waste on the land can also migrate to groundwater and surface water, contaminating drinking water supplies. EPA leads efforts to conserve resources and prevent future land contamination through sustainable materials management and ensuring proper management of waste and petroleum products. EPA prepares for and responds to environmental emergencies and promotes redevelopment of contaminated areas and emergency preparedness and recovery planning.

The Accomplishments Report

This report highlights OSWER's accomplishments in FY12 under the broad goals of OSWER's work: Preserving Land, Restoring Land, and Preparing for and Responding to Emergencies. This document is divided into three sections, to reflect these broad goals.

- *Preserving Land* describes EPA's continued successes in preventing future environmental contamination and protecting the health of communities by considering the human health and environmental impacts associated with the full life cycle of materials. The section also describes how EPA programs and supporting enforcement activities ensure appropriate management of generated wastes and petroleum products, and preventing and preparing for accidental chemical releases at industrial facilities.
- *Restoring Land* describes how EPA is making strides in assessing and cleaning up contaminated sites to maintain or put them back into productive use. The section demonstrates how EPA is using the relevant tools available in each of the cleanup programs, including enforcement, to better leverage resources.
- *Preparing for and Responding to Emergencies*, describes how EPA helps respond to environmental emergencies.

For each focus area, this document provides an overall discussion of EPA's work in that area, a list of the EPA programs working toward achieving that goal, and the scope of the problem. Within each of these three sections, specific activities are highlighted in three ways: what we do, why we do it, and how well we have performed. FY12 performance is evaluated by looking at the results achieved under a focused set of annual performance measures tied to EPA's strategic plan goals, as well as other quantitative and qualitative descriptions of accomplishments.

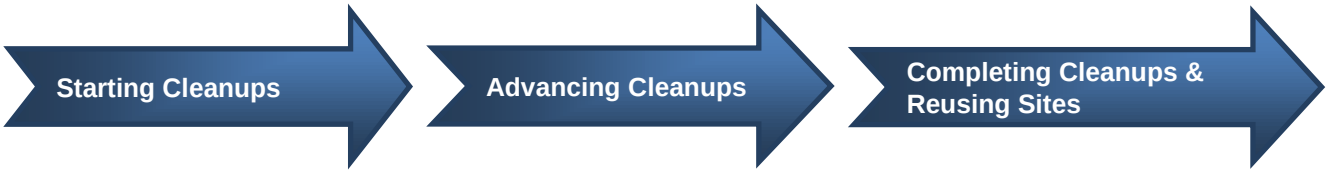
Building a stronger OSWER through collaboration, evaluation and enhanced program managment

In FY12, OSWER focused on five approaches to improve the effectiveness, efficiency, transparency and delivery of services for its core programs. An overview of each approach is presented below and related accomplishments are presented throughout the document.

Addressing Cleanup Programs in an Integrated Way

In an effort to improve the accountability, transparency, and effectiveness of EPA's cleanup programs, in 2010, the EPA initiated a three year strategy called the Integrated Cleanup Initiative (ICI). The ICI integrates and leverages the Agency's land cleanup authorities to address a greater number of sites, accelerate cleanups where possible, and put those sites back into productive use while protecting human health and the environment. EPA is also focusing on enforcement activities and continues to seek accountability from those responsible for cleaning up contaminated sites. The 2010 ICI Implementation Plan identified specific actions along the three broad phases of the cleanup continuum (figure 1). The majority of these actions have been completed and EPA will now move to take the outcomes of those actions into the day-to-day land based cleanup work. (http://www.epa.gov/oswer/integratedcleanup.htm)

Figure 1. The Cleanup Continuum



Engaging Communities in Decision Making and Working Towards Environmental Justice

EPA continued its implementation of the Community Engagement Initiative (CEI) to help refocus and renew its vision for community engagement and improve practices that help communities meaningfully participate in environmental decision making. OSWER has made significant strides to make community engagement a higher priority through process improvements, new tools and techniques, and sharing of expertise and successful practices. Meaningful engagement with the full diversity of the community will strengthen EPA decisions and actions with local knowledge, and help the community to develop and coordinate plans and resources. Through the CEI, many existing or new community engagement tools and processes have been updated or developed. EPA has engaged in a number of other initiatives designed to enhance our programs to more fully engage the community in dialogue and collaboration throughout the decision making process. (http://www.epa.gov/oswer/engagementinitiative/)

To help integrate environmental justice into EPA's day to day activities, OSWER completed an office - wide environmental justice (EJ) workplan. This workplan identifies opportunities to better integrate EJ into its programmatic and regional decision-making through the use of rulemaking, policy, screening and legal tools. For example, OSWER convened an office-wide EJSCREEN workgroup to identify issues with

the tool and developed a Compendium of how OSWER will use its authorities to address overburdened and underserved communities by identifying impacts from stressors that burden these communities. OSWER also created a catalog of EPA funding opportunities which identifies resources which can help communities address human health and environmental issues to promote equitable development. (http://www.epa.gov/compliance/environmentaljustice/plan-ej/index.html)

Strengthening State and Tribal Partnerships

EPA also continues to work to strengthen our state and tribal partnerships to achieve our mutual environmental and human health goals. Many of EPA's programs were designed by Congress to be delegated (or authorized) to states. The relationship between EPA and the states under delegation is intended to be a partnership. States are best placed to address specific problems as they arise on a day-to-day basis, and EPA strives to strengthen and assist state programs. As a result, states directly contribute to the success of EPA's programs. With budget pressures on state and tribal environmental and human health programs, EPA has worked with our partners to ensure that citizens continue to live in safe and environmentally protected communities.

Focusing on Use of Evidence and Evaluation

EPA is also finding ways to use data, evaluation and analysis as a means to improve its programs. We are using evidence and the results of evaluations to make policy changes to improve our programs' effectiveness and demonstrate program impacts. By analyzing what works and what does not work, EPA is able to continuously improve its performance. In addition, EPA is taking steps to improve the quality of our data and associated systems.

Over the past several years the Office of Underground Storage Tanks, the Office of Brownfields and Land Revitalization, the Center for Program Analysis, the Federal Facilities Restoration and Reuse Office, and the Office of Superfund Remediation and Technology Innovation have undertaken evaluations. Two EPA-sponsored studies, published in FY12, used rigorous statistical analysis to estimate the economic impacts of the Superfund and Brownfield's cleanup programs. Detailed results for these analyses can be found in the Restoring Land Section of this document. Outside research on our programs, such as a recent study on birth anomalies near Superfund sites, also helps inform EPA's work. Collectively, this data is being used to gain a greater understanding about how our programs are impacting the communities we serve.

Leveraging Public and Private Partnerships and Resources

This report provides examples of how our Sustainable Materials Management (SMM) and Brownfields programs are undertaking public and private partnerships to leverage resources. Through these programs we are establishing specific strategies and partnerships to maximize environmental benefits and economic opportunities. For example, SMM launched three challenges involving partnering with industry and other federal agencies to voluntarily increase reuse, recycling, and overall sustainability. The Brownfields Program completed year two of the area-wide planning program (AWP) which assists communities in responding to brownfield challenges, particularly where multiples sites are in close proximity, connected by common infrastructure, and limit the economic, environmental, and social prosperity of their surrounding community. AWP is proving to be the critical first step, allowing communities to address environmentally-impacted sites in a coordinated and community-driven way, leading to revitalization, business development, and job opportunities, as well as quality of life enhancements.

Preserving Land

A central mission of EPA is to conserve resources and prevent land contamination by:

- Reducing waste generation;
- Increasing secondary materials reuse and recycling;
- Ensuring proper management of waste and petroleum products; and
- Reducing chemical risks and releases.

This section will review our programs, including related enforcement efforts, and demonstrate how they have achieved significant strides in preserving land and preventing releases to the environment. This section reviews EPA's programs in four areas: Managing Materials Sustainably; Managing Hazardous Waste; Preventing Petroleum Releases; and Reducing Chemical Risks and Releases.

OSWER Prevention & Preparedness Programs

The **Resource Conservation and Recovery Act (RCRA) Solid Waste Program** encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste. A core function of this program is to look for and incentivize more sustainable ways to manage our materials, prolonging the life of materials as usable commodities for as long as possible.

The **RCRA Hazardous Waste Program** issues comprehensive, national regulations, defines solid and hazardous wastes, and imposes standards on anyone who generates, recycles, transports, treats, stores or disposes of hazardous waste. This program also monitors the movement of hazardous waste in and out of U.S. borders and works to help ensure the waste that is exported is properly recycled or disposed of.

The **Underground Storage Tanks Prevention Program** works with state, tribal and inter-agency partners to set and implement standards to prevent and detect releases from underground storage tanks, thereby reducing cleanup costs while protecting human health and the environment.

The **Oil Spill Program** protects U.S. waters by preventing, preparing for and responding to oil spills. Section 311 of the Clean Water Act and the Oil Pollution Act of 1990 provide EPA with the authority to establish a regulatory program for preventing, preparing for and responding to oil spills that occur in navigable waters of the United States.

The **EPA Chemical Emergency Preparedness and Prevention Program** is the national regulatory framework to prevent, prepare for and respond to catastrophic accidental chemical releases at industrial facilities throughout the United States.

What is the Universe?

EPA regulates and/or oversees facilities across the United States. For example,

- EPA and states oversee and manage Resource Conservation and Recovery Act (RCRA) permits for 10,000 hazardous waste units at 2,466 facilities. An estimated three million people live within a mile of these facilities.
- Across the United States there are approximately 584,000 federally-regulated underground storage tanks at 214,000 sites. This represents nearly every gas station across the country, most non-retail

petroleum fueling stations such as at bus depots and car rental facilities, and facilities with underground storage for their emergency generators.

- EPA has identified approximately 13,000 Risk Management Program facilities nationwide. These facilities represent the largest identified stockpiles of highly toxic and flammable industrial chemicals in the United States.
- EPA estimates that over 640,000 facilities are covered by the Spill Prevention, Control, and Countermeasure (SPCC) rule. These facilities use, store, or produce oil or petroleum products. They may include, but are not limited to, vehicle maintenance and refueling facilities, oil drilling and production facilities, and waste treatment facilities. Approximately 4,400 of these facilities are required to have Facility Response Plans as a discharge of oil from any of these facilities could cause substantial harm to the environment.

Managing Materials Sustainably

Preserving Land

What is it?

Historically, much of the nation's resource conservation efforts have focused on decisions to reuse or recycle materials that would otherwise be disposed as waste. While these remain important resource conservation practices, they only represent a fraction of all the opportunities available to conserve resources. Through a Sustainable Materials Management (SMM) approach, EPA, in partnership with states, local governments, and the private sector/manufacturing, is helping change the way our society protects the environment and conserves resources for future generations. Building on the familiar concept of Reduce, Reuse, Recycle, SMM is an approach to reduce negative environmental impacts across the life cycle of materials from resource extraction, manufacturing, use, reuse, recycling and disposal. Effeciencies gained in SMM approaches can capture the economic benefits of less energy use, more efficient use of materials, more efficient movement of goods and services; as well as, conservation of water and reduced volume of toxicity of waste. This approach changes how we think about environmental protection and recognizes the impacts of the vast amount of materials we consume.

EPA supports addressing environmental challenges with a whole-systems approach, leveraging cross-program efforts and tools, and collaborating with external parties and stakeholders. EPA has developed and implemented a strategically targeted SMM Program with national impact. The SMM program is currently centered on four focus areas: responsible management of used electronics; sustainable food management; reducing the environmental footprint of the federal government by leading example; and strengthening partnerships with state and local governments.

EPA is collaborating with other federal agencies, businesses, and schools in key SMM Challenges. EPA has chosen three Challenges to demonstrate how the sustainable materials concept is moving the U.S. towards a more sustainable future: the SMM Electronics Challenge; the Food Recovery Challenge; and the Federal Green Challenge.

Why is EPA doing this?

