

2016

Region 4 Superfund Annual Report



Reaching for the Next Level of
Public Health and Environmental Protection



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Region 4 Superfund:
FY 2017 Priorities

Cover photos illustrate EPA Region 4 Superfund program activities across the Southeast. See pages 2, 11, 21 and 24 for more information.

WELCOME

In 2016, the EPA Region 4 Superfund program focused on meeting and learning from the challenges of our time and building on the successes of the past. It was a year of significant milestones for the Region and our program. Today, with the 35th anniversary of the Superfund program just past, we have renewed our efforts to accomplish our mission – protecting the health of all Americans and safeguarding the environment.

This report goes beyond numbers and accomplishments. It shares how our program makes a visible difference in the communities we serve, and how we continually strive to be a high-performing organization through sound science, transparency, cost effectiveness and collaboration. Using these approaches, we identify and assess sites across the Southeast that most threaten human health and the environment. We use innovative approaches and cost-effective technologies to tackle contamination. We respond rapidly to environmental emergencies, oil spills and other natural or manmade disasters. We work closely with communities to address their concerns and support the return of sites to sustainable and beneficial use. And we seek to hold violators of the law and polluting parties accountable to ensure that they, and not the taxpayer, appropriately pay for the consequences of their actions.

This report also provides an opportunity for us to look forward and recommit to EPA's public health mission, making sure that our communities are healthy places for our children and grandchildren to learn, grow and play. This is possible only if we work together. Ensuring that communities have the resources they need to participate as informed partners in environmental discussions, problem solving and decision making is at the heart of our work. We rely on a broad coalition of local, state, tribal and federal partners to achieve our mission, with Region 4 Superfund's skilled and dedicated workforce serving as the foundation for our efforts.

In the year ahead, we look forward to new ideas and collaborations, building on Region 4 Superfund's vital community outreach, enforcement and scientific excellence, fiscal responsibility, and focus on environmental justice as we strive for the next level of public health and environmental protection.



Franklin E. Hill
Director
Superfund Division



*“ In Region 4,
the Superfund
program
makes a visible
difference in
communities
across the
Southeast on a
daily basis. ”*

Region 4 Superfund *in Action*

The Region 4 Superfund program plays a vital role in protecting public health and the environment in communities across the southeastern United States. Headquartered in Atlanta, EPA Region 4 serves the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and six federally recognized tribes.

Recognized regionally and nationally for sustained excellence and innovation in protecting human health and the environment, Region 4 Superfund responds rapidly and comprehensively to address environmental emergencies and clean up some of the nation's worst hazardous waste sites.



CERCLA

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), better known as Superfund, mandates that EPA respond to uncontrolled releases of hazardous substances that pose an immediate or future threat to human health and the environment.

Superfund provides guidelines for locating, investigating and cleaning up some of the most hazardous and highly polluted areas in the country.

(Sources: EPA Superfund site data, DeLorme, Esri, First American, Tele Atlas, United Nations World Conservation Monitoring Center, U.S. Geological Survey)

Fiscal Year (FY) 2016: By the Numbers

Region 4 Superfund is continuously seeking to improve the performance, protectiveness and cost efficiency of program activities across the southeastern United States, making sure communities have access to transparent, meaningful information and holding those responsible for cleanup accountable.

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA) PERFORMANCE MEASURE ACCOMPLISHMENTS



Percent of Superfund sites with settlement or enforcement action prior to remedial action start



Statute-of-limitation cases > \$500,000 addressed



Superfund-lead and Responsible Party-lead removal completions with or without an enforcement action



Remedial site assessment completions



REGION 4 SUPERFUND SITE UNIVERSE, 2016

247
*National Priorities List
(NPL) sites*

23
*Sites with Superfund
Alternative
Agreements*

60
Removal Action sites

By the Numbers

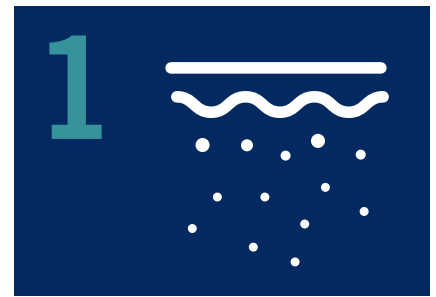
GPRA PERFORMANCE MEASURE ACCOMPLISHMENTS -- FY 2016



Remedial action project completions



Superfund sites with human health protection achieved



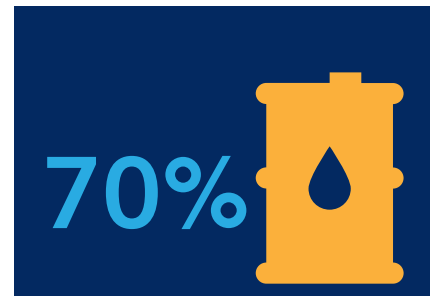
Superfund sites with groundwater migration under control



Superfund sites ready for anticipated use



Construction completions



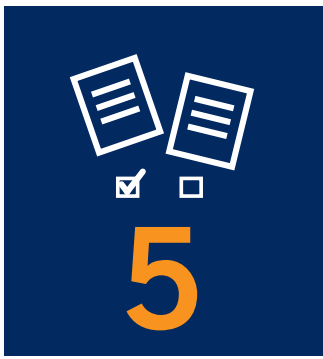
Oil storage facilities subject to Facility Response Plan (FRP) requirements in compliance



Facilities subject to Spill Prevention, Control and Countermeasure (SPCC) regulations in compliance

“ The Region 4 Superfund program makes a visible difference across the Southeast through education, innovative cleanups and rapid responses to protect public health and the environment, and by supporting the reuse of once-contaminated sites. ”

SUPERFUND PROGRAM MEASURES ACCOMPLISHED -- FY 2016



Remedial Investigation/
Feasibility Study (RI/FS)
Starts



Decision Documents



Remedial Design/Remedial
Action (RD/RA) Negotiation
Starts/Completions



Remedial Design Starts



Remedial Design
Completions



Remedial Action Starts



Remedial Action
Completions



Five-Year Reviews



Deletions



Emergency Response
Exercises



Sites Proposed to the NPL



FRP and SPCC Inspections

MAKING A VISIBLE DIFFERENCE IN COMMUNITIES

Headlines from 2016 include efforts in South Carolina, Mississippi and Georgia as the Region 4 Superfund program makes a visible difference in communities across the Southeast.

Solar Redevelopment at Former Landfill Recognized During Clean Energy Summit

Arkwright Dump is a former Superfund site in the Arkwright neighborhood, located just south of Spartanburg, South Carolina. Following cleanup and capping, the 30-acre property will soon host 12,000 solar panels that will bring jobs and a source of clean energy to power almost 500 neighborhood homes. In August 2016, the first Clean Energy Savings for All Summit was held in Spartanburg to highlight the successful partnership created by the ReGenesis Project. ReGenesis is a nonprofit organization that has collaborated with Region 4, Duke Energy, Solvay, the City of Spartanburg, the South Carolina Department of Health and Environmental Control, and others to facilitate the development of the solar facility.



State Representative Harold Mitchell of South Carolina discussing the new ReGenesis Health Care clinic, one of six community health centers in the area.

Region 4 Superfund Serves as Resource at Georgia Environmental Conference

In August 2016, representatives from Region 4 Superfund attended the Georgia Environmental Conference along with over 700 attendees from local, state and federal governments as well as business and industry leaders. Superfund staff participated in multiple panels, discussing remediation, redevelopment and sustainability initiatives. EPA also staffed the Superfund Redevelopment booth (right), which highlighted information about sites in reuse in Georgia.



SPARTANBURG: A CLOSER LOOK

In 1997, the Forest Park and Arkwright neighborhoods were surrounded by two Superfund sites, six brownfields and a chemical plant. Community organization ReGenesis set out to improve local quality of life and address the root of the problems.

Since 1997, when ReGenesis received a \$20,000 environmental justice grant from EPA, the community has leveraged more than \$300 million in local investments. Today, in addition to the planned solar farm, six community health centers, 500 units of affordable housing and the C.C. Woodson Community Center stand because of the collaborative efforts of EPA's Superfund and Brownfields programs, the community, and local, state, federal and foundation partners.



“Better Cleanups Through Superior Collaboration” – Region 4 Superfund Hosts First-Ever Superfund Team Symposium

This April 2016 conference brought EPA’s contractor community together with Region 4 staff to discuss opportunities for collaboration and innovation on new projects and existing cleanup efforts. The Superfund Team Symposium included roundtable discussions, panels and breakout sessions focused on site investigation and characterization, stakeholder engagement, disaster pre-planning and response, enforcement support services, remediation technologies, risk assessments, reuse and redevelopment, lifecycle data management, management of emerging contaminants, project coordination, and greening cleanups. More than 300 people from Region 4, other federal agencies and EPA’s contractor community attended the two-day symposium.

Symposium Outcomes in Action: The Dual Training Workforce Program

The Dual Training Workforce Intern Program (DTWP) was one immediate outcome of the 2016 Superfund Team Symposium. The DTWP provides college students with an opportunity to intern with the Region 4 Superfund program and Superfund contractor Black & Veatch during summer and winter breaks. The program offers a meaningful work experience similar to what can be expected after graduation in environmental career fields. As part of the program, interns are able to develop their scientific knowledge and expertise.



DTWP interns working in the field and meeting with senior Region 4 Superfund and Black & Veatch staff.



Symposium discussions and outreach efforts.



