

U.S. EPA Region 4 Accomplishments Report



EPA 904-R-05-003



Serving the Southeast

2003 ~ 2004

Alabama | Florida | Georgia | Kentucky | Mississippi | North Carolina | South Carolina | Tennessee

About Region 4

In 1970, EPA Southeast (Region 4) was created to serve the eight southeastern states and six federally recognized Indian tribes – Catawba, Eastern Cherokee, Choctaw, Poarch Band, Miccosukee and Seminole. Since then, Region 4's workforce has grown to nearly 1,100 environmental professionals committed to ensuring that nature's activities and human activities can exist in harmony.

Our diverse workforce is led by the Regional Administrator, who is responsible for all Agency programs in the Southeast and the oversight of seven offices and divisions, headquartered in Atlanta, Ga.

The Office of Policy and Management is responsible for human resources, information and facilities management, grant and contracts administration, strategic planning and the implementation of the National Environmental Policy Act.

The Office Environmental Accountability staff provides legal advice and counseling for Region 4; assists in criminal enforcement activities; plans, coordinates, and monitors the enforcement and compliance assurance program; provides leadership in implementing national enforcement activities and initiatives, and coordinates enforcement and compliance assurance activities involving federal facilities.

External Affairs facilitates the exchange of information between EPA and the public, Congress, and state and local government by broadly communicating the EPA's mission to protect human health and the environment.

The Air, Pesticides and Toxics Management Division is responsible for the development, coordination, implementation, and evaluation of regulatory and technical assistance programs required by the Clean Air Act; Federal Insecticide, Fungicide and Rodenticide Act; Toxic Substance Control Act; and Emergency Planning and Community Right-to-Know Act.

The Water Management Division oversees the water programs in the Region and is responsible for the development, coordination, implementation, and evaluation of more than 28 water quality management related programs.

The Waste Management Division's function is to recommend goals, priorities, and objectives for the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act programs and to assist the Region in developing comprehensive programs within delegated or related program areas.

The Science and Ecosystem Support Division, located in Athens, Ga., provides scientific and technical support services to enable decision making and serves as a provider of scientific and technical expertise and environmental data for the Region.

In addition, there are four special emphasis programs operating within the Office of the Regional Administrator dealing with Agriculture, Environmental Justice, State and Local Government Relations, and Tribal Relations. Each is headed by a program coordinator reporting directly to the Regional Administrator.

***“The mission of the U.S. Environmental Protection Agency is
to protect human health and the environment”***

Message from the Regional Administrator

For more than 30 years, the U.S. Environmental Protection Agency has been working to protect human health and the environment for all Americans. We have witnessed an increase in environmental awareness and demand from our citizens for a healthier environment in the Southeast. Through the efforts of a diverse work force, we have made progress in ensuring our air is cleaner, our water is purer and our land is better protected.

The protection of human health and the environment in the Southeast presents unique challenges. Our Region - - consisting of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee -- contains features and challenges that distinguish us from the rest of the country. We have highly diverse habitats and species, an abundance of rivers, wetlands and coastlines, as well as the Appalachian Mountains. More specifically, the Southeast is home to one-third of the nation's wetlands, one-third of the nation's estuaries, more than one-third of the nation's coastline, and river systems totalling nearly 460,000 miles of waterways.

We have a diverse and rapidly growing human population which can bring with it stress on our environment through increasing demands for water, energy, and other natural resources. However, by working with our local, state and tribal partners, we have achieved notable success in addressing our Region's environmental problems and challenges. We remain committed to promoting a blend of good environmental stewardship and sound economic progress in the Southeast.

On behalf of all the employees of EPA Region 4, I am pleased to present our Accomplishments Report for 2003 – 2004. This report is organized around EPA's Five Strategic Goals – Clean Air; Safe and Clean Water; Land Preservation and Restoration; Healthy Communities and Ecosystems; and Compliance and Environmental Stewardship. We hope that you will find this report informative and that it will inspire you to embrace your role as a steward of the Southeast's environment.