EPA's commitment to the environment includes preserving our nation's natural resources—including fossil fuels, minerals, precious metals and other renewable and non-renewable resources. Conserving these materials requires attention at every step of the manufacturing process to prevent the unnecessary use of materials, decrease the use of toxins and prevent materials from going to landfills. A 2012 report estimated that human consumption of natural resources has increased to 150 percent of global capacity.[1] By 2050, world consumption will reach 140 billion tons of minerals, ores, fossil fuels and biomass per year unless economic growth is decoupled from the rate of natural resource consumption. [2]

[1] WWF. 2012. Living Planet Report 2012, WWF International, Gland, Switzerland.

[2] UNEP. 2011. Decoupling natural resource use and environmental impacts from economic growth, A Report of the Working Group on Decoupling to the International Resource Panel.

For example, every year, Americans generate more than 34 million tons of food waste, most of which ends up in landfills. While composting, instead of disposal, reduces the impact of this waste by "closing the loop," it does not ensure that the resources used to grow, process and transport food are not wasted when good food goes uneaten. About 300 million barrels of oil and more than a quarter of the freshwater consumption in the U.S. are used to grow the food that goes uneaten. In terms of greenhouse gases (GHGs), food accounts for 14 percent of GHGs emitted in the U.S. over its lifecycle.[3] Wasted food means wasted resources, which is why source reduction – preventing waste from being created in the first place – is the top preferred strategy in EPA's Food Recovery Hierarchy. Integrating SMM into the business practices of our stakeholders, on a broad, national level is the only way for the U.S. to conserve its own natural resources and stay competitive globally.

Accomplishments

Safely Managing Used Electronics

Increasing the safe and effective management of used electronics is one of the goals of the Administration's National Strategy for Electronics Stewardship. Mismanagement of used electronics is not only potentially harmful to human health and the environment; it is a missed opportunity to recover valuable, often scarce resources that can be returned to the electronics supply chain to make new products. Consistent with the actions identified in the Strategy, in FY12 EPA launched the national *SMM Electronics Challenge*, which focuses on electronics manufacturers and retailers ensuring that 100 percent of their used electronics are managed by third-party certified refurbishers and/or recyclers in the U.S. In addition, participants also commit to work towards increasing the total amount of used electronics collected and recycled and to publicly report information on their collection programs and recycling data. At the end of FY12, 10 national electronics manufacturers and retail companies enrolled in the *SMM Electronics Challenge*, representing thousands of retail facilities across the United States. In addition to their retail facilities, each of the participants has a significant online presence, including websites with instructions about how the public can recycle their electronics.

Promoting Sustainable Food Management

EPA launched the *Food Recovery Challenge* to reduce the creation of food waste. Through the Challenge, grocers, universities, stadiums and other venues are rethinking business as usual by working to sustainably manage surplus food through source reduction, donation and composting. The Challenge encourages these groups to join the challenge and learn strategies on leaner purchases and diverting surplus food away from landfills. For businesses, food source reduction does not mean selling fewer meals, but rather making operational changes that ultimately reduce purchasing costs, staff time and disposal fees. Donating surplus food to hunger-relief organizations helps provide healthy meals to those in need in our communities. At the end of FY12, 120 total participants were enrolled in the Food Recovery Challenge. The participants represent major grocery chains, with some chains having hundreds of stores; colleges and universities with thousands of students; and, venues that serve thousands of attendees, resulting in the total number of participating locations being several times the number of participants.

[3] Hall KD, Guo J, Dore M, Chow CC. 2009. The Progressive Increase of Food Waste in America and Its Environmental Impact. PLoS ONE 4(11): e7940. doi:10.1371/journal.pone.0007940.

Leading by Example in the Federal Government

The federal government is America's largest purchaser of goods and services, spending more than $500 billion each year.[4] In support of the Administration's call for the Federal government to lead by example, EPA developed the *Federal Green Challenge*. Through the *Federal Green Challenge*, EPA and other federal agencies are leading by example and setting goals to reduce their environmental impacts; including reducing the amount of waste they produce. EPA launched the Challenge nationally in FY12 with the goals of moving federal facilities to more sustainable practices and helping stimulate the growth of greener products and services. At the end of FY12, 240 participants were enrolled in the *Federal Green Challenge*. One of those participants -- the U.S. Postal Service--signed up every one of its 33,000 facilities across the nation. The total number of participating facilities in the *Federal Green Challenge* across the country is 33,239.[5]

Successfully Delivering on Border 2012 Commitments

EPA successfully delivered on its commitments to reduce land contamination under the U.S.-Mexico Border 2012 program. EPA worked with Mexico to clean up more than one million scrap tires in the border area in FY12, developed a widely praised guide on scrap tire recycling, replaced a cumbersome paper-based process with an innovative electronic data exchange of hazardous waste export notices and consents, organized a comprehensive workshop in Mexico on environmentally sound recycling and refurbishing of electronic waste, and developed waste objectives for the new Border 2020 program.

Measures

To help assess EPA progress in advancing materials management, EPA used three annual performance measures in FY12 that track the amount of material that is managed. The measure of "tons of material offsetting virgin resources" will eventually replace the "reduced, reused, recycled" measure because it relates directly to SMM and will help EPA track the amount of materials managed under the three SMM Challenges. FY12 results will be available in December 2013 for all three measures.[6]

Status	Measure	Target	FY12 Value
▲	Increase in percentage of coal combustion ash that is beneficially used instead of disposed	1%	NA
▲	Billions of pounds of municipal solid waste reduced, reused or recycled	22	NA
▲	Tons of materials and products offsetting use of virgin resources through sustainable materials management	8,549,502	NA

Legend: ▲ Data Unavailable ⬢ Goal Not Met ⬬ Goal Met

[4] The White House, Office of the Press Secretary. 2009. President Obama signs an Executive Order Focused on Federal Leadership in Environmental, Energy, and Economic Performance [Press release]. Retrieved from http://www.whitehouse.gov/the-press-office/president-obama-signs-executive-order-focused-federal-leadership-environmental-ener

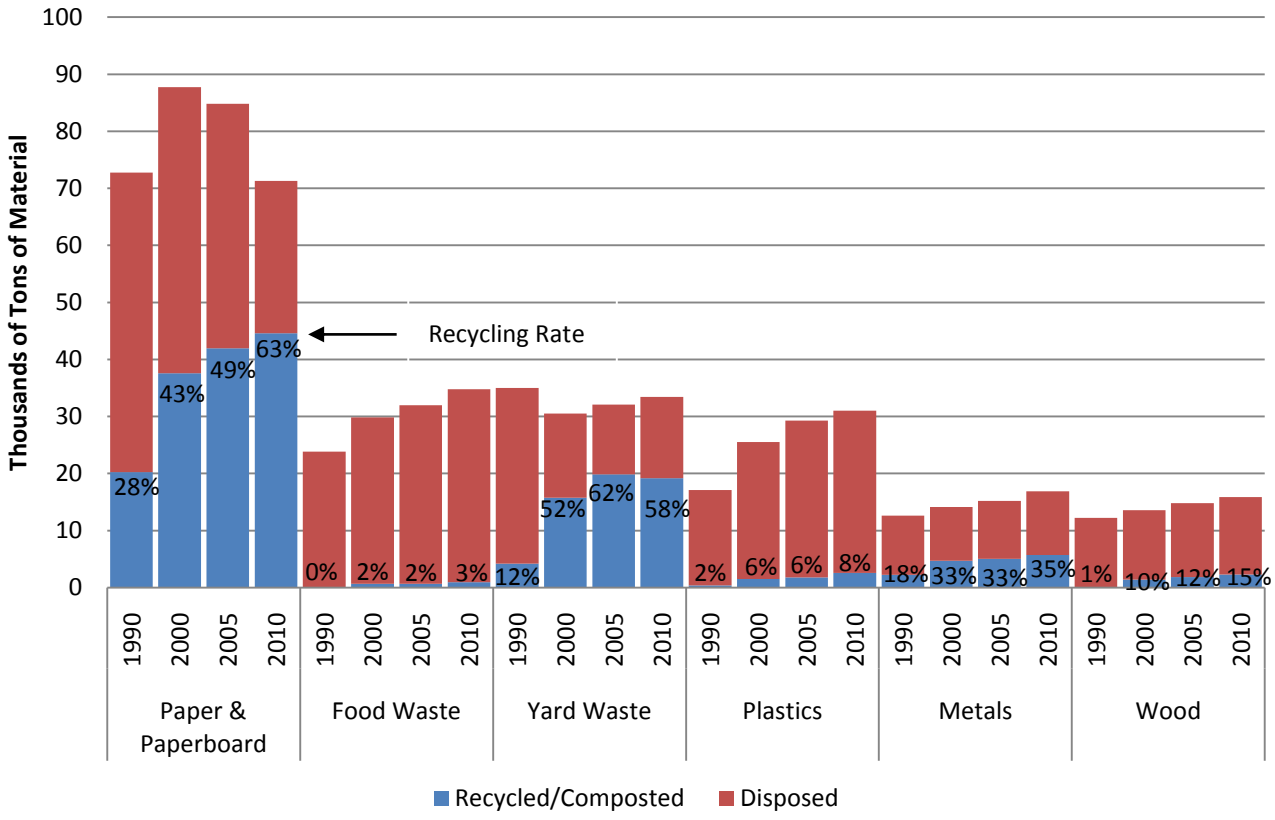
[5] Note that the term "facility" means different things for different Federal Agencies. For instance, some Federal Agencies consider a facility to be a single building, while others consider a whole installation to be a single facility.

[6] Elements of the measure are based on calculations of national recycling and waste disposal rates, which require data generated from other data sources, including other Federal Agencies. Portions of this data are not available until after the end of the fiscal year.

Trends

According to EPA's Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2010[7], 243 million tons of municipal solid waste was generated in the United States in 2010. Food waste was the second largest component of municipal solid waste (MSW) generated at 34.76 million tons; however food waste also experienced the lowest recycling rate of MSW, at 2.8 percent and is the number one component of MSW that is disposed of in landfills (figure 2). This trend underscores the importance of and opportunities associated with EPA's efforts to reduce food waste.

Figure 2. Materials Recycled and Disposed 1990, 2000, 2005, 2010



Note: During this period the overall amount of paper and paperboard generated has decreased. This is driven by a decrease in the production of newsprint and other commercial printing.

[7] 2010 is the most recent data currently available. Data for 2011 is scheduled to be collected by February 2013.

Managing Hazardous Waste

Preserving Land

What is it?

Hazardous waste threatens many segments of American society. These wastes can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes.

Comprehensive, national regulations define hazardous waste, and impose standards on anyone who generates, recycles, transports, treats, stores or disposes of hazardous waste. Some key aspects of the hazardous waste management program include: controlling transportation of hazardous waste through a manifest system[8]; ensuring the safe treatment, storage and disposal of hazardous wastes by establishing specific requirements/permits that must be followed when managing those wastes; and inspecting facilities to ensure compliance with regulations. Through these programs, EPA and states protect human health and the environment by minimizing waste generation, preventing the release of millions of tons of hazardous wastes from hazardous waste generators and management facilities, and cleaning up land and water. The states and EPA work together to leverage their resources and prioritize clean ups as well as finding solutions for complex cleanup sites. Funded in part by Hazardous Waste Financial Assistance Grants from EPA, authorized states conduct most of the direct implementation of the permitting, corrective action, and enforcement components of the RCRA hazardous waste management program. The Superfund program's liability provisions also act as a powerful deterrence to mismanaging hazardous waste. These provisions will be described in the next section, Restoring Land.

The Resource Conservation and Recovery Act (RCRA) program has issued permits, and other initial approved controls in order to prevent releases at over 2,400 treatment, storage and disposal (TSD) facilities. As a result, EPA and its state partners have put controls in place to protect an estimated three million people (that live within a mile of facilities) from exposure to hazardous waste. The subsequent permit renewals that are issued ensure that the permit remains protective.