DTWP Benefits for Student Interns

- Learning from environmental professionals.
- Applying classroom theory.
- Performing meaningful work.
- Experiencing EPA and contractor work environments.

DTWP Benefits for Region 4 and Black & Veatch

- Creating a diverse pool for future employment.
- Building knowledge and expertise.
- Developing relationships with colleges and universities.

Advancing Environmental Justice

EPA defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Region 4's Superfund and Environmental Justice programs collaborate closely to make sure minority, low income and tribal communities facing disproportionate environmental risks have opportunities for meaningful participation in environmental decision-making. We also coordinate closely with EPA headquarters and states to support initiatives that provide all people living near Superfund sites with technical assistance, training opportunities and other services.

Region 4 Superfund and Environmental Justice

As a part of Region 4's Environmental Justice Policy, Region 4 Superfund has developed a procedural manual that outlines how the Division integrates environmental justice principles into programs, procedures and practices, and assists in carrying out responsibilities in a way that furthers our commitment to incorporate environmental justice considerations into our everyday work.

As part of EJ 2020, EPA's environmental justice strategy for 2016-2020, Region 4 Superfund is also tracking reduced human exposures to contamination at hazardous waste sites, with an emphasis on minority, low-income and vulnerable communities. Sites are defined as Human Exposure Under Control (HEUC) when there are no unacceptable human exposure pathways and EPA has determined the site is under control for current conditions site wide. Region 4 Superfund will report on the number of facilities and sites with human exposures under control, the number remaining, and the percent with human exposures under control in communities with environmental justice concerns.

The HEUC measure is important because, along with Executive Order 12898, it draws attention to the plight of overburdened and underserved communities surrounded by hazardous waste sites. Because minority and low-income populations are highly concentrated in neighborhoods with multiple hazardous waste facilities, they continue to be particularly vulnerable to negative impacts from these facilities.



“EPA must work each and every day – hand in hand with other federal agencies, states, tribes and local communities – to improve the health of American families and protect the environment one community at a time, all across the country.

It's only when we work together that we will be able to deliver these basic rights to every American, no matter who they are, where they live or how much money they make. Everyone deserves to have their health protected from environmental exposures.”

Gina McCarthy
EPA Administrator

Sustaining Connections with Georgia Communities

Cleanup of the Savannah River Site (SRS) – a 310-square-mile Superfund NPL site operated by the Department of Energy – is an ongoing, decades-long process. Region 4 Superfund is overseeing the cleanup under CERCLA. The cleanup is protecting public health while providing hundreds of local jobs. Several nearby communities are potentially impacted by the site, including Shell Bluff in Burke County, Georgia, just across the Savannah River from the site. Shell Bluff is also adjacent to Plant Vogtle, an active nuclear power plant.

In August 2016, Region 4 Superfund staff hosted Matthew Tejada, the national director of EPA’s Office of Environmental Justice, for a trip to Shell Bluff. The Georgia Women’s Action for New Direction (Georgia WAND) extended the invitation to meet with local leaders and tour the area. Georgia WAND is an organization that seeks to direct women’s voices into a powerful movement for social change. During the two-day visit, EPA staff met with representatives from diverse community organizations, including Spelman College, Harambee House, The Imani Group, Ogeechee Riverkeeper, neighborhood groups and several area churches. Presentations were made to the group by Georgia WAND, Region 4 Superfund staff, Savannah River Ecology Laboratory (SREL) staff, and Matthew Tejada.

The group also discussed community priorities, including public health and safety, outreach and education, and economic development. Superfund staff discussed available Agency resources and emphasized EPA’s long-term commitment to protecting public health and the environment. Superfund is actively engaged with WAND and SREL in an outreach and sampling effort for metals and radionuclides in the area. The program is also conducting a technical needs assessment to help determine the path forward for the efforts in the Shell Bluff community in 2017.



Shell Bluff resident and Georgia WAND community leader Annie Laura Howard sharing the history of the Shell Bluff community with Matthew Tejada and tour participants.



A CLOSER LOOK: *Community Engagement and the Savannah River Site*

Community outreach and engagement are a vital part of EPA’s activities at the Savannah River Site, a former nuclear production plant in Aiken, South Carolina. In recent years, Region 4 has collaborated with the U.S. Department of Energy (DOE) and The Imani Group on community meetings focused on environmental justice in the Central Savannah River Area.

The CSRA, as the area is known, includes 13 counties in Georgia and five counties in South Carolina. The meetings provide area communities with updates on the site’s cleanup status, focused on community capacity-building opportunities such as the Superfund Job Training Initiative, and shared information on technical assistance grants and resources.

Community Engagement and Public Health

Community involvement is a core component of the Superfund process, and for good reason. Nationally, according to the U.S. Census Bureau, about 53 million people live within three miles of a Superfund NPL site. Early and meaningful community participation during Superfund cleanups enables the public to remain informed about site cleanup actions and how people and the environment are affected by the Superfund process. The collaboration also produces better outcomes for everyone, including the environment.

Region 4 Superfund works closely with EPA's Community Engagement Initiative to emphasize meaningful, "early and often" community engagement and public outreach as core components of the program's activities. We recognize that the needs of each community are unique and tailor our approach to best meet those needs. Region 4's community engagement goals include ensuring transparency and accessibility in the Superfund decision-making process, providing information and technical assistance that makes a difference for communities, and producing site outcomes that are responsive to stakeholder concerns and aligned with community needs.

Community Coalition in Alabama – Building Partnerships, Pursuing Opportunities

In North Birmingham, neighborhoods near the former Walter Coke industrial facility and the 35th Avenue Superfund site have come together to develop a shared vision for the future. Years of industrial operations

and contamination left behind a legacy of broken trust and limited resources. To change this, EPA supported the formation of the North Birmingham Community Coalition, creating a proactive community partner to work with the Agency.

In February 2016, Coalition members traveled to Atlanta to participate in a Federal Interagency Working Group on Environmental Justice meeting. Members learned about available federal resources; the agencies learned about the community's history, concerns and priorities. In May 2016, the Coalition shared its Revitalization Action plan with the Northern Birmingham community. Coalition priorities include access to health care, community revitalization and improved housing conditions. The Plan includes a detailed conditions analysis, implementation partners and strategic action plans. The Coalition is now moving forward with the project's next steps.



Second graders at Pleasantdale Elementary School in Doraville, Georgia, celebrating Earth Day in May 2016. Region 4 provided the class with educational materials; the day's activities included making Lorax mustaches as a reminder to help the planet.

Safeguarding Our Future

Protecting children's health is central to EPA's mission, and the Agency has taken great strides to improve the environment for children where they live, learn and play. Environmental education is also a key part of ensuring children's health. Region 4 Superfund staff lead efforts that support Children's Environmental Health (CEH) across the Southeast, visiting schools, making presentations at community centers, and sharing information to support healthy communities and advance environmental protection.

Innovative Youth Outreach in Mississippi Builds Community Capacities

Cleanup investigations are ongoing at the Kerr-McGee Chemical Corporation site, a former wood-treating facility in Columbus, Mississippi. To help local youth better understand the site's history and sampling activities, Superfund staff participated in a first-ever outreach event at the Columbus Housing Authority in 2016. Collaboration among Region 4, the Multistate Trust (the site's PRP group) and J5 (the site's local minority-owned contractor) made the event possible.

Summer Camps in Alabama Support Healthy Communities

For the second year running, Region 4 Superfund was part of a series of environmental summer camps in North Birmingham, Alabama. More than 450 children participated in 2016. The goal is to help youth learn about healthy living, making a difference in their community and nearby environmental activities. An ongoing partnership between the City of Birmingham and Region 4 makes the summer camps possible. Looking forward, Region 4 is evaluating opportunities to expand its environmental summer camp series to several other Alabama locations.



PROTECTING CHILDREN'S ENVIRONMENTAL HEALTH

Children are highly sensitive to pollution. At EPA, protecting children from environmental health risks is fundamental to our vision of making the world a better place for future generations.



Children rotated through 12 hands-on activity stations on a variety of environmental topics.



Reuse Matters

Looking to the future at Superfund sites is a powerful tool. Considering reuse engages communities, helps protect remedies, fosters long-term stewardship, identifies opportunities for faster and lower-cost cleanups, informs land use controls, provides environmental benefits, and enables economic opportunities as well as recreational and ecological amenities. These benefits matter. Nationally, one in four Americans live near a Superfund National Priorities List site.

Region 4 Superfund is committed to helping communities restore contaminated sites as valued assets. Region 4 views the revitalization of communities affected by contaminated properties as a key part of our mission to protect public health and the environment. By the end of FY 2016, 102 Superfund sites in the Region were determined to be ready for anticipated use.

Reuse Benefits for People and Pets in South-Central Mississippi

At the Davis Timber Company Superfund site near Hattiesburg, site owners, community organizations and local governments have worked together with Region 4 and the Mississippi Department of Environmental Quality (MDEQ) on a coordinated approach to the cleanup of this former wood treatment facility. The approach has linked cleanup and redevelopment, with a protective remedy and land revitalization as overarching goals.

Today, following cleanup, the site is home to Breland Community Center, the Hub City Humane Society's animal shelter, the Fields of Barktopia dog park, parking, trail connections and restored habitat for pollinators. "We're really fortunate to be on the property," said Humane Society Manager Virginia Cheatham. "Especially being able to give back to the community something that was desperately needed."



DID YOU KNOW?