J. I. Palmer Jr.

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Goal 1

U.S. Environmental Protection Agency, Region 4 ~ Accomplishments Report 2003-2004

Clean Air and Global Climate Change

Region 4 is working diligently with our partners to improve the air quality in the Southeast. With the passage of the 1990 Clean Air Act Amendments, EPA was required to designate areas across the country that were not meeting national ambient air quality standards (NAAQS) for six criteria pollutants: nitrogen dioxide, sulfur dioxide, lead, carbon monoxide, particulate matter and ozone. These standards were designed to protect human health and the environment, including vegetation and crops, wildlife, visibility improvement, and building structures. In 1991, EPA identified 29 southeastern



EPA encourages the establishment of greenways and bicycle paths as a way to improve outdoor air quality.

areas that were in violation of NAAQS. Today, all of those areas are attaining those standards.

Healthier Outdoor Air

EPA recently developed a more protective ozone standard and fine particulate matter national ambient air quality standard. These new standards are very important because exposure to ozone and fine particulate matter can cause respiratory problems (including asthma attacks and reduced lung function especially in children and the elderly), cardiovascular problems, and premature death. During 2004, EPA designated 21 southeastern areas affecting 16 million people as not meeting the ozone standard, and 11 areas affecting more than 8.7 million people as not meeting the fine particulate standard. The air pollution problems in these areas are the result of a myriad of

factors such as population growth, industrial sources, mobile sources, and the interstate transport of pollution. Addressing ozone and fine particulate matter in these areas requires implementation of a strategy that is a combination of federal, state, and local initiatives.

Working with state and local regulators, EPA designed a process called the Early Action Compact (EAC) to provide “cleaner air sooner.” With the designation of an EAC area, a state agrees to implement local control measures earlier than statutorily required.

In Region 4, Georgia, North Carolina, South Carolina and Tennessee have EAC areas. These states have formed partnerships with local elected officials, chambers of commerce, environmental interest groups, transportation planners and other stakeholders to develop and implement local plans.

“More people breathing cleaner air”

The Greensboro Triad Area in North Carolina is a great example of an EAC area that came together with a goal to achieve



Many hot-air balloonist take to the skies to enjoy the features of the southeastern United States.

Leading the Way with Science and Research

Region 4 was assigned a Mobile Air Monitoring Audit Laboratory to conduct audits of air monitoring instruments. This mobile laboratory can audit ozone, sulfur dioxide, nitrogen oxide, and carbon monoxide monitors.

After the new mobile audit vehicle was outfitted, assembled, and calibration and monitoring equipment were installed, personnel were trained in the methodology and background of using the mobile audit vehicle to perform audits. Region 4, along with the Office of Air Quality, Planning and Standards, participated in writing the Standard Operating Procedures and in the program development of mobile lab audit design. The Region was instrumental in providing national training for the other EPA Regional personnel. A total of 25 air monitoring sites in Region 4 were audited during 2004 using this new technology.

In addition, Region 4 has been a leader in the area of soil vapor intrusion sampling. Staff members have developed methodology to collect soil gas in inert stainless steel containers and analyze the soil vapor using gas chromatography/mass spectrometry. This year two Regional staff members co-authored a paper on their work on soil gas, "Use of Rebound Testing for Evaluation of Soil Vapor Extraction Performance at the Savannah River Site," published in the Fall 2004 issue of *Groundwater Monitoring and Remediation*. A Region 4 employee also presented a poster, "Recent Advances in the Determination of Reduced Sulfur Compounds in Ambient Air," at the 2004 EPA Science Forum in Washington, D.C.

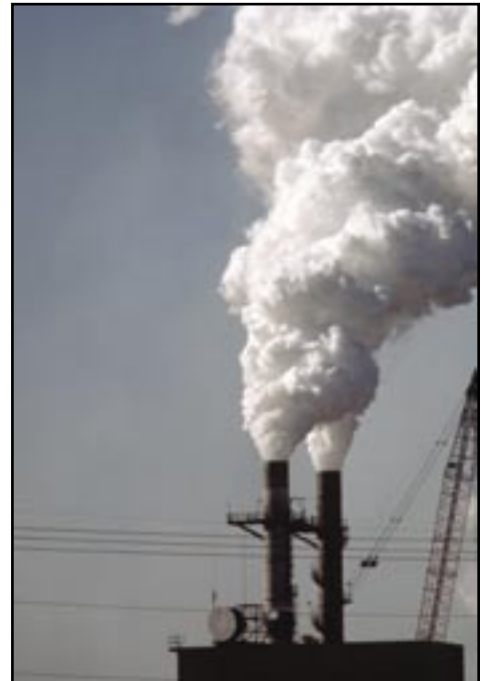
"cleaner air sooner." This area was classified as a moderate 8-hour ozone non-attainment area, and would not have had to attain the 8-hour standard until 2010. As a condition of the EAC process, the area is now working to attain the standards by 2007. Region 4 is actively engaged with the EAC stakeholder group, which consists of representatives from local government, business, industry,