The national RCRA program provides leadership for meeting our legal obligation to:

- Renew all permits at least every 10 years;
- Maintain permits by modifying them to address changes in operations and accommodate changes to manufacturing process waste streams; and

[8] The Hazardous Waste Manifest System is a set of forms, reports, and procedures designed to seamlessly track hazardous waste from the time it leaves the generator facility where it was produced, until it reaches the off-site waste management facility that will store, treat, or dispose of the hazardous waste. The system allows the waste generator to verify that its waste has been properly delivered, and that no waste has been lost or unaccounted for in the process. The Hazardous Waste Electronic Manifest Establishment Act was signed into law at the beginning of FY13. Throughout FY13, EPA will meet with stakeholders and determine requirements for the system's functionality and operations.

- Monitor facility performance to ensure that permits continue to protect people and ecosystems from harmful exposures to hazardous pollutants.

The RCRA program requires facility owners or operators to demonstrate that they have financial mechanisms in place to cover the closure, post-closure and clean-up activities. This is critical to protecting taxpayer dollars by ensuring that money will be available to properly close, cleanup and monitor the site if, for example, the facility is abandoned or the owner goes bankrupt.

Furthermore, EPA promotes the management of waste in more environmentally beneficial and cost-effective ways. It is important for EPA to strike a balance between recovering valuable materials and preventing loopholes that could lead to unsafe disposal under the guise of recycling. EPA is working to provide regulatory flexibilities designed to encourage hazardous materials recycling with adequate safeguards. In order to protect human health and the environment, EPA must help ensure that materials are destined for legitimate recycling.

Why is EPA doing this?

The hazardous waste program protects human health, communities, and the environment through enforceable controls; prevents the release of hazardous constituents from generators and management facilities; and provides for its safe management. EPA's hazardous waste management activities play a key role in supporting U.S. industries and small businesses. By facilitating the safe management of waste, it provides a critical service to the U.S. economy and safeguards valuable drinking water resources by preventing hazardous contaminants from ground and surface water.

New technologies, waste streams and new Clean Air Act and Clean Water Act regulations have meant that the RCRA program must evolve to address new challenges. Since RCRA was enacted, there has been a wide-ranging expansion in the variety of products and services available to consumers; these advances have led to many new chemicals coming into the market and many new waste streams that must be addressed. Fortunately, there have also been tremendous advances in the science involved with assessing risks from waste (showing, for example, that some chemicals are actually more toxic than previously determined), the technologies for managing waste and the methods for recycling or reusing waste. The challenge for the hazardous waste program is the need to incorporate these advances into the current regulatory structure in a lasting and effective manner. In addition, due to economic difficulties, many states are reducing their matching funds to the minimum required match.

Accomplishments

Developing Tools to Support Hazardous Waste Decision Making

In FY12, EPA launched the Hazardous Waste Pharmaceuticals Wiki to help hazardous waste generators and other stakeholders collaborate in making hazardous waste determinations for waste pharmaceuticals. The resource makes it easier for stakeholders to share expertise and facilitate accurate hazardous waste determinations, leading to expanded compliance with hazardous waste regulations among the healthcare community. In FY12, EPA also released the, "Waste Treatment, Storage, and Disposal Facilities Regulations: A User-Friendly Reference Document." The document consolidates publicly available RCRA program resources such as permit appeals and Federal Register Notices on the web, and is designed to assist communities, permit writers, states and tribes in locating and understanding the current RCRA Waste Treatment, Storage, and Disposal Facilities Regulations.

Improving Solid Waste Management Capacity Assistance to Tribes

In FY12, EPA produced a draft *Environmental Protection Agency-Wide Plan to Provide Solid Waste Management Capacity Assistance to Tribes*. This draft plan promotes sustainable tribal waste management programs through the development and implementation of Integrated Waste Management Plans. EPA believes that the implementation of the plan will enhance its ability to provide consistent and effective solid waste management capacity assistance to tribes.

EPA also provided funding to four tribes under the Hazardous Waste Management Grant Program for Tribes, for the development and implementation of hazardous waste programs; building capacity to improve and maintain regulatory compliance; and developing solutions to address improper management of hazardous waste on tribal lands.

Amending the Nonhazardous Secondary Materials Rule

EPA issued a proposed amendment to the Nonhazardous Secondary Materials Rule in December 2011. As a result of this amendment, materials that were otherwise destined for the landfill can now be used for energy recovery. The original rule identified which nonhazardous secondary materials (NHSMs) are, or are not, solid wastes when burned for energy recovery to establish whether Clean Air Act (CAA) section 112 or 129 requirements apply to the combustion of those materials. This regulatory amendment was proposed to clarify the status of several classes of nonhazardous secondary materials. The rule was needed to support a set of companion CAA regulations (Boiler Maximum Achievable Control Technology (MACT), Portland Cement MACT, Commercial and Industrial Waste incinerator standards) after court challenges, and is essential to the successful implementation of those rules. EPA also completed seven regulatory interpretation letters in support of the regulation.

Measures

EPA measured its FY12 progress in this area with an annual performance measure that tracks the number of RCRA hazardous waste facilities with new or updated controls in place to prevent releases of contaminants into the environment. EPA also tracked improvements in tribal capacity to manage solid waste in FY12 by measuring the number of open dumps cleaned up in Indian Country and number of tribes with an integrated solid waste management plan. All three measures for managing waste were exceeded in FY12.

Status	Measure	Target	FY12 Value
	Number of hazardous waste facilities with new or updated controls.	100	117
	Number of closed, cleaned up or upgraded open dumps in Indian Country or on other tribal lands.	45	74
	Number of tribes covered by an integrated solid waste management plan.	3	13

Legend:  Data Unavailable  Goal Not Met  Goal Met

Preventing Petroleum Releases

Preserving Land

What is it?

EPA has two primary programs that work to protect our land and water bodies from petroleum contamination. EPA works with state, tribal and inter-agency partners to prevent releases from Underground Storage Tanks (USTs), thereby reducing cleanup costs while protecting human health and the environment. The UST Program develops federal regulations governing the program, provides needed funds to state and tribal partners to support their programs and implements the program in Indian country. The UST Program provides important oversight of state and tribal grant funding to ensure performance goals are effectively achieved. In addition, the UST Program provides technical information and guidance, forums for information exchanges and training opportunities to states, tribes and intertribal consortia to encourage program development and implementation.[9] Providing such guidance and training at the national level is the most efficient and effective approach, since this work can help all states and tribes, without requiring duplicative effort across the country. In addition, EPA provides national guidance for emerging issues, such as the impact of alternative fuels on tank infrastructure and cleanup of higher blend releases. The states, in turn, are the front-line implementers of the UST program. The states conduct the majority of inspections, enforcement and site-specific compliance assistance. In Indian Country, EPA works closely with tribes to implement the program.

The Oil Spill Program protects U.S. waters by preventing, preparing for and responding to oil spills. Section 311 of the Clean Water Act and the Oil Pollution Act provide EPA with the authority to establish a regulatory program for preventing, preparing for and responding to oil spills that occur in navigable waters of the United States. The Oil Pollution Prevention regulations apply to certain non-transportation-related facilities that could discharge oil into navigable waters of the United States. These regulations require each owner or operator of a regulated facility to prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan addressing the facility's design, operation and maintenance procedures established to prevent oil spills, as well as countermeasures to control, contain, clean up and mitigate the effects of an oil spill that could affect navigable waters. In addition, facility owners and operators at approximately 4,400 facilities are also required to prepare facility response plans (FRPs) addressing response actions for discharges of oil that present the potential for substantial environmental harm. EPA uses the information in the FRPs to develop Area Contingency Plans (ACPs) under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA conducts oil spill prevention, preparedness, compliance assistance and enforcement activities associated with more than 640,000 non-transportation-related oil storage facilities through its spill prevention program.

[9] For more information, please visit: http://www.epa.gov/oust/ustsystm/index.htm

Why is EPA doing this?

The release of gasoline that contains contaminants of concern, such as benzene, methyl-tertiary-butyl-ether (MTBE), alcohols, or lead, can cause potential adverse effects, including drinking water impacts, and has significant costs associated with cleaning up these contaminants. While EPA and its partners have made major progress in reducing the number of new releases, thousands of releases are still discovered each year (about 5,600 in FY12). A main cause of releases from USTs is the lack of proper operation and maintenance of UST systems. Approximately 30 percent of the federally regulated UST systems still need to come into and stay in compliance. At the end of FY12, there were approximately 83,000 open releases still in the cleanup process or waiting to be cleaned up. Given that remediation costs average between $100,000 and $400,000 per release (depending on the presence of ground water contamination), a robust prevention program saves resources in the long run.

Discharges of oil into U.S. waters from facilities often threaten human health and result in environmental damage and financial loss to businesses. EPA's efforts protect human health from the harm associated with oil discharges. Because states, tribes, and communities may lack the infrastructure and resources to respond to these national emergencies or to work with oil facilities to prevent accidents from happening in the first place, EPA and the Coast Guard provide a safety net essential to protecting communities.

Accomplishments

Evaluating Opportunities to Improve Oil Spill Response

EPA is evaluating and integrating lessons learned from the 2010 Deepwater Horizon BP Oil Spill. One aspect of the response was the integral part played by the National Response Team (NRT) and Regional Response Teams. These teams, co-chaired by the EPA and the United States Coast Guard (USCG), provide technical assistance, resources and coordination on preparedness, planning, response and recovery activities for emergencies involving hazardous substances, pollutants and contaminants, oil, and weapons of mass destruction. The dramatic expansion and complexity of the response challenged existing response structures. EPA, USCG and 14 other federal departments and agencies coordinated an unprecedented response to protect human health and remove oil from the Gulf and its surrounding communities. The NRT developed a report that included observations from agencies and recommendations based on those observations. The observations and recommendations were grouped in categories, addressing issues such as communications and coordination. Among the lessons learned from the response, as reflected in the report, is the need for proactive outreach during the initial phase of the response and additional opportunities for training and exercises for multi-agency and cross-jurisdictional incidents. [10]

[10] The NRT report is available at: http://www.nrt.org/production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/SA-1079_NRT_Improvement_Plan_FINAL_5-31-12.pdf/$File/NRT_Improvement_Plan_FINAL_5-31-12.pdf?OpenElement

Measures

Ensuring that high risk facilities that store large amounts of oil are compliant with EPA's SPCC and FRP regulations is a crucial part of preventing oil spills. To help assess EPA's progress in this area, EPA reported two performance measures in FY12 that track the percentage of facilities brought into compliance with the regulations. Over the past several years, EPA has exceeded its yearly targets for these two measures, helping to improve facility oil spill preparedness and prevent oil spills.

To help assess EPA's progress in reducing petroleum releases into the environment from USTs, EPA collects state data for two key performance measures that track reductions in the number of confirmed UST releases across the country, and increases in the percentage of UST facilities that are in compliance with release detection and prevention regulations. EPA exceeded both of these targets in FY12.

Status	Measure	Target	FY12 Value
	Percent of all FRP inspected facilities found to be non-compliant which are brought into compliance.	35%	73%
	Percent of all SPCC inspected facilities found to be non-compliant which are brought into compliance.	35%	63%
	Reduce the number of confirmed releases at UST facilities to 5% fewer than previous year.	<8,120	5,674
	Increase the percentage of UST facilities that are in significant operational compliance with both release detection and release prevention requirements by 0.5% over the previous year's target.	66.5%	71.4%

Legend:  Data Unavailable  Goal Not Met  Goal Met

Trends

Since the Energy Policy Act of 2005, which requires increased prevention activities, the percent of UST systems in compliance has increased and the number of confirmed releases from UST systems has decreased (figure 3&4). These trends demonstrate the value of investing in release prevention, as they clearly indicate the correlation between improved compliance with reduced releases. Since FY05 the number of confirmed releases has decreased by 24 percent.