Accelerated cleanup of the site finished in 2012, two months ahead of schedule and \$400,000 under the project's \$4.6 million budget. This photo shows site wetlands protected by the cleanup.

Green initiatives during cleanup included recycling 325,000 pounds of steel, reusing 3,000 cubic yards of concrete as rip rap, reusing 2,000 cubic yards of mulch from land clearing activities, and using an improved revegetation plan incorporating native plants, water retention soil amendments, and the recycling of treated wastewater.



Sustained Excellence at Martin-Marietta Sodyeco, Inc. Site

ReVenture Park continues to serve as a national model for adaptive reuse and innovative redevelopment projects. This facility near Charlotte is one of the leading renewable and clean energy projects on a Superfund site in the United States. Region 4's Superfund and Resource Conservation and Recovery Act (RCRA) programs and the North Carolina Department of Environment and Natural Resources (NCDENR) have worked closely with developer Forsite Development, Clariant Corporation, the site's owner, and state and community partners to clean up the area and support its return to productive use.

Forsite Development is converting industrial building space into a business park focused on energy efficiency, renewable energy and environmental technology. The project is home to a biomass combined heat-and-power project, an algae-to-fuel pilot plant, a fuels and lubricants distributor, a liquids tote washing and recycling facility, a composite walls contractor, a composting operation, greenhouse facility and a 35-acre aquaculture project, among others. New investments to date exceed \$17 million. The developer recently sold a 10-acre parcel to a medical group that will be breaking ground on an 80,000-square-foot medical office building in the summer of 2017. This facility will bring more than \$30 million in additional investment to the site.

Region 4 Hosts Biannual Superfund Redevelopment Meeting in Charlotte

The 2016 gathering brought EPA's Superfund Redevelopment Coordinators together to discuss current opportunities and lessons learned from supporting the safe and appropriate reuse of Superfund sites nationwide. Region 4 Superfund Division Director Franklin E. Hill's opening remarks focused on community benefits of reuse, including economic revitalization, sustainability and climate change impact mitigation. The meeting included intensive discussions focused on communications, outreach and training tools as well as a visit to ReVenture Park, the innovative business hub at the nearby Martin-Marietta Sodyeco, Inc. site.



Duckweed growing in a former containment point at ReVenture Park. Duckweed clarifies water by removing excess nutrients, nitrogen and phosphates. Duckweed can be used as a biofuel when dried.



Presentation and group discussion during the 2016 Superfund Redevelopment Meeting.

REACHING FOR THE NEXT LEVEL OF ENVIRONMENTAL PROTECTION

2016 Highlights

Record Settlement Agreement Moves Region 4 Cleanups Forward

EPA recently reached a nationwide settlement agreement with the Kerr-McGee Corporation and related subsidiaries of Anadarko Petroleum Corporation. At \$5.15 billion, it represents the largest recovery for the cleanup of environmental contamination in U.S. history. The agreement covers more than 2,700 sites in 47 states; three of the four NPL sites are located in Region 4.

Funded by settlement resources, significant progress was made at these three Kerr-McGee Corporation Superfund sites – as well as a fourth site managed by Region 4’s Resources Conservation and Recovery Act (RCRA) program – in 2016.

- **Columbus, Mississippi:** Region 4 is currently conducting the RI/FS at this former chemical manufacturing facility. Region 4 will then issue a proposed cleanup plan to address any contamination and related risk to people and the environment.
- **Navassa, North Carolina:** Region 4 and the site’s Trustee, the Multistate Environmental Response Trust, are working with local government and the community to plan for a cleanup of this former wood-treating facility that protects public health and can be leveraged for future prosperity. One future use possibility is locating a Gullah Geechee Heritage Center at this former rice plantation.
- **Jacksonville, Florida:** Region 4, the site’s Trustee and the Florida Department of Environmental Protection are working closely with community leaders and site stakeholders to develop a strategy to address contamination at this 31-acre former pesticide and herbicide manufacturing facility. The area is currently undeveloped and vegetated with native grasses and shrubs. EPA issued the Proposed Plan for the site’s cleanup in September 2016.
- **Meridian, Mississippi:** With Region 4 and MDEQ oversight, the Trustee is completing site investigations and fieldwork that will guide upcoming RCRA cleanup activities at this former wood-treating facility. Earlier interim cleanup measures included a bioremediation study and off-site ditch excavation.



LONG-TERM CLEANUPS: PROTECTING SAFE, HEALTHY COMMUNITIES

Some cleanups take place at complex, highly contaminated sites such as NPL sites and sites with Superfund Alternative Agreements.

These federal and private-party sites often require several years to fully study the problems, develop a permanent remedy and clean up hazardous substances.

Region 4 Superfund works closely with communities and state, tribal and federal partners to ensure the protection of human health and the environment at these sites.



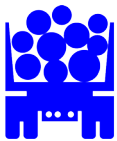
Navassa Mayor Eulis A. Willis and Region 4 Superfund Division Director Franklin E. Hill touring the Navassa site in 2016.

Region 4 Sites Proposed for Listing on the NPL, FY 2016



Former Custom Cleaners (Memphis, Tennessee)

Dry cleaning operations at this site from 1945 to the mid-1990s contaminated soil, indoor air and groundwater with tetrachloroethylene (PCE), a dry cleaning solvent.



Post and Lumber Preserving Co. Inc. (Quincy, Florida)

A wood preserving facility operated at this site from 1948 to 1990. Its operations contaminated soil, sediment and groundwater with pentachlorophenol (PCP), arsenic and dioxin.

Investigations are ongoing at both sites. Through these efforts, Region 4 Superfund and state agencies – the Tennessee Department of Environment and Conservation (TDEC) and the Florida Department of Environmental Protection (FDEP), respectively – will protect people and the environment from site contamination.

Innovative Project in Tennessee Ensures Long-Term Protectiveness

In 2016, Region 4 Superfund completed a major remedy upgrade at the Velsicol Chemical Corp. (Hardeman County) site in Toone, Tennessee. The site includes an area where Velsicol Chemical Corporation operated a 24-acre landfill from 1964 to 1973. After the landfill area was capped in 1997, a follow-up survey found that some buried waste material extended beyond the capped area and improper cap slope created drainage and erosion problems.

Landfill cap extension and drainage improvement construction began in 2015 with installation of mechanically stabilized earth retaining walls, cap extensions, “Smart Ditch” drainage channels and outfalls. The Smart Ditch is an innovative alternative to normal rip-rap drainage construction; it provides for better drainage and eliminates the site’s cap erosion issues. In addition, 4 acres of scarred earth from a former on-site borrow area were restored to ecological use. The area was regraded and planted with native grasses and wildflowers, providing valuable habitat for pollinators. Use of the grasses and wildflowers also decreases overall maintenance requirements – the area requires less-frequent watering and mowing – and enhances the remedy by providing erosion control.



Views of the Velsicol Chemical Corp. site’s Smart Ditch drainage channel.



2016 Highlights

Interim Remedy Selected for Site in Western North Carolina

In February 2016, Region 4 Superfund issued an Interim Action Record of Decision (ROD) for this former electronics components manufacturing facility in Asheville, North Carolina. The remedy is a source control action for non-aqueous phase liquid (NAPL) and trichloroethene (TCE) in the groundwater beneath the former CTS plant. It will employ electrical resistance heating and in-situ chemical oxidation technologies to treat a 3.1-acre area containing 208,250 cubic yards of contaminated material. EPA and the community worked together to push for a robust source-control strategy that expanded the treatment area three-fold and the volume five-fold from CTS Corporation's initial proposal. A Consent Decree has been successfully negotiated with CTS, Northrup Grumman and the property owner. Implementation of the remedy is anticipated to start in 2017.

Final Remedy in Place at Former Manufacturing Facility in Mississippi

Working with the State of Mississippi, Region 4 completed construction of the final remedy for the Chemfax, Inc. site in December 2015. In total, 109,211 tons of contaminated soil and sediment were removed during the cleanup. A facility on site produced synthetic hydrocarbon resins and waxes from petroleum products. Facility operations contaminated groundwater with benzene, toluene, ethylbenzene and naphthalene. Groundwater sampling will continue into the future to monitor natural attenuation.

Third Annual STEMFest Draws Thousands in Coastal Georgia and South Carolina

In September 2016, Region 4 Superfund staff joined Georgia Southern University for its third annual Science, Technology, Engineering and Math (STEM) Festival. The idea was to provide takeaway learning so all people could see how STEM relates to their lives and engage



View of the CTS of Asheville, Inc. site.



State of Mississippi, state contractor and EPA staff inspected the site together in January 2016.



More than 3,000 children and their families participated in the 2016 STEM Festival.

students in considering STEM careers. Activities such as “Captain DECON” exercises helped elementary, middle and high school students learn about Region 4 Superfund’s emergency response activities, while exploration stations provided hands-on activities for all ages.

Alabama Cleanup Tackling Soil Contamination, Restoring Residential Properties

The 35th Avenue Superfund site in Birmingham, Alabama, includes parts of three North Birmingham communities – Collegeville, Fairmont and Harriman Park – affected by nearby industrial activities. After sampling found about 400 properties with soil contamination above acceptable levels, a multi-phase removal action to protect public health and the environment began in 2014. The site is currently in Phase 4, which began in July 2015. It focuses on addressing all remaining residential properties identified for cleanup. To date, Region 4 Superfund has addressed more than 230 properties, including three schools and two low-income apartment complexes. More than 20,000 tons of contaminated soil have been removed and landfilled off site.