transportation, and environmental organizations. The group has developed a plan that includes far reaching measures, such as: improving sidewalks, greenways and bicycle routes; planned growth measures to improve transportation efficiency; retrofit and/or replacement of diesel school buses to reduce emissions; use of cleaner fuels; and programs to increase the number of riders in

mass transit. North Carolina has submitted a plan for this area to attain the 8-hour standard. EPA is very encouraged with the progress to date and fully expects the area will achieve "cleaner air sooner."

West Louisville Air Toxics Project

An air toxics monitoring study, funded by EPA, the Louisville Metro and Kentucky governments, and the University of Louisville, was conducted in an area of west Louisville. The subsequent screening-level risk assessment was designed to evaluate cancer risks based on exposure to toxic chemicals from sources in the air, including large industrial sources. An important part of the study was the formation of a group of community and industry representatives called the West Jefferson County Community Task



EPA has made tremendous progress in reducing industrial air pollution.

Goal 1 ~ Clean Air and Global Climate Change

Force (WJCCTF). Among other things, this group developed a risk management plan to guide the management of the risks and to deal with public perceptions as the study was being conducted.

Region 4 assisted the community and the Louisville Metro government in carrying out the WJCCTF risk management plan by conducting permit inspections of each major facility in the Rubbertown area and conducting emergency planning and risk management plan inspections of facilities in the area. Additionally, Region 4 provided Environmental Justice grants to the WJCCTF and other community organizations in support of the west Louisville project.

The community and its consultants also wanted an approach for identifying the individual facilities responsible for chemical releases that result in short-term elevated concentrations of toxic chemicals in the air. Region 4 and the Louisville Metro Air Pollution Control District are evaluating measurement technologies that may be able to identify the source of elevated concentrations of particular chemicals. Region 4 is providing a \$265,000 grant to purchase open-path monitoring equipment to respond quickly to complaints, and is lending an additional monitor for this purpose.

Additionally, the Region, in response to community requests, presented classes concerning citizen



Children are breathing cleaner air because of EPA's school bus retrofit program.

participation in air permitting and enforcement, and emergency planning and risk management.

EPA's Clean School Bus USA

Region 4 has provided grant funds for two communities in the Southeast to purchase new, cleaner school buses and retrofit older buses. The technology will reduce emissions of harmful dust and soot by up to 90 percent, which reduces air pollution, and children's exposure. The Region is also involved in promoting policies and practices to eliminate unneeded school bus idling. In 2003, Region 4 provided grants to Columbus, Miss., and Western North Carolina to retrofit 368 buses. An additional school bus retrofit project for 86 buses in the Region was reviewed under the Voluntary Diesel Retrofit Program and funded through Clean School Bus USA.

The overall result of this and the other voluntary mobile source programs has been to save 2.4 million gallons of diesel fuel, 4.3 million gallons of gasoline per year, reduce CO₂ emissions by 24,111 tons, volatile organic compound

(VOC) emissions by 41.25 tons per year, and remove the equivalent of 13,632 automobiles from roads. Most importantly, these efforts have resulted in reducing exposure to more than 110,000 students.

EPA's Indoor Air Quality Tools for Schools

Working with environmental and education officials at the state and local levels, Region 4 trains school staff to improve Indoor Air Quality (IAQ) using the Agency's IAQ Tools for Schools program.

The program is a nationwide initiative to help school officials assess, resolve and prevent IAQ problems and reduce exposure to asthma triggers.