Figure 3. Compliance Rate at UST sites FY05-FY12

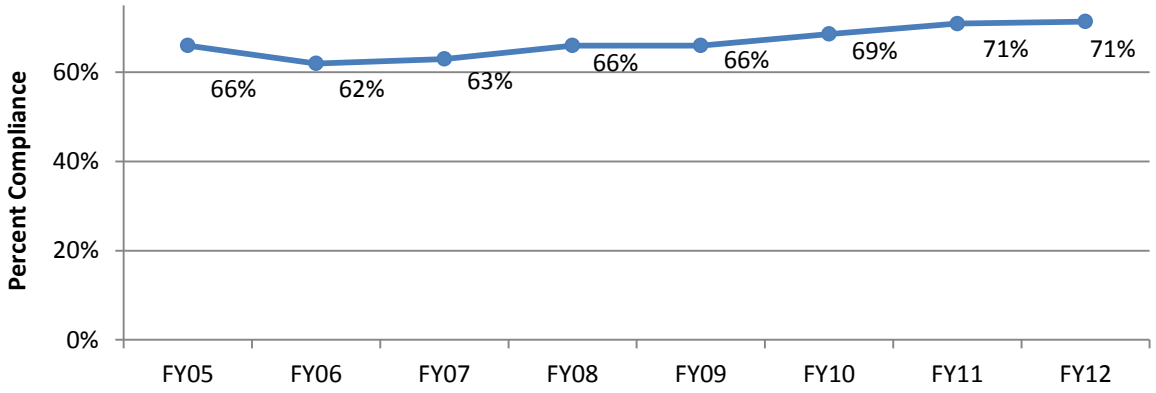
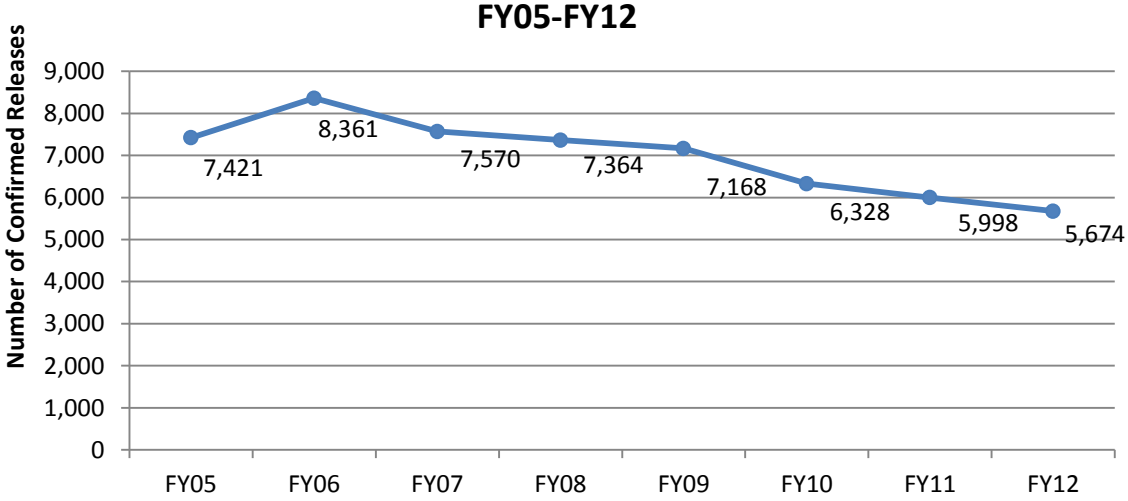


Figure 4. Confirmed Releases at UST sites FY05-FY12



Reducing Chemical Risks and Releases

Preserving Land

What is it?

EPA's Chemical Emergency Preparedness and Prevention Program is the national regulatory framework to prevent, prepare for and respond to catastrophic accidental chemical releases at industrial facilities throughout the United States. This program includes the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Clean Air Act Section 112(r) Risk Management programs. In addition to the measures taken by facilities to prevent accidents, these programs also collect and share data to assist communities and local emergency responders in preventing and responding to releases of all types, and as such, provides the foundation for community and hazards response planning. The EPCRA program requires facilities to report their chemical accidents and inventories of chemicals to the local communities and emergency responders in order for those officials to develop a local community emergency response plan to mitigate the effects of a chemical accident. Under the Clean Air Act, EPA regulations require that facilities handling more than a threshold quantity of certain extremely hazardous substances implement a risk management program and submit a risk management plan to EPA. The risk management plan describes the approach the facility is taking to prevent and mitigate chemical accidents. The plan addresses the hazards of the chemicals used by the facility, the potential consequences of worst case and other accidental chemical release scenarios, the facility's five year accident history, the chemical accident prevention program in place at the site and the emergency response program used by the site to minimize the impacts on the public and environment should a chemical release occur.

Risk management plans are currently available to local emergency planning committees (LEPCs) and members of the local community's access to them is limited through either the LEPC or by visiting a Federal risk management plan reading room. The risk management plan regulation requires facilities to coordinate facility emergency response plans with the community emergency response plan developed under EPCRA, and facilities must have a means of notifying local community responders in the event of an accident. During inspections of RMP facilities, in addition to verifying compliance with accident prevention requirements, EPA checks with the LEPC to ensure that the facility has adequately coordinated its emergency plan with community responders.

Why is EPA Doing This?

Accidents at chemical facilities have resulted in injury and death, environmental damage and financial loss. Public demand for chemical release information skyrocketed in the mid-1980s after a deadly cloud of highly toxic pesticide killed thousands of people in Bhopal, India. Shortly thereafter, a serious chemical release at a plant in West Virginia hospitalized 100 individuals. States and communities may lack the strong infrastructure needed to address these emergencies or to prevent them from happening in the first place. Together, the risk management program and EPCRA establish a structure within which federal, state, local and tribal partners work together to protect the public and the environment from

chemical risks. They also play an important role in increasing transparency and communication among facilities, governments and communities to facilitate the prevention of accidents when possible and plan for effective emergency response actions when they are necessary. The RMP program has resulted in a significant reduction in the frequency of chemical accidents at regulated facilities, and EPA has used the program to promote facility chemical safety improvements that make nearby communities safer.

Accomplishments

Targeting High-Risk Facilities for Oversight

Chemical facilities that have been identified as high-risk based on their accident history, extremely large quantity of chemicals on site, or proximity to large residential populations have the potential for causing great damage to the public and environment in the event of an accident. EPA continues to focus on maximizing the effectiveness of program resources by targeting these facilities for oversight. More than 25 percent of the inspections conducted in FY12 were at high-risk facilities. These inspections are often more complicated than inspections at other RMP facilities, requiring more time and personnel.

When facilities are found to be out of compliance with RMP requirements during inspections, EPA may take enforcement actions to address deficiencies and ensure future compliance. Traditionally, such enforcement actions have involved orders to correct specific deficiencies, along with monetary penalties on facilities found to be in violation. However, more recently, EPA has focused on incorporating chemical safety actions into enforcement settlements, such as having facilities convert systems to safer technologies or improve safety through activities such as training, in order to achieve a direct benefit to nearby communities by improving facility safety.

Measures

EPA identified approximately 13,000 RMP facilities nationwide, of which approximately 1,900 facilities have been designated as high risk. To help assess EPA's progress in inspecting these facilities, EPA tracks the annual number of both regular and high risk RMP facility inspections it conducts. In FY12, EPA surpassed its target for number of risk management plan audits and inspections completed with 648 inspections.

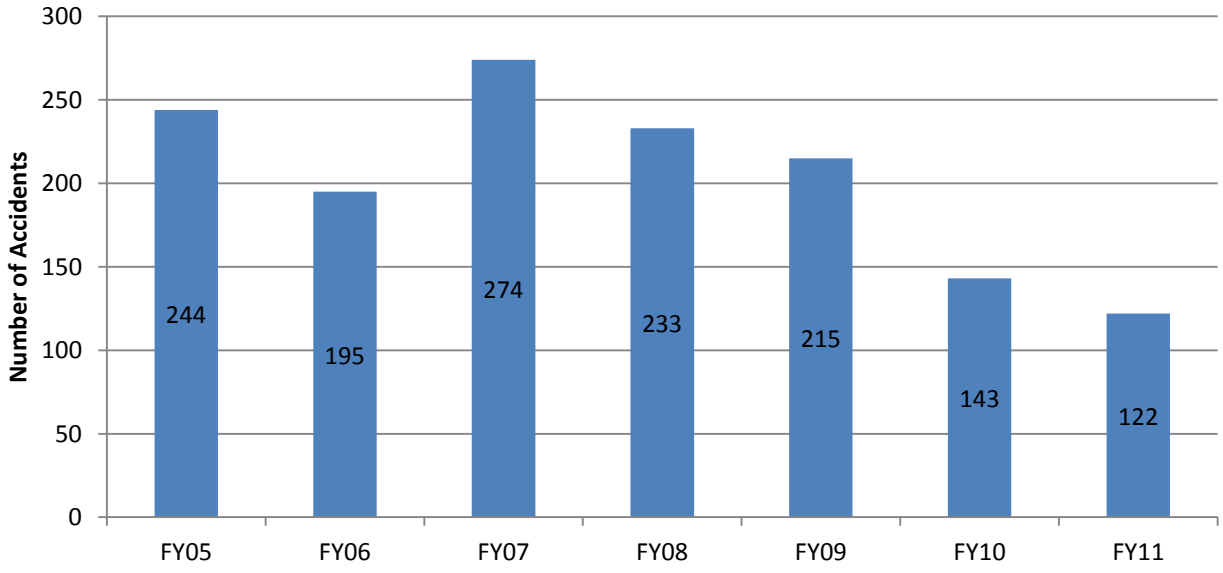
Status	Measure	Target	FY12 Value
	Number of risk management plan audits and inspections completed.	530	648

Legend:  Data Unavailable  Goal Not Met  Goal Met

Trends

There has been a significant decrease in accidents reported at RMP facilities since FY05 (figure 5)[11]. While the number of overall accidents has declined, EPA has further work to do to reduce accidents at high-risk facilities due to the extremely large quantity of chemicals on site, their proximity to large residential populations, or their accident history. These facilities have the potential for causing great damage to the public and the environment in the event of an accident. EPA evaluates RMPs that have submitted risk management plans, carries out regulatory enforcement actions where appropriate, and continues inspection activities at high-risk facilities. These activities, along with consistent outreach with regulated communities, advancing technologies, and improved safety systems, are helping to maximize the effectiveness of prevention and preparedness at chemical facilities. However oversight and inspections at high-risk facilities, due to their complex processes, larger scale, and potential risk, require more resources, including technical experts and time. One of the challenges is that resources to oversee and conduct inspections are limited; therefore, only 25 percent of our inspections take place at high-risk facilities.

Figure 5. Reported Accidents by Year at RMP Facilities FY05-FY11



[11] These data are current as of August 2012. The FY11 number may change slightly due to a lag in reporting.

Restoring Land

Accidents, spills, leaks and past improper disposal and handling of hazardous materials and wastes have resulted in tens of thousands of contaminated sites in the United States. Contaminated land can threaten human health and the environment, impact our water and air quality, and potentially hamper economic growth and the vitality of local communities. While EPA is not involved in all contaminated sites, EPA tracks over 520,000 sites and 22.5 million acres across the 50 states, the District of Columbia, and U.S. territories. EPA and its state and tribal partners work to address contamination at these sites and restore them for productive use. EPA works with communities to ensure that they can become involved with cleanup decisions and have a say in how sites are reused once the cleanup is complete.

Sites are often described and categorized based on the level and type of contamination and the regulations under which they are investigated and cleaned up. Some contaminated sites pose little risk to human health and the environment, because the level of contamination is low, as is the chance of exposure to toxic or hazardous contaminants. Other contaminated sites are of greater concern because of the chemicals that may be present and their propensity to persist in or move through the environment, exposing humans or the plants and animals in the ecosystem to hazards. These sites must be carefully managed to prevent contamination from harming humans, wildlife or ecological systems, both on and off site.