Residential yard cleanup, before and after (2016).



ECONOMIC IMPACTS OF CLEANUP AND REUSE

Following cleanup, Superfund site reuse can revitalize local economies with jobs, new businesses, tax revenues and spending. EPA recently took a closer look at these benefits.

Superfund sites across Region 4 are home to commercial facilities, shopping centers, offices and residential areas. Many sites continue to host industrial and manufacturing operations. Others are parks, recreation areas and wildlife refuges.

On-site businesses and organizations on current and former Superfund sites in Region 4 provide over 11,500 jobs and contribute an estimated \$627 million in annual employment income for residents across the Southeast. Restored on-site properties in Region 4 generate about \$6.1 million in annual property tax revenues for local governments.

2016 Highlights

Time-Critical Response in North Carolina Protects Public Health

In late 2015, Region 4's Emergency Operations Center received a National Response Center notification of potential improper demolition activities and alleged release of asbestos at the Old Davis Hospital site, an abandoned medical complex in Statesville, North Carolina. Region 4 Superfund worked with the North Carolina Health Hazards Control Unit, the state agency that implements the asbestos program in North Carolina, to evaluate site conditions.

After investigations identified friable asbestos in two large demolition debris piles that posed a potential threat to the surrounding community and anyone entering the site, a time-critical removal action by Superfund in the summer of 2016 mitigated risks associated with the asbestos-containing material in the debris piles.



Region 4 Superfund's time-critical cleanup activities at the Old Davis Hospital site.



EMERGENCY RESPONSE AND REMOVALS:

RESPONDING RAPIDLY, MAKING A DIFFERENCE

EPA's Superfund Emergency Response and Removal program takes action quickly to remove imminent threats to public health and the environment.

Whether there is a chemical leak at a manufacturing facility, a landfill fire, an uncontrolled oil release or a natural disaster, Region 4 Superfund will be there, coordinating closely with local responders and other emergency officials.



A CLOSER LOOK: ASBESTOS

Asbestos is a mineral fiber that occurs in rock and soil. Because of its fiber strength and heat resistance, asbestos has been used in a variety of building construction materials for insulation and as a fire retardant. Asbestos has also been used in a wide range of manufactured goods.

Exposure to asbestos increases people's risk of developing lung disease. Friable asbestos-containing material is any material that contains more than one percent asbestos by weight or area.

Spill Response in Central Alabama Protects Natural Resources

In September 2016, Region 4 Superfund responded rapidly to a 310,000-gallon gasoline spill from a ruptured pipeline in Shelby County, Alabama. The fuel travelled a short distance down a hill into a series of sediment retention ponds. The ponds trapped the fuel, preventing a potentially catastrophic discharge to the Cahaba River and Peel Creek. Region 4 worked closely with the operator, Colonial Pipeline, the Alabama Department of Environmental Management (ADEM), and the local fire department and emergency management agency to address the spill.

EPA mobilized On-Scene Coordinators, U.S. Coast Guard Gulf Strike Team members, and Superfund Technical Assessment and Response Team members. Superfund performed oversight of removal operations, and assisted Colonial with a robust safety plan to address the explosive and toxic vapors given off from the ponded fuel. Vacuum pumps, air-powered skimmers and air-powered pumps removed the fuel from the pond. Region 4 Superfund also led a shoreline assessment; Colonial excavated shorelines where ponded gasoline soaked into the soil. Colonial excavated the damaged section of pipe in consultation with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA).

Looking forward, Superfund remains engaged with Colonial on the spill as the operator reconstructs the damaged line in consultation with PHMSA. Once completed, Colonial will excavate the nearby pipeline. ADEM will then assume responsibility for the long-term remediation of the impacted ponds. Water samples from Peel Creek and the Cahaba River have shown no evidence of gasoline or gasoline components.

THE OIL PROGRAM: PREVENTING, PREPARING AND RESPONDING

Oil spills endanger public health, imperil drinking water, devastate streams and natural resources, and disrupt the economy. EPA's mission, as authorized under the Clean Water Act, the Oil Pollution Act of 1990, and the National Contingency Plan, is to prevent harm to the environment associated with the threatened or actual discharges of oil into the surface waters of the United States.

Superfund monitors and inspects oil storage facilities, conducts spill preparation drills and other training, conducts emergency oil removals, and implements removals at abandoned and leaking oil wells to prevent releases.

The goal of Superfund's oil spill prevention and removal program is to work cooperatively with the oil industry and other governmental agencies to reduce the number, the size and the impact of oil spills into waterways and other associated environmentally sensitive areas. Our program is one of the most comprehensive and effective in the nation.



The pond after removal of gasoline and shoreline excavation.

2016 Highlights

Accident Response Exercises in Georgia Build Capacities

Region 4 Superfund staff participated in the Atlanta Large-Scale Aviation Accident Response Exercise in February 2016. Held at Georgia Gwinnett College, the tabletop exercise was sponsored by the Federal Emergency Management Agency (FEMA) and the National Transportation Safety Board. The exercise tested response capabilities after a large-scale aviation accident at Hartsfield-Jackson Atlanta International Airport. Staff participated in breakout discussion groups focusing on patient tracking and fatality management. Staff addressed concerns related to potential environmental contamination and health risks to humans and wildlife in the debris field.

Region 4 Superfund staff were also part of the Nuclear Weapon Accident/Incident Exercise held at the Naval Submarine Base Kings Bay in Kingsland, Georgia, in April 2016. The full-scale exercise focused on an accident involving a nuclear weapon in Department of Defense custody at a military installation. During the exercise, the U.S. Navy's Environmental Coordinator requested the activation of Region 4's Regional Response Team (RRT) for the first time. During the exercise's Facilitated After Action Review (FAAR), Region 4's role was recognized by Department of Defense officials and the Rear Admiral of the U.S. Navy's Region Southeast (NRSE).

Additional FY 2016 Homeland Security Highlights

In 2016, Region 4 Superfund:

- Conducted or participated in more than 60 outreach, exercise and training events with Local Emergency Planning Committees, state and county emergency management agencies, local response organizations such as fire department and hazmat units, and private industry.
- Participated in a radiological decontamination evaluation in Israel and met with the Israeli Ministry of Environmental Protection to discuss environmental response strategies and cleanup techniques.
- Worked as part of a multi-Agency collaborative planning team to update sections of FEMA's All Hazards Plan focused on nuclear and radiological incidents as well as incidents related to weapons of mass destruction.

HOMELAND SECURITY

EPA plays a vital role in homeland security. For years, EPA has been responding to oil and chemical spills and natural disasters. EPA's long-standing competencies in these areas – emergency response, hazardous material cleanup, water quality protection, air quality monitoring and radiation detection – provide the Agency with a base of expertise and the capabilities necessary to address today's homeland security challenges. These challenges include a significant environmental component, ensuring that the nation has clean air, clean and safe water supplies, restored lands and healthy communities.

In 2016, Region 4 maintained a program emphasizing day-to-day emergency response while building our relationships with state and local partners and enhancing our level of preparedness. We also continued to serve as a national leader in sharing the Agency's preparedness efforts and expertise with our partners and seeking new opportunities for enhanced communication, intergovernmental coordination and shared research with our partnership network.

Construction Complete Remedy Achieved in Mississippi

In 2016, coordinated Superfund response by Region 4 Superfund's Emergency Response, Removal and Prevention Branch and the Restoration and Sustainability Branch enabled final cleanup activities at the American Creosote Works, Inc. site in Louisville, Mississippi. After rerouting Hughes Creek and removing a creosote layer below the former creek bed, Region 4 and the Mississippi Department of Environmental Quality completed a final addition to the site's containment cell. Looking forward, the City of Louisville is developing reuse plans for industrial expansion at the site.

Cleanup Supports Solar Facility in North Carolina

To clean up the North Carolina State University (Lot 86 Farm Unit #1) site near Raleigh, Region 4 Superfund, the North Carolina Department of Environment and Natural Resources (NCDENR), and the University treated and capped soils. They also extracted groundwater, treated it with air strippers and discharged treated groundwater to the city sewer system. Today, the former landfill hosts a 12-array solar facility that generates 75.6 kilowatts of power. Under a lease from the State of North Carolina, Carolina Solar Energy LLC (CSE) owns and operates the 432-photovoltaic-panel system. The facility has an innovative design; instead of grading and digging into the cap for concrete foundations, CSE installed a recycled plastic foundation. It allowed for solar array construction and ballasting on the ground surface.



Solar panels on the capped part of the site.

SITE HISTORY

A timber processing and creosote wood-preserving facility operated at the 120-acre site for 86 years. EPA and MDEQ have worked closely to address widespread creosote contamination. EPA led multiple removal actions between 1984 and 2016. The final remedial action started in 2012 and, coordinated with a removal action completed in 2016, resulted in the construction completion of the site's remedy.



Top: View of the site's containment cell.
Bottom: Hughes Creek following cleanup, November 2016.

2016 Highlights

Rapid Response at Active Military Facility in Florida Protects Children's Health

Region 4 Superfund, the Air Force and the Florida Department of Environmental Protection (FDEP) are working together on the cleanup of Tyndall Air Force Base in Panama City, Florida. In 2015, the Bay County School District notified the Air Force of plans to renovate parking and bus turnaround areas at Tyndall Elementary School. The school is built on a former training range; lead shot is present in the sandy soil. At the time, a remedial investigation was being conducting at the school under the terms of the site's Federal Facility Agreement.