In the past two years, we have worked with large school districts, particularly in Florida and Tennessee, and metropolitan areas of Atlanta, Birmingham, Ala., Charlotte, N.C., Miami, Fla., Nashville and Tampa, Fla., to reduce exposure of indoor air contaminants to large numbers of students. More than 600 schools have implemented the Tools for Schools program, improving the indoor air quality for more than 200,000 children.

Annually, EPA recognizes schools and districts for their efforts to improve the indoor environment of their facilities. Over the two year period, 11 schools or districts from five of the eight Region states have been recognized for excellence in implementing the IAQ Tools for Schools Program.

Goal 2

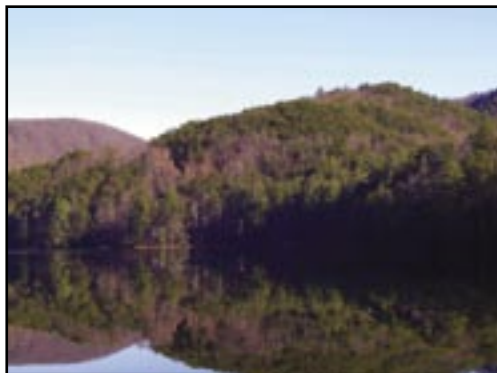
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Clean and Safe Water

The federal, state, and tribal water programs in Region 4 continue to make progress in ensuring clean and safe water for everyone. In the Safe Drinking Water program, the Region, working through the states, is assisting drinking water systems in fully meeting, and actually going beyond, the requirements established for protection of drinking water. Approximately 95 percent of all drinking water systems in the Region are providing water that meets all federal requirements.

In the Surface Water Protection program, many of the Region 4 states' National Pollutant Discharge Elimination (NPDES) programs, which regulate the discharge of contaminants into surface waters, are taking a more integrated approach by issuing NPDES permit renewals on a watershed basis. They are also setting permit limits that take into consideration protecting the watershed as a whole.

Where water quality is already impaired, the Region and the states are establishing Total Maximum Daily Loads (TMDLs) that identify reductions in pollutants needed to meet water quality standards. More



EPA Region 4 is working with partners to restore water quality in our valuable recreational waters.

than 1,100 TMDLs have been established in 2003 and 2004 for impaired water body segments.

In coastal areas of the Region, the National Estuary Programs (NEP) continue to make significant strides in the protection and restoration of wetlands and other coastal resources. For fiscal years (FY)

**“Safe drinking water
for everyone”**

2003 and 2004, the Region's six NEPs restored and/or protected more than 75,000 acres of habitat, including critical estuaries, riparian and coastal wetlands.

In FY 2004, the Region awarded approximately \$105 million to states, tribes and other entities to

carry out water programs to achieve clean and safe water, and almost \$255 million in State Revolving Loan Funds that allow states to fund drinking water and clean surface water projects.

We are committed to safe drinking water, and restoring and maintaining the Region's oceans, watersheds, and aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.

Protecting Human Health from Contaminants in Drinking Water

Region 4 has developed the nation's first multi-state approach for assisting drinking water system operators in ensuring treated water is safe to drink. We provide treatment goals for water systems that extend above and beyond current requirements so water system customers are better protected against microbial pathogens. We work with state drinking water program staffs who, in turn, work with water systems operators in their own areas to enhance water treatment performance.



Ninety-five percent of all drinking water systems in Region 4 meet federal requirements.

Collectively, these efforts are now using many tools to increase particulate and microbial pathogen removal at more than 390 surface water treatment plants in the Southeast. We rank water systems within each state and on Indian lands based on a number of factors including the risk posed by microbial contaminants. We then focus efforts on systems that are most in need of technical assistance. The result is often improved performance without major capital investment by the system. Since we focus technical assistance on the higher risk water systems, we minimize the potential for waterborne disease outbreaks such as the Cryptosporidiosis outbreak that sickened 400,000 and killed 100 people in Milwaukee in 1993.

One of the many success stories is the city of North Augusta,

S.C. This city's water treatment plant, which serves 27,000 people, significantly improved its performance between 2002 and 2003. Over the four-year period the water served to its customers has shown a 60 percent improvement in the level of turbidity, which is often associated with microbial contaminants.