As identified in the Integrated Cleanup Initiative (ICI), the three stages of the cleanup process, referred to as the cleanup continuum, are used in this section to describe our activities and progress.

The cleanup continuum is:

- Starting cleanups – focusing on site identification and assessment activities in the early stages of the cleanup continuum.
- Advancing cleanups – emphasizing coordination activities and activities intended to assure that unacceptable human exposures are eliminated as soon as possible while site cleanup progresses.
- Completing cleanups and reusing sites – achieving the goal of providing long-term human health and environmental protection, and promoting land revitalization to return sites to communities for their intended use.

This section reviews our programs and describes our progress in restoring contaminated land. EPA has six major land cleanup programs: Superfund Remedial and Federal Facilities Programs, Superfund Removal Program, the Brownfields Program, the RCRA Corrective Action (CA) Program, the Leaking Underground Storage Tank (LUST) Program and the Polychlorinated Biphenyls (PCBs) Cleanup Program.

OSWER CLEANUP PROGRAMS

The **Superfund Remedial and Federal Facilities Program** addresses long-term risks to human health and the environment resulting from releases of hazardous substances at the nation's highest priority sites. Superfund sites are found throughout the country. The Federal Facilities Program works with federal entities to ensure fast and effective cleanup at federally-owned sites, and facilitates partnerships between the other federal agencies and the surrounding communities. The Superfund Remedial Program works on non-federally owned sites.

The **Superfund Emergency Response and Removal Program** functions as the backbone federal response to many emergency events; provides response support to state, local, tribal and potentially responsible parties when their response capabilities are exceeded; and manages risks to human health and the environment. Removal actions are typically immediate short-term responses intended to protect people from threats posed by hazardous waste sites.[12]

The **Brownfields Program** addresses environmental site assessment and cleanup of abandoned and potentially contaminated sites through grants, cooperative agreements, and technical assistance to communities, states, and tribes. Brownfields' sites are former commercial and industrial sites that have potential contamination that needs to be assessed and in some instances cleaned up before redevelopment and reuse can occur. These sites generally are much less contaminated than Superfund and RCRA Corrective Action sites. Funding to states and tribes helps develop and enhance their voluntary cleanup programs for these sites. In addition, the Brownfields Program provides environmental workforce development and job training funding to recruit, train and place local, unemployed residents of solid and hazardous waste-affected communities with the skills needed to secure full-time employment in the environmental field.

The **RCRA Corrective Action Program** directly implements the corrective action (CA) program in 13 states and territories, and performs as lead regulator at an increasingly significant number of facilities undergoing CAs in 42 states across the country that are authorized for the RCRA CA Program. An essential element of EPA's hazardous waste management program is the statutory requirement that facilities managing hazardous wastes must clean up releases of hazardous constituents that could adversely impact human health and the environment. The CA program is critical to preventing future Superfund sites and the associated resources and expenditures.

The national **Polychlorinated Biphenyls (PCBs) Cleanup and Disposal Program** is implemented by EPA, and works closely with other EPA cleanup programs and state and local governments to ensure cleanups are conducted efficiently and that human health and the environment are protected. Prior to the Toxic Substances Control Act, PCBs were widely used across many commercial industries and significant PCB contamination resulted from spills, releases and from products.

The **Leaking Underground Storage Tank (LUST) Cleanup Program** works with state and tribal partners to clean up releases from LUST sites, many of which impact ground water resources. Cleaning up LUSTs is a key part of protecting our environment. Even a small amount of petroleum released from an underground tank can contaminate groundwater, the drinking water source for nearly half of all Americans. States are the primary implementing agencies. EPA provides resources to support the infrastructure of state LUST programs so that private and state resources can directly finance the field work necessary to address contamination at federally- regulated tank releases. EPA also provides regulations, guidance and policy to support cleanup of tank releases. In Indian country, EPA directly implements the program by overseeing cleanups and, in some cases, directly cleaning up releases.

[12] This program is a part of EPA's cleanup and EPA's emergency response functions. An additional description of this program's responsibilities is described in the Responding to Emergencies and Reducing Risks section of this document.

What is the Universe?

As indicated earlier, EPA tracks over 520,000 sites representing 22.5 million acres. The number of sites and acres for which EPA is involved in by program is provided in figures 6 and 7.[13] These figures show the universe of sites under EPA's purview. The number of sites and acres tracked in the universe changes over time as more sites are identified and brought under the jurisdiction of the different programs (e.g., when a site receives a Brownfields' grant). The FY12 universe translates to almost 22 percent of all developed land in the United States.[14]

There are many other sites that are tracked only at the state and local level. The full scope of the land in the U.S. that is currently contaminated and in need of assessment and cleanup is not shown in figures 6 and 7. For example, the 2004 Government Accountability Office report entitled *Brownfield Redevelopment: Stakeholders Report that EPA's Program Helps to Redevelop Sites, but Additional Measures Could Complement Agency Efforts* states that there were about 450,000 to one million brownfields.

Figure 6. OSWER Sites by Program

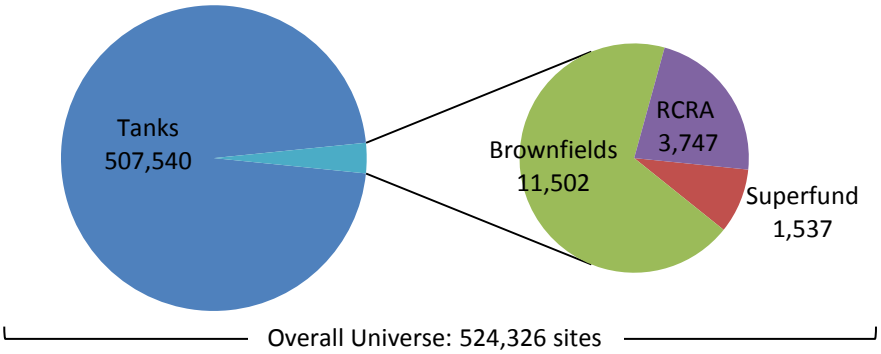
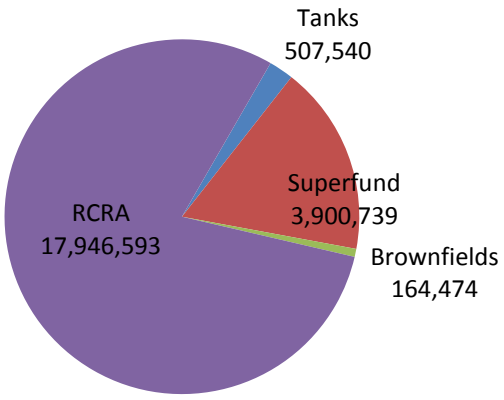


Figure 7. OSWER Acreage by Program



Total Acreage: 22,519,346

[13] For the Tanks program, one tank site is assumed to equal one acre.

[14] Developed land accounts for 102.5 million acres or 5 percent of total land in the U.S. EPA's 2008 Report on the Environment. Chapter 4- Exhibit 4-2.

Starting Cleanups – Assessment and Evaluation of Sites

Restoring Land

What is it?

Generally, the first step in addressing potential contamination is an assessment. Assessments help eliminate the uncertainty associated with potential or actual contamination at a site or property. Each EPA cleanup program has a unique process for assessing or assisting in an assessment. For example, at Superfund sites, EPA, the implementing state, tribe, local government or federal facility assesses releases to determine whether there is in fact a release to the environment. In the Brownfields Program, an assessment grant may be given to a community, state or other stakeholder to inventory, characterize, assess, and conduct planning and community involvement related to brownfields sites. If contamination is found, a series of progressively more complex assessments may be conducted to determine whether further action, such as a cleanup, is needed and design appropriate cleanup and reuse strategies for the site. At a significant percentage of all EPA sites and properties the assessment determines that no further action is required and the site or property does not require EPA involvement, e.g. Superfund cleanup, or can be returned to productive uses. Please note, a removal may occur along any part of the cleanup continuum, including the assessment phase. For more information on the removal program see the next section, Responding to Emergencies and Reducing Risks.

Why is EPA doing this?

Assessment activities under all six of the land cleanup programs are intended to determine the extent and degree of contamination at these sites, to reduce the degree of uncertainty regarding any contamination and to determine the need for additional environmental work. This represents an important milestone in the overall cleanup process.

Accomplishments

Providing Flexibility to Grant Recipients

In response to stakeholders, in particular local government and community development organizations, EPA is piloting a new grant program for Brownfields: the multi-purpose grant. The Brownfields multi-purpose pilot grant provides funding for the assessment and cleanup of one site owned by the applicant. Traditionally, the EPA has provided this funding through two separate grants. The multi-purpose grant gives a recipient flexibility in conducting assessment and cleanup activities, and aims to eliminate the delay that may occur when moving from assessment to cleanup if it was traditionally done under two separate grants. These grants may be used to address sites contaminated by petroleum or hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum). In FY12, EPA awarded nine multi-purpose grants for $3.8 million. The projects will span three years. EPA will monitor the projects and conduct an analysis at the end of three years to evaluate the results and determine whether or not to institute a permanent multi-purpose grant option.

Assessing Cleanup Status at Federal Facilities

In FY12, EPA completed the Federal Facility Site Evaluation Project (FFSEP), a two-year effort under the ICI to document the status of 514 federally owned sites that appeared to be making insufficient cleanup progress and to reinvigorate the assessment and evaluation process. EPA has made a cleanup determination for over 95 percent of the 514 FFSEP sites that had not been fully assessed at the project's inception. The FFSEP provides open access to information about the sites, thereby increasing transparency and enabling communities and the public to more fully engage with the cleanup of federally owned sites.

Increasing the Transparency of Superfund Assessment Workloads

In FY12, EPA updated and expanded its Web coverage of the Superfund site assessment program to increase the transparency of the Superfund site assessment process for communities and to provide them with the information they need to understand cleanup progress at nearby sites. EPA is also sharing with the public correspondence with states and tribes regarding National Priorities List (NPL) listing decisions. The new Web pages improve the description of how the Superfund remedial site assessment process works and present the number of site assessments completed, results of assessment work and the number of sites still needing assessment. The new pages also display information on assessed sites that are now being cleaned up by state, tribal and other federal partners.

Partnering to Provide Workforce Development and Job Training

In FY12, Environmental Workforce Development and Job Training (EWDJT) Program was expanded to include EPA's Office of Wastewater Management and Office of Chemical Safety and Pollution Prevention. By providing more interdisciplinary and diverse training, graduates of the program are equipped with the skills needed, not only to secure short-term employment, but a pathway to long-term careers with livable wages in the growing environmental field. Formerly referred to as the Brownfields Job Training Program, the EWDJT Program provides communities flexibility to provide environmental training in a variety of areas to meet the differing local labor market demands across the country. By providing training, unemployed, predominantly low-income and minority residents, are offered an opportunity to secure employment in revitalization activities in their respective communities – rather than having jobs filled by outside contractors. Cumulatively, more than 11,100 individuals have completed training and more than 7,900 of those obtained employment in the environmental field, with an average starting hourly wage of $14.12.

Utilizing Technical Assistant Needs Assessments

EPA established the Technical Assistant Needs Assessment (TANA) as a community engagement tool in FY12. TANAs aid EPA project managers in determining if communities impacted by Brownfields, RCRA, Superfund, and other EPA programs have any technical assistance needs and what these needs may be. This tool can also be utilized by other EPA programs. Though TANAs are frequently carried out at the start of a project, they can also be applied to any stage of the cleanup process.

Measures

EPA has two measures to gauge the progress in starting cleanups and completing assessment activities. The Superfund Program and the Brownfields Program each have an assessment measure, and each have a different role in the assessment process. For both programs, however, assessments are an important stage in the cleanup process. Completing an assessment at a potentially contaminated site allows either cleanup to move forward or in many cases establishes that no further Superfund or Brownfields action is needed. In FY12, both assessment measures exceeded their targeted levels.