Region 4, the Air Force and FDEP had immediate concerns that the renovation work could disturb contaminated soil and lead shot, creating exposures. The parties moved quickly, conducting a time-critical removal action (TCRA) that removed about 10,200 cubic yards of contaminated surface soils in front of the school. In 2016, a second TCRA addressed lead-shot areas located between school buildings. The accelerated effort resulted in coordinated action that protected children's health and the environment and enabled the school system to move forward with its renovation plans on schedule. The site's broader remedial investigation for the area is ongoing.



Excavation underway at Tyndall Elementary School.

FEDERAL FACILITIES

From nuclear weapons plants and military bases to landfills and fuel distribution stations, the U.S. government operates thousands of facilities across the country. Many federal facilities are contaminated because of past waste disposal practices and unintentional releases. Contaminated federal facilities such as Department of Defense (DOD) military bases and Department of Energy (DOE) nuclear reactor, processing and research centers are complex sites that require coordination with EPA's partners.

Region 4 Superfund collaborates with many groups, including governmental and non-governmental organizations and local stakeholders, to coordinate cleanup, technical assistance and restoration efforts at 20 federal facilities on the NPL. Innovative cleanup solutions are enabling the restoration of these facilities so they can continue to serve an important role.

Region 4's responsibilities include oversight of complex cleanups at 17 DOD bases and three major DOE complexes on the NPL: the Savannah River Site in South Carolina, the Oak Ridge Reservation in Tennessee and the Paducah Gaseous Diffusion Plant in Kentucky. Region 4 also implements the Base Realignment and Closure (BRAC) program in the Southeast, working closely with our federal partners to facilitate the reuse and redevelopment of federal facilities at NPL sites.

Historic Milestone Reached in Decommissioning Manhattan Project Facilities in Tennessee

In August 2016, Region 4 Superfund staff joined local, state and other federal officials to watch the final wall of Building K-27 fall at the East Tennessee Technology Park. The event marked the first time in history that all uranium-enrichment gaseous diffusion buildings at a site were cleaned up and demolished. The building, the last of five primary gaseous diffusion buildings, was part of the Manhattan Project, which supplied enriched uranium for nuclear weapons and production of fuel elements for nuclear reactors. Operations at the Oak Ridge Reservation began in 1945 and ended in 1985. DOE began major environmental cleanup efforts in 1987. In 1996, the area was renamed the East Tennessee Technology Park.

Region 4 Superfund worked diligently with DOE to make sure all demolition activities were completed safely and protectively. Successful demolitions of the four other buildings took place from 2006 to 2015. Program staff also worked with DOE staff on the use of a portable treatment unit to treat and safely discharge a million gallons of water that had accumulated in the basement of an electrical switchhouse supporting the K-27 structure. Region 4 Superfund oversight activity also extends to over 400 additional buildings and other structures on site, and includes review of DOE soil cleanup action completion reports to ensure the long-term protectiveness of site remedies.

As properties are cleaned up, they are transferred to the City of Oak Ridge and the Community Reuse Organization of East Tennessee. Together, they are working to transform the area into a private-sector brownfield industrial complex capable of sustaining hundreds of jobs and millions of dollars in capital investment for the region. Region 4 Superfund has signed off on the transfer of almost 850 acres of remediated land at the East Tennessee Technology Park. More than 332,000 square feet of building space have been made available for new economic development to date, leading to an estimated \$100 million private investment in technology, industry and renewables. The goal is to complete soil cleanup and transfer of the East Tennessee Technology Park by 2020.



Aerial view of the site's primary gaseous diffusion buildings prior to demolition.



Building K-27, before and during demolition, 2016.

2016 Highlights

Superfund Job Training Provides Training and Job Opportunities in Mississippi

Sixteen trainees completed EPA's Superfund Job Training Initiative (SuperJTI) training at the Kerr-McGee Chemical Corp – Columbus Superfund site in Columbus, Mississippi. Through a partnership with local contractor J5, SuperJTI provided local job seekers with new skills and work experience. SuperJTI staff, community partner Memphistown Community Action Group and Pastor Darren Leach conducted outreach activities and hosted 10 candidate orientations to publicize the training and attract interested candidates.

After a rigorous screening process, trainees completed pre-employment courses on money management, cultural competence and environmental justice. Trainees also completed the technical training curriculum required to work on site, earning certifications for CPR/First Aid and the 40-hr Hazardous Waste Operations and Emergency Response (HAZWOPER).

A graduation ceremony attended by Columbus Mayor Robert E. Smith, Sr., honored the trainees. Following graduation, all 16 trainees were placed in positions with J5 working on site cleanup as well as demolition projects for the City of Columbus.

Upgrades Strengthen Region 4 Emergency Response Capabilities

Region 4 Superfund has initiated renovations for its Regional Emergency Operations Center to provide enhanced audio visual systems for the Division's conference rooms. The project will upgrade current systems and provide staff with enhanced access to data and presentations, video teleconference calls and external connections.



THE SUPERFUND JOB TRAINING INITIATIVE

SuperJTI's goal is to help communities create job opportunities and partnerships that remain long after site cleanups are completed.



SuperJTI National Program Manager Melissa Friedland (left) and project partners at the graduation ceremony for the Kerr-McGee SuperJTI.

Major Milestone at Former Nuclear Disposal Area in Kentucky

Construction of the final cap at the Maxey Flats Nuclear Disposal site finished in 2016. The cap's installation is a major milestone in what has been Kentucky's most-costly state-funded environmental cleanup. The project was funded with \$18 million in trust funds and \$17 million in bonds approved by the Kentucky state legislature.

The site accepted radioactive wastes from 1963 to 1977. The Commonwealth of Kentucky intended for the landfill to generate economic development by attracting the nuclear industry with a conveniently located, permitted landfill for disposal of low-level radioactive wastes generated by prospective industries. While economic development goals were not met, the landfill did attract disposal of low-level radioactive wastes from many private companies, medical research facilities, universities, and federal agencies. In all, more than 4.75 million cubic yards of wastes containing plutonium, uranium, thorium and heavy metals were buried on site in 46 large, unlined earthen trenches. Over time, radiation from the buried wastes leached out of the trenches and migrated off site.

In 1991, Region 4 Superfund finalized a cleanup plan to entomb the landfill and its trenches in perpetuity under thousands of tons of compacted soil to allow time for the buried wastes to stabilize, allow the radioactivity to decay, and stop water infiltration into the trenches. The landfill covers about 60 acres (45 football fields). After construction of an interim cap in 2002, the final cap was put in place in 2016. It consists of more than 1 million cubic feet of compacted soil, a multi-layer geosynthetic engineered capping system with a geosynthetic clay liner, and protective soil and a vegetative layer supporting a grass cover. Looking forward, the Commonwealth of Kentucky will undertake monitoring and custodial care of the site in perpetuity.



Aerial view of the site cap, October 2016.

Polluters Pay, Enforcement First

Enforcing federal environmental laws is a central mission of EPA's regional offices. Every year, EPA takes hundreds of enforcement actions against violators of federal environmental laws. Superfund enforcement and cost recovery protects human health and the environment by compelling the parties responsible for contamination to clean it up or pay for the cleanup. In turn, resources returned to the Trust Fund help make cleanup activities possible in communities across the Southeast. While compliance with the nation's environmental laws is the ultimate objective, enforcement is a vital part of encouraging governments, businesses and other parties to meet their environmental obligations.

Region 4's Superfund's experienced and trained staff vigorously pursues enforcement and cost recovery activities. In line with EPA enforcement goals, we returned \$22.6 million in taxpayer funds to the Agency and reached agreements with potentially responsible parties (PRPs) to conduct \$38 million in cleanup work in 2016. Our enforcement program continues to identify and implement best practices to expedite site cleanups and optimize PRP-lead removals and remedial investigations by referring \$169.6 million to the U.S. Department of Justice for litigation.

2016 Agreement Yields \$42 Million Settlement for Tennessee Cleanup

Following a series of state and federal agreements and orders, the story of the Copper Basin Mining District in southeast Tennessee has changed from one of environmental degradation to environmental restoration. Extensive former copper and sulfur mining operations dating back to the early 1800s resulted in a 50-square-mile area of deforested, barren land and the degradation of the North Potato Creek and Davis Mill Creek watersheds and 26 miles of the Ocoee River.

In 2016, Region 4 finalized a Consent Decree with the site PRP to conduct remedial design and remedial action activities at the site. The agreement also reimburses EPA for its past and future costs at the site. The PRP will spend an estimated \$32 million to maintain and operate a water treatment system, prevent public access to contaminated



“ENFORCEMENT FIRST” AT EPA

Region 4 Superfund's approach to “enforcement first” means that we conduct thorough, timely investigations to identify PRPs, take all appropriate remedial and removal enforcement actions, address recovery of EPA's costs and make sure PRPs conduct investigations and cleanup under enforceable orders.

ENFORCEMENT FACTS



Nationwide, since the start of EPA's enforcement program, EPA has secured over \$35.1 billion in private-party commitments and over \$6.9 billion to recover past cleanup costs.

“This settlement marks a significant turning point in the remediation and restoration of an area that has borne the brunt of contamination from industrialized operations for over a century. The provisions of this settlement exemplifies the hard work by multiple federal agencies, the State of Tennessee, the Tennessee Valley Authority and the PRP to ensure the remediation and recovery of the Ocoee River, North Potato Creek and Davis Mill Creek watersheds continue well into the future.”