Protecting Human Health from Pathogens in Recreational Waters

As the population has grown, and more and more land has been developed, the contamination of our surface waters by bacteria and other pathogens has increased. These pathogens enter our waters from a variety of sources, such as runoff from land where animals live, and from leaking and overflowing sewer systems and septic tanks. Pathogen contamination is the Region's leading source of surface water impairment.

Swimming and other forms of recreation in water polluted by pathogens can cause illness, and we are working with our many federal, state, and local partners to restore water quality in the Region's valuable recreational waters.

One of our efforts to ensure safe water for swimming and other forms of recreation is in the Upper Coosawattee River watershed, including Carters Lake in Gilmer County, Georgia. We are working with the Upper Coosawattee

Alliance (UCA), which includes more than 20 government agencies, including the EPA, the U. S. Army Corps of Engineers, the Natural Resources Conservation Service, and state and local governments, to implement the TMDL for pathogens established in 2003 for the watershed. The UCA coordinates the many activities of the entities involved to make sure pollutant controls are implemented effectively. Region 4 has provided \$2.5 million for restoration efforts in this basin from our Section 319 non-point source program and other program funds.

These funds are now at work in the watershed installing pollution control measures. Cattle farmers are installing riparian fencing and providing off-stream watering facilities to prevent cattle from standing and wading in the stream. Poultry farmers are installing passive air composting facilities to handle chicken litter rather than the current practice of stack houses, which are uncovered and cause polluted runoff due to rainfall on the litter. In addition, the Regional Development Center has installed on-site septic systems to replace direct discharges to the stream of waste water from older homes. These Best Management Practices are expected to result in significant reductions in pathogen concentrations in some of the streams feeding Carters Lake.

Improving Water Quality on a Watershed Basis

We are working with our states to support the development and implementation of local watershed

plans that offer a comprehensive approach to assessing water quality, defining problems, integrating management of diverse pollution sources, and financing projects. All

of our Region 4 states have adopted the watershed approach of “rotating basins” for planning, monitoring, assessing, and implementing clean water programs.

Working with Farmers in a Watershed to Restore Riparian Wetlands

Region 4 is working with farmers in the Yazoo River Basin of western Mississippi to plant riparian buffers along the edge of fields that border streams for the dual benefit of improving water quality and restoring wildlife habitat. In the past, Yazoo farmers left only narrow 5- to 10-foot riparian buffers between the edge of fields and streams when plowing their fields. The lack of riparian buffers during the fall, winter, and spring seasons, when fields are plowed and left bare, caused extensive erosion and decreased the habitat for wildlife, including quail. While farmers are understandably reluctant to take valuable land out of production, many have seen the value of planting native grass and legume buffers to reduce soil erosion from crop areas, while at the same time, providing habitat for quail and other wildlife.

Over a three-year period, Yazoo farmers planted riparian buffers along 78 miles of drainage areas, streams, rivers, wetlands, and lakes, for a total of 543 acres, including a drainage area of 9,376 acres of cropland. The Yazoo Basin project area included the property of 23 landowners in eight counties. More than two-thirds of the buffers were established in the Bogue Phalia River Watershed.

Before establishing the buffers, the selected areas contributed 65,349 tons of sediment annually to adjacent water bodies (primarily the Big Sunflower River). After the buffers were installed, sediment loading was reduced to 23,324 tons per year for a 36 percent reduction in sediments and associated non-point source pollutants.

One of the most common and widespread pollutants in the waters across our Region is sediment which washes off the land or erodes from stream banks, smothering bottom-dwelling aquatic organisms and reducing water clarity.

Bottom dwelling organisms are the base of the food chain and loss of these species affects much of the aquatic ecosystem. Most sediment pollution is associated with land disturbing activities and with the creation of more and more impervious surfaces, like roads and parking lots, which change the hydrology and increase the velocity at which runoff water is delivered to our streams. These changes in hydrology erode the stream banks, adding more sediment to the stream bottom. Region 4 and our states are working with many farmers to reduce erosion and run off that carries sediment into streams and rivers.