Status	Measure	Target	FY12 Value
●	Number of Superfund remedial site assessments completed	900	1,151
●	Brownfield properties assessed	1,200	1,444

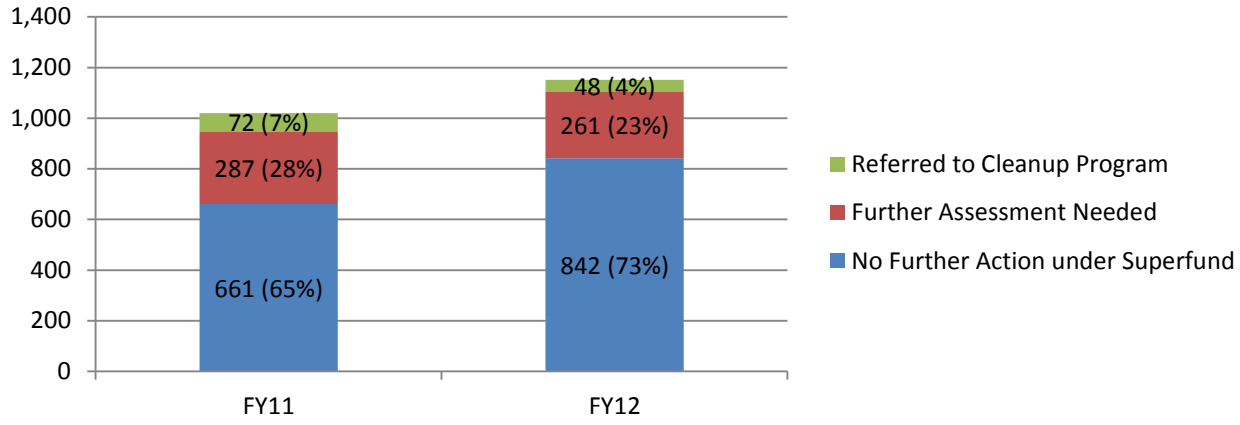
Legend: ▲ Data Unavailable ● Goal Not Met ● Goal Met

Trends

A significant percentage of potentially contaminated sites require no further action after the site assessment process is complete. By making this determination early in the cleanup process and returning the sites to reuse and redevelopment, great value is derived from the site assessment process.

Many of the sites assessed for potential inclusion on the NPL under Superfund do not warrant cleanup under the Superfund program. As shown in Figure 8, 73 percent of the Superfund remedial assessments completed in FY12 determined that no further federal action is needed under the Superfund program.

Figure 8. Superfund Site Assessments Completed FY11-FY12



This is an increase from the previous year when only 65 percent of sites were determined not to need further action. The number of sites where there is a need to collect more information before a final assessment decision could be made and sites referred to a cleanup program for further attention have both decreased.

Furthermore, an evaluation of Brownfields properties given assessment grant funding between 2003 and 2008 showed that of the 6,927 properties that reported that they completed assessment, 2,598 reported whether cleanup was needed. Of those, 1,577 (61 percent) indicated that cleanup was not required.

In addition, EPA is piloting a new indicator that looks at the beginning of the cleanup continuum for multiple cleanup programs. The new indicator is “Number of sites where a cleanup decision has been made.” This demonstrates the achievement of an important milestone in the cleanup process at sites across the Superfund Removal, Superfund Remedial, and Brownfields Programs.

Advancing Cleanups

Restoring Land

What is it?

After the site has been assessed and it is determined that cleanup is required, there is a substantial amount of progress and protection of human health and the environment that occurs before the cleanup is completed. A cleanup remedy may contain multiple actions depending on the nature of the remedy selected, and cover discrete areas of contamination such as ground water, sediments, or soil. Numerous activities take place to address the contamination, reduce risk to human health and the environment, and move the site along the cleanup continuum to return the site to use or reuse. These include engaging local communities in decision-making, and selecting and designing the remedy. The proposed continued use or anticipated future use of sites plays an important role in the cleanup process.

EPA works collaboratively with other federal agencies, states, tribes, local governments, communities and the regulated entities to integrate appropriate future use opportunities into cleanup remedy options. For example, through the utilization of CERCLA 128(a) state and tribal response program grant funding, state and tribal programs oversee assessment and cleanup activities at the majority of brownfields sites across the country. Since 2006, grantees using this funding have: completed more than 68,800 cleanups, with all required institutional controls in place and made over 644,000 acres now ready for reuse.

Additionally, EPA uses permits and enforcement authorities to implement RCRA CA. Similarly, Superfund uses enforcement authorities to obtain commitments from Potentially Responsible Parties (PRPs) to perform or pay for cleanup actions at Superfund sites, and ensure that PRPs comply with these commitments and complete cleanups in a timely and protective manner. This ensures that limited Superfund resources are preserved for sites with no viable PRPs.

The length and complexity of cleanups across the various cleanup programs can vary widely, and some sites can take a significant amount of time to clean up. Many Superfund sites and RCRA CA facilities are highly contaminated, technically challenging, and cover large areas. For example, at the Omaha Lead Superfund site located in the city of Omaha, Nebraska, residential soil cleanup has been completed at over 10,000 properties and exterior lead-based paint stabilization has been completed at over 5,000 properties to prevent recontamination. In some cases, these sites can require decades to clean up. Therefore, during the cleanup process, when a potential pathway for human exposure (air, water, soil) is identified, a process is normally initiated for exposure to be minimized or eliminated as soon as possible. EPA cleanup programs, or authorized delegated state programs, undertake or oversee interim site specific actions (e.g., fencing, providing alternate water supplies, or constructing containment walls, etc.) and cleanup activities (e.g., excavation and ground water treatment, etc.) to reduce or eliminate exposure, protecting people and the environment from the acute threats posed by uncontrolled hazardous wastes or contaminated ground water while cleanup is ongoing.

Why is EPA doing this?

Cleanups are undertaken to address threats to public health from hazardous substances, pollutants, or contaminants, and petroleum, and to prevent the migration of contaminated ground water and restore groundwater to beneficial uses where possible. Substances commonly found on contaminated sites have been linked to a variety of human health problems, such as birth defects, cancer, and changes in neuro-behavioral functions. These cleanup activities are intended to assure that unacceptable human exposures are eliminated as soon as possible and contaminated ground water migration is controlled while the longer-term controls are being designed and/or constructed and site cleanup progresses towards reuse. Recent academic research demonstrated that investment in Superfund cleanups reduces the incidence of congenital abnormalities by roughly 20 to 25 percent for those living within 5,000 meters of a site[15].

Accomplishments

Applying emerging science and technology

EPA is responsive to emerging science and technology. In FY12, EPA released the final non-cancer dioxin reassessment, publishing a non-cancer toxicity value, or reference dose, for tetrachlorodibenzo-p-dioxin in EPA's Integrated Risk Information System (IRIS). EPA is evaluating sites based on the new science. Similarly, EPA is considering strategies to respond to the IRIS trichloroethylene assessment, the Center for Disease Control's recommendations regarding lead exposure, and has updated Frequently Asked Questions for radionuclides risk assessment.

Developing a National Strategy for Optimizing Superfund Remedial Cleanups

In FY 2012, under the ICI, EPA completed a comprehensive "National Strategy to Expand Superfund Optimization Practices from Site Assessment to Site Completion." This Strategy institutes changes to Superfund remedial program business processes to take advantage of newer tools and strategies that promote more effective and efficient cleanups. It lays out several objectives to achieve verifiably protective site cleanups faster, cleaner, greener and cheaper using techniques throughout the life cycle of site cleanup, including site evaluation, construction and operation and maintenance. The Strategy also capitalizes on the benefits of optimization through multiple processes including: work planning, communicating, training, implementing, measuring and cost accounting. As part of this Strategy, EPA will continue to move to systemically apply optimization concepts throughout all phases of the remedial pipeline as a normal business practice.

Investigating and Applying Cleanup Efficiencies at Contaminated Sites

In FY12, under the ICI, EPA completed four pilot projects that were designed to evaluate alternative approaches to achieving site cleanups more efficiently. Under these pilot projects, innovative, nontraditional approaches for managing site cleanups were explored with exceptional results. The projects demonstrated business process innovations are expediting returning cleaned up property to communities sooner, accelerating the potential for reuse and the creation of new jobs. In several instances, tested approaches accelerated work at sites by roughly 50 percent or more. "Lessons learned" from these pilots have been shared with EPA Superfund program staff at Headquarters and the regions, as well as with the Superfund remedial action contracting community. In addition, the results

[15] Currie, Janet, Michael Greenstone, and Enrico Moretti. 2012. "Superfund Cleanups and Infant Health." *American Economic Review*, 101(3):435-441, at p. 439.

of these pilot projects are being used to shape the development of new Superfund contracts, policies and tools that can be used to speed cleanup at other sites.

Measures

EPA uses two performance measures that track the number of Superfund and RCRA Corrective Action sites at which human exposures are under control. This helps EPA to assess progress in preventing human exposures to harmful chemicals at sites, while longer term cleanup progresses. Actions taken to achieve this critical milestone include, but are not limited to: providing alternative water supplies to affected communities; removing lead contaminated soil around homes with children; and/or installing migration systems in homes with indoor air contaminated by harmful chemical vapors.

EPA uses two additional annual performance measures to specifically assess its progress in ensuring that groundwater contamination at Superfund and RCRA sites is protective and not migrating into nearby surface water or drinking water supplies.

In FY12, EPA met or exceeded all of its annual targets for these measures.

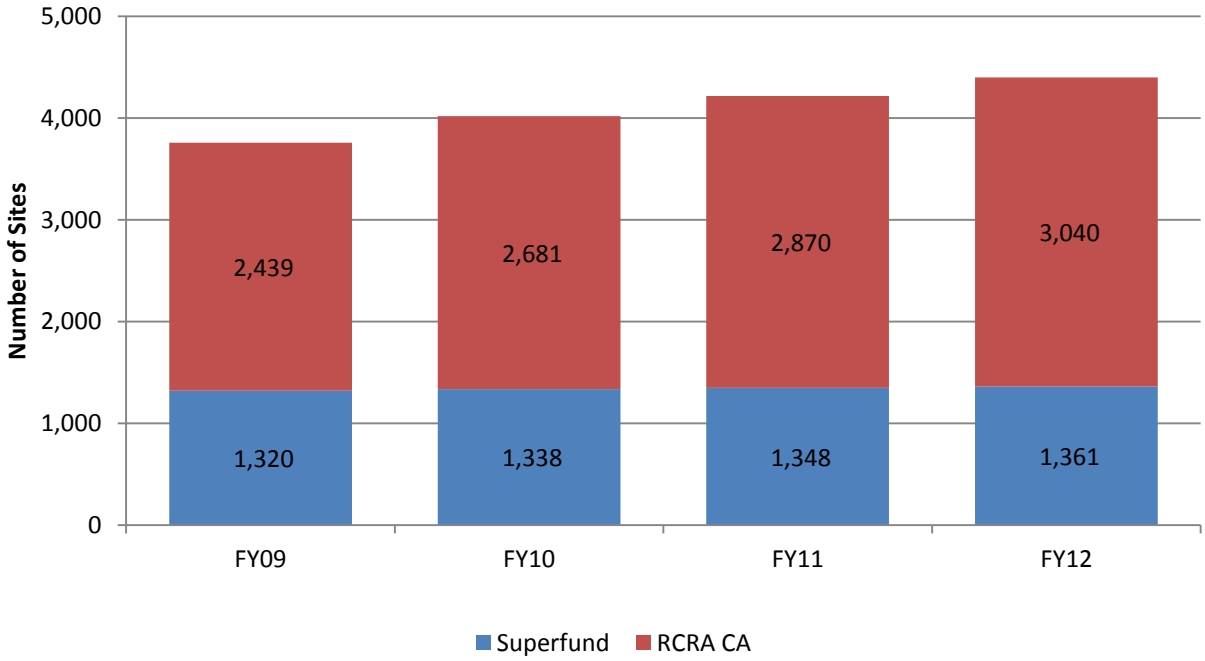
Status	Measure	Target	FY12 Value
●	Number of Superfund sites with human exposures under control	10	13
●	Number of Superfund sites with contaminated ground water migration under control	15	18
●	Cumulative percentage of RCRA facilities with human exposures to toxins under control	81%	81%
●	Cumulative percentage of RCRA facilities with migration of contaminated ground water under control	69%	72%

Legend: ▲ Data Unavailable ● Goal Not Met ● Goal Met

Trends

EPA is making significant progress in assuring that prior to completion of cleanups, unacceptable human exposures are eliminated or controlled as soon as possible. As can be seen in figure 9, the RCRA CA and Superfund programs have made significant progress in stabilizing exposure, while longer-term cleanup progresses. At these sites, EPA has taken action to address any unacceptable exposures and eliminate acute risks while continuing to pursue long-term, permanent cleanups. These actions demonstrate EPA's commitment to protecting human health and the environment from possible short- and long-term effects of site-related contamination. EPA will continue to place a priority on cleanup activities to protect human health; however, the scope of future budget reductions may result in the initiation of fewer EPA-lead projects.