Heather McTeer Toney

EPA Region 4 Regional Administrator

water, and monitor contamination in the Ocoee River. The PRP will also reimburse EPA \$10.8 million for a portion of its past costs and pay for future EPA and State of Tennessee oversight costs.

\$5.5 Million Settlement Enables Final Cleanup in North Carolina

In September 2016, Region 4 Superfund announced a settlement with 173 parties to clean up areas surrounding the Ward Transformer Superfund site in Raleigh. The consent decree requires that settling parties fund and perform an estimated \$5.5 million cleanup of PCB contamination from lower Brier Creek, Lake Crabtree, lower Crabtree Creek and nearby tributaries. Final cleanup plans are now under development.

Site contamination was caused by a former transformer manufacturing, repair, sales and reconditioning facility that operated on site for several decades. Short-term cleanup actions in 2015 treated and disposed of over 488,000 tons of PCB-contaminated soil, material and debris at the site.

Comprehensive Settlement Agreement in Place for South Carolina Cleanup

In April 2016, Region 4 Superfund announced a settlement agreement with parties to design and implement the final remedy for the International Mineral and Chemical Corp. (IMC) site, a 41-acre former fertilizer production facility just outside Spartanburg, South Carolina. The PRP will also reimburse EPA \$117,000 for its past costs and pay for future EPA and State of South Carolina oversight costs.



The Copper Basin Mining District prior to cleanup.



Aerial view of the Ward Transformer site.



Aerial view of the IMC site.

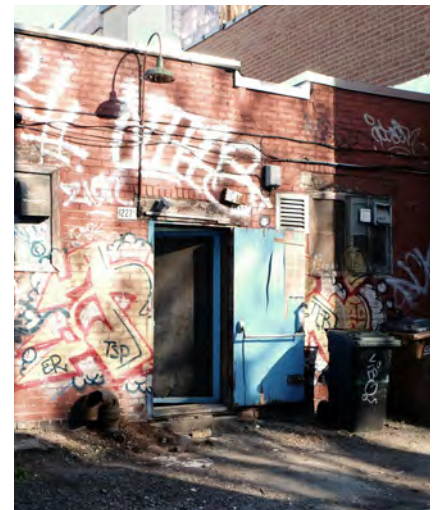
INNOVATIONS

High-quality research, sound science and technological innovation are essential to the protection of human health and the environment and are hallmarks of the Region 4 Superfund program. The program also benefits from specialized expertise in areas including hydrogeology, human health, and radiological and ecological risk assessment. Region 4 scientists integrate knowledge from a wide variety of sources and disciplines to provide responsive solutions to public health and environmental challenges. Our Scientific Support Section makes sure that the science used to support remedial decisions is sound and has integrity, that proper quality control and quality assurance measures are in place, and that sampling approaches and data evaluation are free from unintentional bias.

Innovative Science in Action

RARE Project Nearing Completion

Region 4 Superfund has been leading an innovative urban contaminant background study. Funded by a Regional Applied Research Effort (RARE) grant from EPA's Office of Research and Development (ORD), the Region's Superfund and RCRA programs have partnered on a project to collect urban background data across the Region.



URBAN BACKGROUND

Soil samples from any large, long-established city are expected to contain elevated levels of certain metals and polynuclear aromatic hydrocarbons (PAHs) due to human activity. This is commonly referred to as "urban background."

Because these increased contaminant concentrations are due to urban activities and not site releases, it is often challenging to address these contaminants at sites where investigations, cleanup and risk management are ongoing without quality background data.



The project sampling team in Kentucky and surface soil sampling for the RARE urban background study.

Project goals include the creation of a Region-wide urban background database that can be used to inform decision making across the Region and the creation of standardized procedures for use in other states, cities and EPA Regions. In 2016, the project team collected samples in five cities in three Region 4 states. A sixth city is scheduled for early 2017 and efforts are underway to expand to include additional cities.

Project partners include EPA Region 4's Superfund, RCRA, and Science and Ecosystem Support Division, ORD's National Exposure Research Lab (Las Vegas), and ORD's National Risk Management Research Lab (Cincinnati), along with all eight Region 4 states. State agencies in Kentucky, North Carolina and Tennessee worked with local authorities to gain access for the sampling effort.

Looking forward, the project will serve as a pilot effort to inform development of regional and national urban background contaminant databases. The project has already been used as a template for a background study at one site, the data from one event has been used to represent the background for an area near another site, and Region 4 has been contacted several times about using study plans for events outside of the Region.

Vapor Intrusion

Since EPA issued final technical guides for vapor intrusion for volatile organic compounds (VOCs) in 2015, more sites are being assessed and many assessments now take place early in the Superfund process. When a site assessment begins, Region 4 Superfund site teams now automatically consider the potential for vapor intrusion. For example, at the Former Macon Naval Ordnance Plant in Macon, Georgia, an elevated TCE value triggered an early action and a vapor intrusion investigation that eventually expanded to many site buildings.

The TAGA Bus

The Trace Atmospheric Gas Analyzer (TAGA) bus has been deployed at several Region 4 sites. It was recently used in Granada, Mississippi, to rapidly screen 17 houses in a subdivision located next to a site with VOC contamination. At the Former Macon Naval Ordnance Plant, Region 4 deployed the TAGA bus to aid in rapid screening of seven of the nine buildings under investigation.

WHAT IS VAPOR INTRUSION?

A process by which chemicals volatilize from impacted soil or groundwater beneath a building and diffuse toward regions of lower chemical concentration (e.g., the atmosphere, conduits, basements).



Lab equipment inside the TAGA bus.

THE TAGA BUS: A CLOSER LOOK

The TAGA bus is a self-contained mobile laboratory capable of real-time sampling and analysis in the low parts-per-billion level of outdoor air or emissions from various environmental sources and concerns.

In addition, the TAGA bus has specialized sampling equipment for measuring indoor air and air quality at remote locations.

Restoring Our Environment

Ecological revitalization returns land from a contaminated state to one that supports functioning and sustainable habitat. Ecological revitalization improves soil health, supports diverse vegetation, sequesters carbon, protects surface water and groundwater, and provides wildlife habitat and passive recreation opportunities. Through FY 2016, 21 sites in Region 4 are in planned or actual ecological reuse.

Integrating Pollinator Protection as Part of Cleanups, Long-Term Stewardship and Reuse

Region 4 Superfund is at the forefront of making pollinator-friendly native plantings part of cleanups and long-term stewardship and reuse activities. This work helps EPA measure the Superfund program's progress toward meeting the national strategy objective of tracking the total acreage of pollinator-friendly habitat created and protected at Superfund remedial sites. Region 4 is also working to expand opportunities to include pollinator-friendly plantings in green remediation and green infrastructure activities.

Innovative Remedy Fosters Ecological Future for Former Mine Site in South Carolina

The Henry's Knob Mine site is a former kyanite mine. About 1.4 million cubic yards of mine tailings were left behind in several ponds around the site after the mine's closure. These tailings interact with precipitation and release contaminants into the groundwater.



Views of the soil amendment project, during and after construction.



POLLINATORS 101

Pollinators contribute substantially to our national economy, playing a significant role in the production of over 150 food crops, and are vital to our national ecological systems.

In Region 4, hundreds of acres at Superfund sites have been planted with pollinator-friendly habitat as a result of cleanup and restoration activities.



To address this, the responsible party worked with Region 4 Superfund and the South Carolina Department of Health and Environmental Control to develop a soil amendment placed over the tailings to produce a thick vegetative layer to aid in adsorption of the precipitation. The Superfund site team also helped the responsible party select a seed mix that would support pollinators. Native vegetation and pollinator habitat are now well established on site; all of the tailing ponds will be vegetated by mid-2017.



New Meadow in Central Georgia Supports 4.5 Acres of Pollinator Habitat

Following cleanup of this former landfill at the Armstrong World Industries site in Macon, Georgia, the area is now a thriving pollinator meadow. The Armstrong Macon Meadow is planted with over 50 locally native plants representing the natural history of central Georgia; the area provides habitat for bees, butterflies, birds and other species. Collaboration among Region 4, Armstrong World Industries and the nonprofit Pollinator Partnership made the meadow possible.



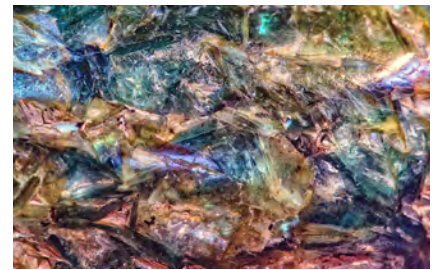
Environmental Benefits: The meadow provides habitat for a range of pollinator species. It includes a Monarch butterfly garden, a butterfly garden, a Hummingbird garden and a bee garden.



Social and Educational Benefits: The meadow provides a gathering place for company employees. Paths can be used for exercise and relaxation, while signs help people learn about local pollinators.



Economic Benefits: The meadow is a sustainable and cost-effective alternative to mowing the landfill cap several times a year. It also provides erosion control, keeping the cap's soil cover in place.



KYANITE

Kyanite is used in production of refractory, ceramic and porcelain materials that withstand high temperatures.

DID YOU KNOW?

Region 4 Superfund developed communication materials – posters (below) and a series of fact sheets – to highlight pollinator-friendly habitat at Superfund sites across the Southeast and to support future efforts to create and restore additional habitat.