Working with a Tribal Partner to Restore Wetlands and Stream Riparian Areas

The Goose Creek Community on the Cherokee Indian Reservation in North Carolina has experienced an increase in housing construction and paving of roadways over the past several years. This increased



EPA provides funding to states and tribes for the repair and restoration of impaired streams.

construction has reduced the amount of wetlands and ground area to absorb water runoff. As a result, excessive amounts of water and sediment are carried into streams during storms. Many stream banks were eroding, culverts overflowing, and flooding occurred in some areas.

We provided the Eastern Band of Cherokee Indians with funds to focus on repairing impaired streams located on the Indian lands. The tribe is working with the landowners, community members, and community groups to restore streams in the Goose Creek watershed. As a result of these efforts, they will reduce sediment in streams, restore valuable trout habitat, and educate the community about water quality protection. The tribe began water quality monitoring, community outreach and stream restoration in the Goose Creek project in 2003. In the last year, the Tribe has restored

5,400 feet of stream areas and 6,800 feet of storm water ditch repair. They have also planted more than 4,000 native trees and shrubs in the area to stabilize soil and restore culturally used native plants. These restoration efforts have reduced turbidity and improved water quality.

Preliminary monitoring data indicates turbidity levels have dropped more than 300 percent when sampled at average stream flows.

Emerging Technologies in Science and Research

Over the past two years, Region 4 has developed and deployed a new approach for evaluating trace contaminants in surface waters. The Infiltrax 300 Trace Contaminant Sampler has been successfully used to characterize very low concentrations of PCB congeners and dioxins by passing a high volume of water through a combination of glass fiber filters and highly adsorbive resin. This innovative sampling method, coupled with high-resolution mass spectrometry analytical methods, has enabled Region 4 to obtain data at levels that were previously unattainable. This effort demonstrates the ability to leverage the knowledge of analytical chemists, experts in analytical method performance,

and field expertise of our environmental engineers and biologists. The result of this combined effort is superior data for environmental decision making.

Another emerging technology is Microbial Source Tracking (MST), a novel approach that is considered to be the best tool available for identifying sources of fecal pollution in water. It is based on the ability to associate specific strains of bacteria with specific host species. Recently developed DNA based methods are showing great promise in offering the most precise identification of specific types of sources. MST technology can be used to address a variety of issues, including TMDL, Animal Feed Operations (AFOs), beach closures, and other point source and non point source issues in Region 4.

Region 4 has also collaborated with the Alabama Department of Environmental Management (ADEM) to develop a method for periphyton (attached algae) bio-assessment in the Cahaba River Basin. The work during FY 2004 has served as a starting point for the continued refinement of the periphyton bio-assessment techniques, an effort that will provide biological data for the development of future nutrient TMDLs in Region 4.

Goal 3

U.S. Environmental Protection Agency, Region 4 ~ Accomplishments Report 2003 -2004

Land Preservation and Restoration

EPA Region 4 is working to preserve and restore the land using the most effective waste management and cleanup methods available. We use a hierarchy of approaches to protect the land: reducing waste at its source, recycling waste, managing waste effectively by preventing spills and releases of toxic materials, and cleaning up contaminated properties. The Region is especially concerned about threats to our most sensitive populations, including children, the elderly, and individuals with chronic diseases. EPA draws upon two environmental laws to address these concerns: the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund).

Controlling the many risks posed by accidental and intentional releases of harmful substances presents a significant challenge to protecting the land. We use an approach that integrates prevention, preparedness, and response activities to minimize these risks. Improving the Region's readiness to respond to emergencies through training, development of clear authorities, and provision of proper equipment will ensure that we are



To prevent tire fires, EPA encourages recycling and market development for scrap tires.

adequately prepared to minimize contamination and harm to the environment when spills do occur.

Reducing Waste Generation and Increasing Recycling

Every year, the United States faces the task of managing more than 280 million scrap tires generated by a growing population heavily reliant on automobiles. Tire stockpiles are prone to fires, which are difficult to extinguish and emit many noxious pollutants to the air, water and soils. Over the past several years, EPA has spent millions of dollars dealing with tire pile fires.