Figure 9. Number of Superfund and RCRA Corrective Action Sites Protective for People FY09-FY12



Completing Cleanups and Reusing Sites

Restoring Land

What is it?

One of EPA's top priorities is to support sustainable, thriving communities by cleaning up sites and returning them to productive reuse or maintaining the viability of the operating facility. During this phase of the cleanup continuum, cleanup activities are completed. However, for some sites, removing or destroying all of the contamination is not possible. Some remaining contamination must be managed on-site, creating the need for site-specific long-term stewardship activities. EPA employs several different types of controls at these sites, including institutional controls and engineering controls, to assure that any contamination is contained and stabilized, and that human or environmental exposure to contamination is limited. Significant attention is given to these activities to ensure long-term protection of human health and the environment.

Why is EPA doing this?

Land is a resource to communities. Cleaning up land, whether for commercial, industrial, residential, recreational, greenspace or other productive use provides many benefits to the community, including reduced morbidity and mortality risks. If a property is cleaned up and revitalized, the reuse may result in new income to the community in the form of taxes, jobs to local residents or it may provide recreational or other services to make the community a better place to live. To better understand the benefits of site resuse, EPA is collecting economic information on over 300 sites that are home to approximately 1,000 businesses, employing over 40,000 people and generating more than $3 billion in income each year[16]. Property values increase after EPA completes a site cleanup. One recent study found an increase in property values between 5.1 and 12.8 percent at homes located near Brownfields sites where cleanup was completed[17]. Another study found that property values near sites where Superfund cleanups were completed increased approximately 20 percent[18].

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[16] Sources for job and revenue data included Dun and Bradstreet. Wage estimates were obtained utilizing data from the United States Bureau of Labor Statistics. In some cases information obtained through interviews and additional sources during in depth case studies was used to improve estimates.

[17] Haninger, Kevin, Lala Ma, and Christopher Timmins. 2012. Estimating the Impacts of Brownfield Remediation on Housing Property Values. Working Paper EE 12-08. Nicholas Institute for Environmental Policy Solutions. http://nicholasinstitute.duke.edu/environmentaleconomics/estimating-the-impacts-of-brownfield-remediation-on-housing-property-values

[18] Gamper-Rabindran, S. and C. Timmins. 2012. Does Cleanup of Hazardous Waste Sites Raise Housing Values? Evidence of Spatially Localized Benefits. Working Paper EE 12-03. Nicholas Institute for Environmental Policy Solutions. http://nicholasinstitute.duke.edu/environmentaleconomics/does-cleanup-of-hazardous-waste-sites-raise-housing-values

Accomplishments

Streamlining the Five-Year Review (FYR) Process

Five-Year Reviews (FYR) are conducted at Superfund sites five years after cleanup construction has begun. They document whether the site remedy is protecting human health and the environment. A federal work group, that included the Department of Defense, the Department of Energy and the Department of the Interior, was tasked with improving and streamlining the FYR process and engaging communities more effectively. The work group developed three tools to aid communities in understanding the FYR process: a community video, a training module, and community fact sheets. The streamlined FYR process results in site cleanup information that is more accessible and easier for stakeholders to understand.

Expanding Resources to RE-Power America's Land

In FY12, EPA's RE-Powering America's Land team expanded the toolbox of resources for EPA staff and outside stakeholders to provide information on the major issues and questions that arise with siting renewable energy on contaminated lands. As a result, EPA released a *Handbook on Siting Renewable Energy Projects While Addressing Environmental Issues* to increase the awareness of the opportunities for siting renewable energy projects while addressing environmental site issues during all phases of cleanup and provides key considerations for integrating renewable energy into the Superfund, RCRA, and Brownfields cleanup processes. Additionally, EPA Headquarters, EPA's Region 9 Office, and the Department of Energy's National Renewable Energy Lab (NREL) developed solar and wind decision trees to screen potentially contaminated and underutilized sites for solar and wind potential. Both of these tools support RE-Power's mission to encourage renewable energy development on current and formerly contaminated land and mine sites when it is aligned with the community's vision for the site.

Measures

EPA established 10 measures related to completion of cleanups and site reuse. These measures demonstrate EPA's progress in cleaning up sites and returning them to productive use, so that they can return value to local communities. Six measures – representing the RCRA CA, Superfund, LUST and Brownfields programs – describe progress toward meeting the completion of cleanup goals. All but the LUST cleanup target was met in FY12. The LUST program was able to complete 97 percent of the targeted cleanups. The reason for this is primarily because many states are facing significant staff and resource constraints, while at the same time cleanup costs are rising.

Status	Measure	Target	FY12 Value
●	Number of remedial action projects completed at Superfund NPL sites	130	142
●	Annual number of Superfund sites with remedy construction completed	22	22
●	Number of properties cleaned up using Brownfields funding	120	120
●	Cumulative percentage of RCRA facilities with final remedies constructed	46%	47%
⬢	Number of LUST cleanups completed that meet risk-based standards for human exposure and ground water migration	11,250	10,927
●	Number of LUST cleanups completed that meet risk-based standards for human exposure and ground water migration in Indian country	42	47

Legend: ▲ Data Unavailable ⬢ Goal Not Met ● Goal Met

Four measures – representing the Superfund and Brownfields Programs—support site reuse and redevelopment goals. Each of these measures was met in FY12.

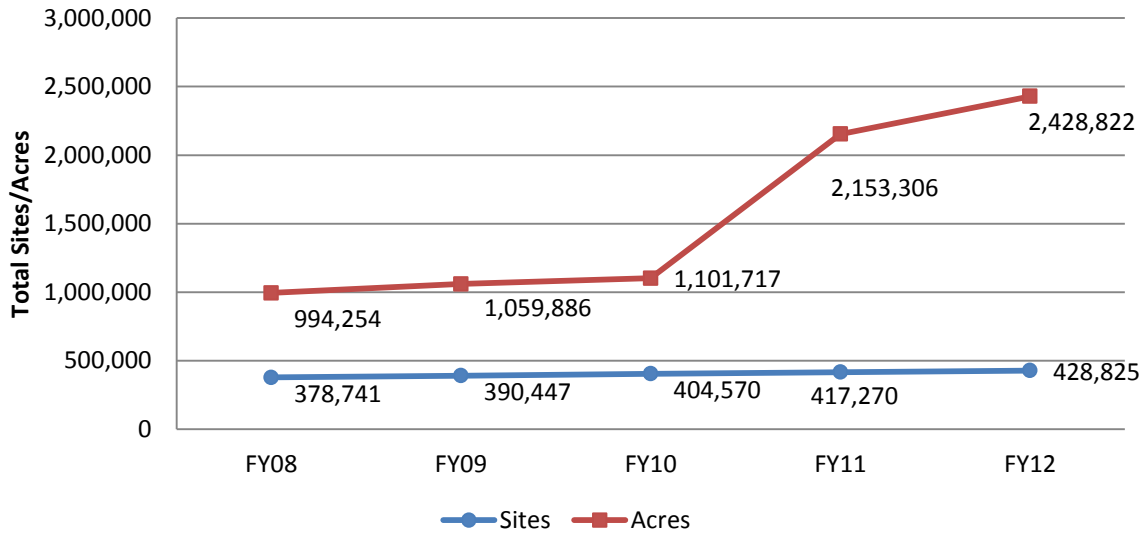
Status	Measure	Target	FY12 Value
●	Acres of Brownfields properties made ready for reuse	3,000	3,314
●	Jobs leveraged from Brownfields activities	5,000	5,593
●	Billions of dollars of cleanup and redevelopment funds leveraged at Brownfields sites	$1.2B	$1.2B
●	Number of Superfund sites ready for anticipated use site-wide	65	66

Legend: ▲ Data Unavailable ● Goal Not Met ● Goal Met

Trends

EPA's Superfund, Corrective Action, Brownfields and Underground Storage Tanks programs annually reports the number of sites ready for anticipated use (RAU). Since EPA began measuring our progress obtaining RAU status in FY08, the number of sites RAU has steadily increased (Figure 10). RAU sites have no complete pathway for human exposures to unacceptable levels of contamination based on current site conditions, all cleanup goals are achieved for media that may affect anticipated land use, and all institutional controls identified as part of the response action are in place. Today, EPA has made over 428,000 sites and over 2.4 million acres RAU, which is over 81 percent of all sites within the EPA universe. As a result, communities are able to reclaim these properties for ecological, recreational, commercial, residential and other purposes.

Figure 10. Sites and Acres Ready for Anticipated Use FY08-FY12



Responding to Emergencies and Reducing Risks

Each year, more than 30,000 emergencies involving the release (or threatened release) of oil and hazardous substances are reported in the United States, potentially affecting both communities and the surrounding natural environment. EPA responds to immediate threats from releases of hazardous substances and oil, and its first priority is to eliminate any danger to the public. There is a complex system of responsibilities for these types of emergencies. In general, responsibilities are spread across federal, state, local and tribal governments, depending upon the size and type of the emergency and involve the environmental, emergency management, public safety and public health agencies of all levels of government. EPA responds to a variety of incidents, including natural disasters such as hurricane Katrina, Mississippi River flooding, and tornados like those that devastated Tuscaloosa, AL and Joplin, MO; industrial contamination such as chemical releases to air, water or soil; and acts of terror such as the attack on the World Trade Center. Responses may be conducted in order to contain and remove a contaminant like arsenic, but they may also occur to address a radiological event or even biological contamination.

Responses to hundreds of events per year that do not generate national attention are also carried out by EPA or under its supervision. These smaller-scale responses occur practically every day. They are carried out in support of state, local and tribal first responders who often are untrained and unequipped to manage emergency responses. EPA's role is often one of a "safety net," which serves as a fundamental part of the national response system. EPA's Emergency Response and Removal personnel have become a critical element of the emergency response capability in communities all across America and are performing a vital service in support of national resiliency at the grassroots level on a day-to-day basis, creating a model for interagency, cross-government and public-private cooperation. This section will review our programs and describe our progress responding to emergencies.

OSWER RESPONSE AND REMOVAL PROGRAMS

The **Superfund Emergency Response and Removal Program** functions as the backbone federal response to many emergency events; provides response support to state, local, tribal and potentially responsible parties when their response capabilities are exceeded; and manages risks to human health and the environment. Removal actions are typically immediate short-term responses intended to protect people from threats posed by hazardous waste sites.[19]

WHAT IS THE UNIVERSE?

EPA conducts emergency response activities and removals to address contamination that results from naturally occurring substances, accidental spills, and other unanticipated events. The phrase universe is used to describe a specific list of sites and in need of assessment and/or a response action. The

[19] This program is a part of EPA's cleanup and EPA's emergency response functions. An additional description of this program's responsibilities is described in the Restoring Land section of this document.