In 2016, Region 4 Superfund staff provided pollinator materials at the Georgia Environmental Conference, the International Environmental Youth Symposium, a Science Saturday event hosted by Georgia Pacific, and at the Wildlife Habitat Council's Conservation Conference in Baltimore.

A NEW ERA OF PARTNERSHIPS

Partnering, Consulting and Collaboration

Region 4 Superfund works collaboratively with a diverse network of partners – affected communities, states, tribal and local governments, nonprofits, private sector organizations and other federal agencies – to ensure the protection of public health and the environment.

We also rely on our government, nonprofit and private sector partners to help fulfill EPA's mission of responding to emergencies and cleaning up hazardous sites. Through several types of partnering agreements – including contracts, nonprofit grants, state cooperative agreements and federal interagency agreements – Region 4 Superfund ensures that all required site cleanup work is performed with broad-based support using the most cost-effective approach possible. In FY16, for example, Superfund provided over \$3.5 million dollars to our state partners for cleanup-related work.

Strengthening Global Partnerships, Building International Capacities

In 2016, Region 4 Superfund staff traveled to El Salvador to assist the Ministry of the Environment with the management of lead contamination from a former battery recycler. Geophysical surveys identified illegally buried hazardous waste under a soccer field next to the facility; about 40,000 tons of hazardous waste also remain in two warehouses on site. Region 4 is providing ongoing assistance to protect public health, prevent off-site migration of contaminated waste, and ensure proper management, treatment and disposal of hazardous waste.

The project illustrates how EPA's regional offices are a vital part of the Agency's efforts to share environmental management practices and to achieve the mutual goal of protecting the global commons. EPA is a world-renowned environmental organization with over three decades of experience in addressing domestic public health and environmental challenges. Since its inception, the Agency has recognized that domestic action alone is not enough to fully address environmental concerns. International cooperation is vital to achieving our mission.

DID YOU KNOW?



Region 4 met four out of five socioeconomic contracting goals in FY 2016. These goals provide opportunities for small, small disadvantaged, minority-owned, service-disabled veteran-owned and HUBZone businesses to work for the federal government. This was in large part due to Superfund program contracting, the largest source of contracting in the Region by far.



EPA Region 4 staff discussing sampling strategies at the site in El Salvador.

Embracing High Performance: Contracts and Training

2016 Contract Awards Increase Small and Disadvantaged Business Participation

In June 2016, the Region awarded the follow-on Emergency Response Training & Equipment Management Contract (ERTEM) contract to Basha Services, LLC, ensuring continuity in the Superfund Emergency Response and Removal Program through management of the Regional Response Center (RRC). The contract carries a maximum contract value of \$2.4 million.



Participants at the ERTEM contract signing.

In September 2016, Region 4 awarded a second contract to Hestor Group LLC, an 8(a) small disadvantaged business, woman-owned small business (WOSB), and economically disadvantaged woman-owned small business. This contract will provide community involvement services to the Superfund Enforcement and Community Engagement Branch. It has a maximum contract value of \$3.3 million over five years.



Participants at the community involvement services contract signing.

NATIONAL 2016 TRAINING HIGHLIGHTS ECOLOGICAL REVITALIZATION EFFORTS IN TENNESSEE

In March 2016, staff from Region 4 Superfund and the Tennessee Valley Authority joined EPA's Superfund Redevelopment Initiative for a webinar highlighting ecological revitalization efforts at the TVA Kingston Ash Recovery Project site in Kingston, Tennessee. The webinar is available online at www.cluin.org/sri.



TVA's extensive ecological restoration efforts went far beyond cleanup requirements. Today, diverse natural habitats provide an interconnected ecosystem that supports a wide range of wildlife and allows for recreation. Rehabilitated wetlands and river ecosystems are home to fish, amphibians, birds and pollinators.

Connecting Communities, Sharing Information

Communities and EPA's local, state, tribal and federal partners rely on accurate Superfund program information. Region 4 Superfund staff also rely on access to comprehensive information generated during the program's environmental restoration efforts. We work hard to make sure this information is up-to-date, transparent and easily accessible, serving as a vital and valued shared resource.

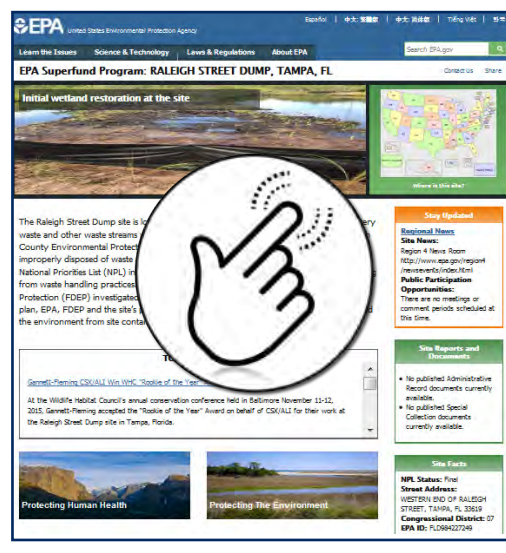
Region 4 Superfund has invested substantial resources over the long term to effectively manage and provide program information to EPA staff and share this information with states, communities and other interested parties. To accomplish this goal in recent years, we have focused on providing Superfund communities with comprehensive information resources and enhancing the program's website, posting information on a timely basis.

New and Updated Superfund Resources in Region 4 as part of OneEPA Effort

The goals of the OneEPA process are to improve knowledge sharing among EPA offices and make sure that communities, partners and stakeholders have access to the best information resources possible. A complete review and restructuring of EPA's website was a major part of this effort. In 2015 and 2016, Region 4 has been at the forefront, updating profile information for all Superfund sites and providing new content that addresses priority information needs.

The program's online resources now provide millions of Americans with enhanced, more transparent access to updated information about environmental issues as well as EPA's work to support healthy communities and advance environmental protection. These resources also strengthen environmental decision-making, optimizing cleanups, cost savings and partnership opportunities.

Looking forward, Region 4 is starting on a new phase of enhancements that will incorporate user comments and suggestions. Please click on the "[Contact Us](#)" buttons on the website to provide valuable feedback on how we can continue to improve your Region 4 Superfund web experience.



SITE PROFILES

2016 Superfund site profile page for the Raleigh Street Dump site in Tampa.

EJSCREEN: Putting Environmental Justice into Action

EPA released EJSCREEN, the Agency's environmental justice mapping and screen tool, to the public in 2015. EPA has since hosted hundreds of outreach events to help people use the tool. EPA has also worked with other federal and state partners to assist in incorporating EJSCREEN into various activities, analyses and programs. Superfund staff are trained to use EJSCREEN to identify communities with environmental justice concerns, to assign appropriate resources to address those concerns, and determine the need for additional analysis and resources in these communities.

Region 4 Superfund's efforts include:

- Enhanced community engagement efforts during the Superfund remedial process (with special focus on environmental justice sites).
- Working with communities with environmental justice concerns to identify potential assistance needs.
- Sharing tools with these communities to support the return of Superfund sites to productive use.
- Identifying technical assistance gaps and needs in these communities and developing strategies to improve technical assistance and support diverse stakeholder groups.
- Using the EJSCREEN tool as part of enforcement planning efforts to make sure community concerns are considered during cleanup and cost recovery negotiations.

To use EJSCREEN, please visit <http://www.epa.gov/ejscreen>.

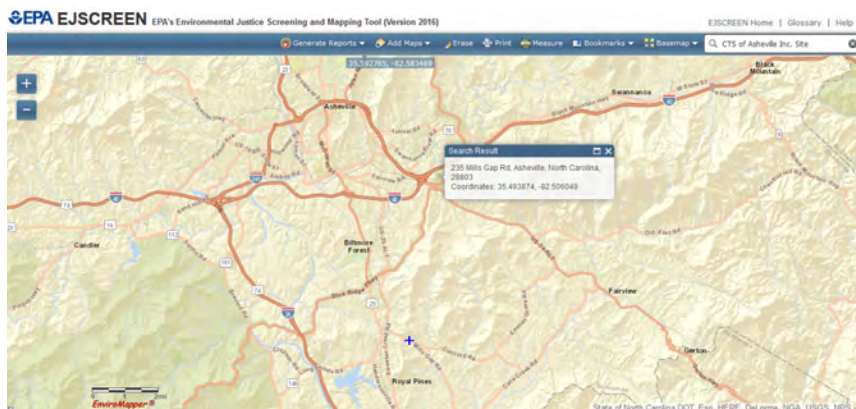


COMMUNITY ENGAGEMENT

Effective information-sharing is a vitally important part of Region 4's community involvement efforts. So is reaching out to everyone in each community.

In 2016, these efforts included the first-ever youth outreach event for the Kerr-McGee Chemical Corporation site in Columbus, Mississippi. The gathering was designed to help local youth better understand the site's history and sampling activities. More than 75 children ages 4 to 15 attended.

Following several short-term cleanups, Region 4 is currently leading investigations to identify all site-related risks to people and the environment from this former chemical manufacturing facility.



Superfund Staff Excellence: *A Closer Look*

Excellence, Integrity and Experience: Region 4 Superfund Staff Awards

Every day, EPA employees work in offices, laboratories and communities across the Southeast to protect public health and the environment. Whether they are investigating pollution issues, conducting cutting-edge research on environmental health impacts, working behind the scenes on the legal aspects of rulemakings, advancing environmental justice, or carrying out activities that support all of these efforts – Region 4 Superfund staff are on the front lines of environmental protection.