States have played a major role in tackling the scrap tire problem

“Preserving and restoring the land using innovative waste management practices and clean up”

by restricting land disposal of tires, cleaning up existing piles, setting up recycling programs and trying to develop markets for the newly collected scrap tires. As a result, markets now exist for more than 70 percent of the newly generated scrap tires. However, the remaining amount is still land filled and stockpiled, many times illegally. Illegal transportation and disposal across state lines is still a challenging problem.

Managing Hazardous Wastes Properly

Region 4 has been working with the Department of Energy (DOE) to identify and clean up DOE facilities located in the region. In 2002, Region 4 signed agreements for Tennessee's Oak Ridge Reservation (ORR), and South Carolina's Savannah River Site (SRS), in which EPA, DOE, and the state regulatory agencies agreed to accelerate cleanup activities and reduce risk in a cost-effective manner.

A major focus of the Accelerated Cleanup Plans (ACP) at these facilities is the integration of the deactivation and decommissioning (D&D) activities with the Superfund cleanup activities. Integrating these major programs requires innovative, flexible

regulatory approaches and streamlining the documentation used to support decision making. The progress made to date at both SRS and ORR has been significant, with both sites undertaking highly successful D&D activities while advancing environmental cleanups.

Another major focus of the accelerated cleanup program is the development of new approaches to cleaning up the sites. For SRS, DOE anticipates a savings of \$12 billion in clean-up costs and 13 years in time, because of the improvements made through the ACP. At ORR, DOE estimates the cost reduction for the cleanup to be \$2.2 billion and a time savings of five years.

Through the accelerated cleanup program, EPA, DOE and the states have been able to address environmental contamination at SRS and ORR quicker and in a more cost-effective manner. This effort has resulted in more protection of human health and the environment at the sites and surrounding areas.

Preparing for and Responding to Accidental and Intentional Releases

EPA plays a major role in reducing the risks that accidental and intentional releases of harmful substances and oil pose to human health and the environment.

Each year, the EPA emergency response staff assesses, responds to, mitigates and cleans up hazardous substance releases and oil discharges,

Underground Storage Tanks Program Minimizes Risk to Environment

Since the EPA's Underground Storage Tank (UST) program inception 20 years ago, EPA Region 4 and its tribal and eight state partners have been responsible for the oversight of more than 517,000 petroleum USTs in the Region. Working together, EPA Region 4 and its partners have closed nearly 347,000 old, substandard tanks and cleaned up more than 73,500 petroleum leaks, which represents 70 percent of all releases. Through our combined efforts, we have completed more than 6,100 cleanups.

Not only have cleanups been successful, but a more important goal has been achieved: prevention of releases to the environment. Through our combined efforts, nearly all substandard tanks have been closed, replaced, or upgraded. This has resulted in a dramatic drop in new releases. Over the history of the Underground Storage Tank program in Region 4, EPA and its partners have discovered approximately 9,200 releases per year. In 2004, only 1,900 releases occurred -- a dramatic 80 percent reduction -- which shows the tank program is working.

whether accidental, deliberate, or naturally occurring. These incidents include everything from small spills at chemical or oil facilities to natural disasters such as hurricanes, earthquakes, and floods. While emergencies will never be completely eliminated, Region 4 will continue respond to and mitigate threats to human health and the environment posed by those emergencies.

The 2004 hurricane season was unprecedented for EPA Region 4. Four major hurricanes struck the southeastern United States between mid-August and late September. During that period, the President

declared disasters in five of the eight Region 4 states -- Florida was declared for each of the four hurricanes. The timing and severity of these natural disasters required that the Region 4 emergency response program re-direct its efforts to respond to threats posed by hazardous materials in the wake of the storms.

Operating in accordance with EPA's National Approach to Response strategy, Region 4 organized responses under the principles of the Incident Command System. Each hurricane response was managed by Incident

Goal 3 ~ Land Preservation and Restoration

Management Teams made up of On-Scene Coordinators and other EPA volunteer staff. The overall coordinated response was managed by an Area Command structure operated out of the Region 4 Regional Response Center. Working 12-16 hours per day, seven days a week, EPA staff coordinated multi-million dollar response efforts across the Region. These efforts resulted in protection of millions of citizens from hazards associated with hazardous materials releases caused by wind and flooding.