Emergency Response and Removal Program does not have a “universe” of emergencies to work from The number and type of sites needing emergency response is constantly changing. It can include a small, contained area of land or an entire region of the country. Over the past ten years, EPA has performed or overseen an average of approximately 400 clean up actions a year, some of which are on sites that are on EPA’s National Priorities List. They range from quick-clean ups to longer efforts that often involve complicated contaminants and coordination with state and local officials and potentially responsible parties.

Preparing for and Responding to Emergencies

Responding to Emergencies and Reducing Risks

What is it?

The Superfund Emergency Response and Removal Program trains, equips and deploys resources in order to contain and remove contaminants. Under this program, trained and equipped EPA personnel respond to or oversee the responsible party's clean up of thousands of releases, regardless of their cause. EPA manages and provides support for emergency responses, removal assessments, site stabilizations and cleanup response actions at NPL and non–NPL sites. This 24-hour per day capability is a cornerstone of the National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the National Contingency Plan (NCP). The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases. EPA maintains national and regional response centers for 24-hour reporting of hazardous material or petroleum releases. EPA deploys many advanced technologies and other assets during disaster responses, such as the Chemical, Biological, Radiological and Nuclear Consequence Management Advisory Team, the portable laboratories or the airborne sensor platform called ASPECT.

Annually, EPA reviews its response and removal preparedness via the Core National Approach to Response (Core NAR) assessment. The Core NAR assessment is also an opportunity to evaluate progress addressing lessons learned in recent incidents and exercises. The Core NAR score is intended to measure our level of emergency preparedness for many types of incidents. In addition, OSWER supports EPA's Homeland Security Emergency Preparedness and Response Program through multiple efforts including leading the cross-EPA National Incident Coordination Team, leading the interagency National Response Team, providing response training, leading and participating in exercises, and enhancing and providing technical response capabilities.

EPA also plays a key role in the National Response Framework. For example, when the President has declared an emergency or major disaster, EPA, along with numerous other federal departments and agencies, provides support under the overall coordination of the Federal Emergency Management Agency to state and local governments to help communities recover from the incident. Under the current Framework, federal assistance is grouped into 15 functional areas called Emergency Support Functions (ESFs). EPA is the coordinating agency for ESF #10 – Oil and Hazardous Materials Response, and also supports nine other ESFs. Under ESF #10, EPA provides for a coordinated response to releases of oil and hazardous materials by incorporating the response mechanisms of the NCP.

Why is EPA doing this?

While threats confronted by the emergency response program vary greatly in size, nature and location, there is a common element in all cases—time. Prompt action is crucial. The Program's first priority is to eliminate dangers to the public. EPA's role as a backbone is a fundamental part of the national response system and is heavily relied upon to deal with any environmental emergency.

Accomplishments

Using Technology to Helps Clean up Communities

EPA completed or oversaw the completion of more than 400 removal actions in FY12. These cleanups were of varying complexity and contained a wide range of contaminants that posed a threat to human health and the environment. If the party that spilled the chemical cannot clean it up, EPA responds. If the local authorities, fire department or local emergency management personnel cannot clean it up, EPA responds.

For example, a cleanup was begun at the request of the Vermont Department of Environmental Conservation (VT DEC) in May 2012 when potentially cancer-causing coal tar waste was detected in buildings and by city employees in several area manholes in St. Albans, VT.

After the request by VT DEC, a team of EPA responders promptly arrived bringing with them a new mobile laboratory known as PHILIS. PHILIS, short for Portable High-throughput Integrated Laboratory Identification System, provides EPA and its response partners in need with the latest in mobile sampling technology. By using PHILIS, EPA obtained more than 250 samples of soil, sump water, sediment, gas and indoor air from 10 residential properties over a four day period, to determine the extent of coal tar waste contamination. PHILIS identified several contaminants of concern including cancer-causing Polycyclic Aromatic Hydrocarbons, which occur naturally in coal, crude oil and gasoline. Because PHILIS was available, EPA was able to provide same-day certified data, which made it possible to quickly determine how to best proceed with the cleanup.

Without PHILIS, EPA might have had to send the samples to an off-site laboratory, and the process would have taken more time – time that could have been spent on beginning the cleanup and protecting the community.

Collecting More Complete Data on Cleanups

In FY12, EPA strengthened its data collection activities to ensure that critical data are accurately collected and entered into EPA's database of record. This effort will lead to a better understanding of the Emergency Removal Program as a whole, enabling EPA to maximize resources more effectively. Collecting more robust data will also enable EPA to better communicate the environmental benefits of the Emergency Response and Removal Program.

Preparing for Cyber-Terrorism

From March through June 2012, EPA participated in a series of nationwide preparedness exercises for cyber-terrorism in order to examine the nation's ability to respond to a significant cyber event. A hypothetical cyber attack affecting municipal water supplies and other key infrastructure was simulated, and EPA played out scenarios where response plans were activated and response capabilities were tested to help improve the EPA's ability to protect human health and the environment during a real-life incident. Six EPA Regions and nine EPA program offices participated with a number of other federal agencies and state and local government partners to test information sharing mechanisms and examine how response communities work together. As a result of the exercise, EPA determined which systems are mission-essential during a cyber incident, established alternate means of communication when systems are compromised, and identified internal coordination issues that can be improved to ensure effective response. EPA also evaluated its ability to perform its mission from an alternate operating location during such an incident.

Providing Resources for Area Contingency Planning

To help address inland preparedness, in FY12 EPA developed an Area Contingency Planning (ACP) Handbook. The ACP Handbook is considered a guide and reference for the development of Area Contingency Plans for environmental emergencies. It incorporates the accumulated knowledge of years of contingency planning experience, and it focuses on statutory requirements and supports the development of consistency between area plans. Because area plans are focused on specific geographic areas with many physical and jurisdictional variables, there can be no 'one size fits all' plan format, and maintaining national consistency in the basic content is important. While it is primarily intended for use by EPA emergency response program personnel, area contingency planning is an inter-agency process, and the use of this handbook to inform other agencies of EPA's planning process is expected to lead to better inter-agency response. It will be used to promote active engagement of all stakeholders in the planning process, including federal, state, tribal governments and local agencies, non-governmental organizations and the private sector. An example of the handbook put to use is the Alaska Regional Response Team will use it as the basis for updating State wide planning efforts, including the Unified Alaska Contingency Plan and the State's ten subarea contingency plans. The handbook will be updated periodically in order to address the continually evolving areas of information technology and technical resources.

Measures

In FY12, EPA used three performance measures to help assess its work in responding to environmental emergencies and preparing for disasters. Two measures track the number of Superfund removal actions completed to protect American communities from releases that posed an imminent threat to public health or the environment. Often, these cleanups are of varying complexity and contain a wide variety of contaminants.

The third performance measure in this area tracks EPA's score on the annual CORE NAR, which is intended to assess EPA's level of preparedness for preventing, limiting, mitigating on containing hazardous materials during a manmade or natural disaster in the United States.

EPA exceeded all of its annual targets for these measures in FY12.

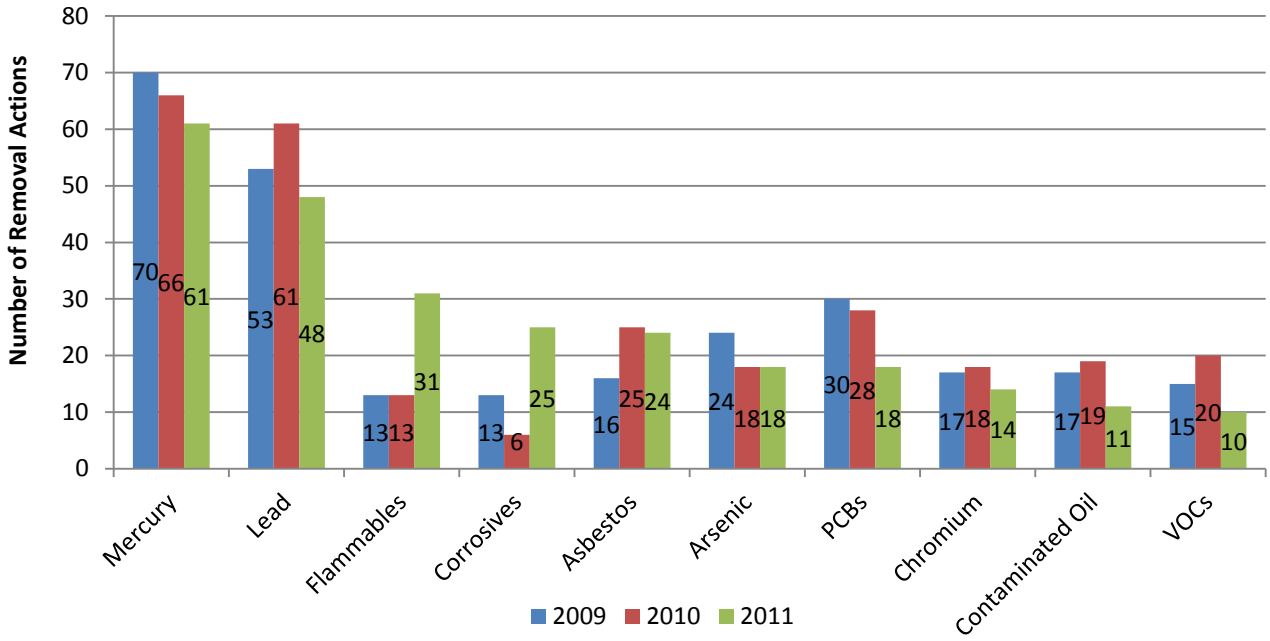
Status	Measure	Target	FY12 Value
●	Number of Superfund lead removal actions completed annually	170	232
●	PRP removal completions overseen by EPA	170	196
●	Score on annual Core National Approach to Response	70	75.8

Legend: ▲ Data Unavailable ● Goal Not Met ● Goal Met

Trends

EPA emergency responders have to account for a number of variables when performing cleanup actions. One of these key variables is the kind of contaminant that is being removed. EPA collects and analyzes data on the type of contaminant involved in removal actions because this information contributes to our understanding of how and why a given removal became necessary, and helps ensure that we are using our limited funding to perform the most critical emergency and removal actions (figure 11). EPA should be the last option, not be the *de facto* choice, in responding to environmental releases of common household or commercial contaminants that could be addressed by the state/locals. Over time, we expect this analysis to support both preventive actions and response planning and resource allocation.

Figure 11. Top 10 Contaminants at Removal Actions FY09-FY11



ACRONYM GLOSSARY

ACP – Area Contingency Planning

ASPECT – Airborne Spectral Photometric Environmental Collection Technology

AWP – Area Wide Planning

CA – Corrective Action

CAA – Clean Air Act

CEI – Community Engagement Initiative

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

EJ – Environmental Justice

EPA – Environmental Protection Agency

EPCRA – Emergency Planning and Community Right-to-Know Act

ESF – Emergency Support Function

EWDJT – Environmental Workforce Development and Job Training

FFSEP – Federal Facility Site Evaluation Project

FRP – Facility Response Plan

FYR – Five Year Review

GHG – Greenhouse Gas

ICI – Integrated Cleanup Initiative

IRIS – Integrated Risk Information System

LUST – Leaking Underground Storage Tank

MACT – Maximum Achievable Control Technology

MSW – Municipal Solid Waste

MTBE – Methyl-Tertiary-Butyl-Ether

NAR – National Approach to Response

NCP – National Contingency Plan

NHSM – Nonhazardous Secondary Materials

NPL – National Priorities List

NREL – National Renewable Energy Lab

NRT – National Response Team

OSWER – Office of Solid Waste and Emergency Response

PCB – Polychlorinated Biphenyls

PRP – Potentially Responsible Party

RAU – Ready for Anticipated Use

RCRA – Resource Conservation and Recovery Act

RMP – Risk Management Program

SMM – Sustainable Materials Management

SPCC – Spill Prevention, Control and Countermeasure

TANA – Technical Assistant Needs Assessment

TSD – Treatment, Storage and Disposal

USCG – United State Coast Guard

UST – Underground Storage Tank