In 2016, the remarkable efforts and dedication of EPA Region 4 Superfund staff were recognized with a range of national and regional awards.

National Honor Awards

- ❖ Award for Outstanding Leadership in Collaborative Problem Solving – Kerr-McGee Superfund Site Settlement Team
Collaborative efforts in settlement of largest recovery cleanup of environmental contamination in history.
- ❖ Suzanne E. Olive Award for Exemplary Leadership
Work ensuring positive steps are taken to identify and eliminate employment disparities in Region 4.
- ❖ Managerial Leadership Award
Achievement in site cleanup and approaches to environmental justice, enforcement and collaborative partnerships.

Notable Achievement Awards

- ❖ Chemical Emergency Preparedness and Prevention Leadership Award
Exceptional accomplishments and leadership of Region 4's Oil Inspection Program.
- ❖ Emergency Management – Homeland Security
Leadership and substantial technical contributions and policy expertise at the regional and national levels.
- ❖ Site Assessment Manager of the Year
Excellence in managing Superfund Site Evaluation Program in two states and representing Region 4 on National Data Management Workgroup.
- ❖ Community Involvement Coordinator of the Year
Exemplary service as advocate for strengthening early and meaningful community engagement and making a visible difference during Superfund cleanups.
- ❖ Superfund Team of the Year – 35th Avenue Site Removal Implementation Team
Development of time-critical removal model that ensures protection of vulnerable communities through emphasis on inclusion, collaboration, sound science and transparency.
- ❖ Superfund Remediation Enforcement
Exemplary work representing EPA and resolving complex disputes with DOE at Paducah Gaseous Diffusion Plant in Kentucky.

Regional Bronze Awards

- ❖ **Copper Basin RD/RA Consent Decree Negotiations Team**
Successful negotiation of two complex consent decrees for remedial design and remedial action at Copper Basin Mining District in Tennessee.
- ❖ **Superfund Financial Support Team**
Exceptional management of Superfund reimbursable accounts.
- ❖ **Capital City Plume Site Enforcement Team**
Exemplary collaborative efforts resulting in successful negotiations of site deferral, cleanup and recovery of EPA costs.
- ❖ **Hattiesburg Derailment Exercise Team**
Outstanding efforts in workshop and exercise planning and implementation.

Additional Recognition

- ❖ **Human Resources Line of Business Implementation Team**
Achievement of exceptional results in implementation of the federal personnel payroll system.
- ❖ **Hiring Surge Support Team**
Innovative and exemplary performance in support of EPA's "Working Together to Meet Agency Staffing" target.
- ❖ **President Obama's Climate Action Plan**
Recognition of EPA Region 4 staff contributions in support of President Obama's Climate Action Plan.

Region 4 Superfund Staff in Action: Community Involvement Coordinators (CICs)

In 2016, these vital liaisons between communities and EPA site teams:

- Wrote 20 Community Involvement Plans.
- Supported 31 Five-Year Reviews.
- Sent out 13,315 fact sheets.
- Posted 457 public notices.
- Established 14 Administrative Record repositories.
- Supported 4 technical assistance grants.
- Created 1 community advisory group.
- Shared 94 result letters.
- Obtained 539 access agreements.



FY 2016 Awards

Recognizing Community Leadership and Excellence in Superfund Redevelopment

Every year, Region 4 Superfund seeks opportunities to recognize the remarkable community-wide efforts that return Superfund sites to use. Through our Excellence in Site Reuse Award, we honor the hard work and partnerships that make site reuse possible.

Wetlands Restoration Protects Rare Natural Resources in Florida

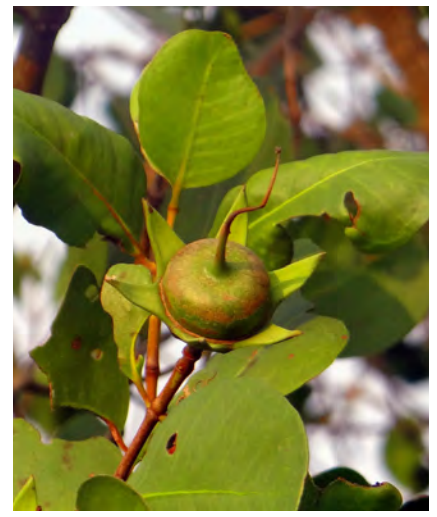
Region 4 Superfund recognized the efforts of responsible parties CSX Transportation and its subsidiary, the Atlantic Land and Improvement Company, to go above and beyond cleanup requirements at the 5-acre Raleigh Street Dump site and preserve wildlife habitat in one of the last undeveloped areas in Tampa. The parties worked closely with Region 4, the National Oceanic and Atmospheric Administration, and the Florida Department of Environmental Protection on site cleanup plans. Following cleanup, they partnered with Wildlife Habitat Council, a national nonprofit dedicated to protecting and enhancing wildlife habitat, on habitat restoration plans for the site.

Restoration of more than 2.5 acres of wetlands began in late 2013. The primary goal was to provide self-sustaining ecosystems that closely resemble natural systems. Activities included restoring the original grade of the wetlands area, creating a wildflower and native grass meadow, creating habitat brush piles, and removing exotic plant species. A bat box and nesting boxes for small birds were also installed.

Today, the wetlands are monitored quarterly to ensure an 85 percent survival rate for planted species. New plantings take place as needed to maintain this survival rate. Exotic species are also monitored. Other cleanup actions have included the removal and disposal of more than 33,000 tons of soil, debris and sediment. Forty tons of waste tires were taken away and recycled.



Aerial view of the Raleigh Street Dump site during restoration (left) and wildlife at the site (right).



NATIVE SPECIES PLANTINGS

- *White mangroves*
- *Buttonwood trees*
- *Saltmeadow cordgrass*
- *Sand cordgrass*
- *Dune sunflowers*
- *Sea oxeye daisies*
- *Railroad vines*
- *Wild grasses and wildflowers*

INVASIVE SPECIES REMOVALS

- *Brazilian pepper*
- *Lead tree*
- *Rattlebox*
- *Air potato*

VCC Initiative Leads to Successful Cleanups and Reuse across the Southeast

Region 4 also awarded the 2016 Excellence in Site Reuse Award to ExxonMobil in recognition of its commitment and dedication to cleaning up former Virginia Carolina Chemical Company (VCC) sites. From the late 1800s to the early 1900s, VCC produced phosphate fertilizer at sites across the Southeast. Through its VCC Initiative, Region 4 has been working with ExxonMobil – the corporate successor to VCC – to identify and address contamination at properties where VCC facilities once operated.

Since 2000, ExxonMobil and its contractors have:

- Completed removal actions at 27 VCC sites across the Southeast with EPA and state oversight.
- Addressed over a million tons of lead- and arsenic-contaminated soil and sediment.
- Restored several hundred acres of once-contaminated land.

For example, following the cleanup of the Swift Agri-Chem site in Charleston, South Carolina, the new property owner, the Charleston County Park and Recreation Commission, has plans for a public park with playing fields, wetlands, event space, a dock, walking trails and support structures. The VCC Initiative has proven to be an excellent opportunity for EPA and states such as South Carolina to work with ExxonMobil and their contractors to clean up properties, as well as an opportunity to work with property owners and local communities to make site reuse a reality.



Region 4 Superfund and ExxonMobil representatives at the award ceremony for the VCC Initiative sites.



WETLANDS 101

Wetlands are part of the foundation of our nation's water resources and are vital to the health of waterways and communities that are downstream. Wetlands feed downstream waters, trap floodwaters, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat. Wetlands are also economic drivers because of their key role in fishing, hunting, agriculture and recreation.

Region 4 Superfund: FY 2017 Priorities

Focusing on Fundamentals to Ensure the Achievement of GPRA Goals, Agency Mission and Program Measures by:

- Maximizing public health and environmental benefits and outcomes.
- Leading the Region's efforts to safeguard vulnerable communities.
- Protecting children's health.
- Maintaining emergency response readiness.
- Ensuring meaningful community engagement and environmental justice.
- Maintaining a strong enforcement first program.
- Focusing on federal facility oversight.
- Supporting the return of sites to productive use.

Planning for the Future through the Use of Good Science and New Technology:

- Sustaining scientific excellence and integrity.
- Maximizing use of innovative technologies and techniques.
- Advancing renewable energy opportunities.
- Enhancing communities' resiliency to a changing climate.

Embracing Organizational Change by Conducting Program Management Reviews with the Goal of:

- Improving operational efficiencies and effectiveness.
- Enhancing cross-program coordination, collaboration and communication.
- Leveraging resources.
- Maintaining an effective contracting paradigm.

Strengthening Partnerships with States and Stakeholders by:

- Sharing information, guidance and best practices.
- Enhancing access to comprehensive, up-to-date information resources.
- Reaching out to build relationships and capacities.

In FY 2017, Region 4 Superfund will maintain its focus on reaching the next level of public health and environmental protection. From rapid emergency responses and innovative long-term cleanups to comprehensive enforcement actions and pioneering sustainability efforts, we will continue to support healthy, vibrant and resilient communities. We will make sure that people have the resources they need to participate in environmental discussions, and work with our local, state, federal and tribal partners to build capacities, enable reuse opportunities, and strengthen project outcomes. Together, we look forward to new opportunities to advance excellence in public health and environmental protection.



2016 Region 4 Superfund program activities (clockwise from top left) in North Birmingham, Alabama, and at the Raleigh Street Dump, Oak Ridge Reservation and Macon World Industries sites.