Cleaning Up and Re-using Contaminated Land

The reuse of the 20-acre Solitron Microwave Superfund site in Port Salerno, Fla., is providing an opportunity to transform a stigmatized, long-vacant piece of property into a valued community asset. Port Salerno Industrial Park will soon provide much needed retail, office, and warehouse space within this rapidly growing community in southeastern Florida.

Port Salerno Industrial Park LLC purchased the Solitron Microwave site in March 2003. Plans for the industrial park include 150,000 to 180,000 square feet of retail, office, and warehouse space located on eight lots. In August 2003, the company removed all remaining, dilapidated on-site buildings, began construction for the industrial park and predicts full build out by 2009.

Port Salerno Industrial Park LLC's reuse of the site has been facilitated by the company's



EPA Region 4 coordinated response efforts during the unprecedented 2004 hurricane season.

sustained interest, EPA's active engagement, and a good working relationship between the company, EPA, and the local community.

Port Salerno Industrial Park LLC saw a significant real estate development opportunity at the site, given its size, accessibility, and location. EPA worked with the prospective purchaser to address the company's liability and property lien concerns. Recognizing that the site's reuse could generate jobs and tax revenues, Martin County government officials also supported the company's activities from the outset.

Maximizing Potentially Responsible Party Participation at Superfund Sites

More than two years ago the two creeks that drain the Copper Basin Mining District site were releasing more than 8,600 pounds of metals and more than 19,000 pounds of acid into the Ocoee River every day. As a result of the collaborative efforts of Region 4, the Tennessee Department of Environment and Conservation, and Glenn Springs Holdings, Inc., approximately 98

percent of all of these contaminants are now being managed or treated and are no longer draining into the Ocoee River.

More than 30 square miles of Polk County in southeastern Tennessee and Fannin County in northern Georgia were a deforested, barren, eroded landscape caused by copper mining and sulfuric acid processing. This has caused the degradation of large portions of the 10,000 acre North Potato Creek and the 3,000 acre Davis Mill Creek Watersheds and miles of the Ocoee River.

The legacy of environmental devastation has now been transformed to one of environmental restoration. The last two years have seen the completion of numerous projects in the Davis Mill Creek, North Potato Creek and Ocoee River watersheds. These actions have prevented millions of pounds of metals and acid from reaching the Ocoee River and will continue to protect this valuable resource. Clean up of this unusual mining mega-site via the Superfund Alternative site cleanup process is the result of the commitment and teamwork of the EPA, the Tennessee Department of Environment and Conservation, and Glenn Springs Holdings, Inc. The team's accomplishments over the last two years are protecting the Ocoee River, and providing a path for major environmental restoration.

Goal 4

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Healthy Communities and Ecosystems

State, county and local governments in the Southeast are working together through intergovernmental councils to develop regional approaches to Brownfield solutions. Through better management of their collective resources, participants are able to implement a collaborative, Region-wide process for identifying and prioritizing Brownfields for cleanup and future development.

Promoting Redevelopment through Collaboration

Land-of-Sky is one of 18 Regional Councils in North Carolina, serving Buncombe, Henderson, Madison and Transylvania Counties. With a combined population of 344,472, the region is characterized by a mixture of isolated rural areas, small towns, urban communities, and rapidly growing suburban or “fringe city” areas. Through its Regional Brownfields Initiative (RBI) the Council identifies potentially contaminated properties with potential for redevelopment.

Four sites selected by the RBI assessment shared a \$200,000 EPA Brownfields Assessment

“The dynamic interaction of habitat and people”



EPA is committed to ensuring clean air for our children.

Grant. One of the sites was an abandoned lumber treatment facility in the Town of Fletcher that is slated to become the new town center and central business district. The proposed town hall is the cornerstone of the “Heart of Fletcher” revitalization plan. A second site, the Riverlink Cotton Mill, anchors Asheville’s redevelopment plan for the French Broad Riverfront District. Asheville’s revitalization plan envisions a vibrant urban riverfront district that will attract new business, retailers and residents.

Two additional sites assessed in the grant are the Elk Mountain Landfill in Woodfin and the Grey Hosiery Mill in Hendersonville. Intended reuses include residential and mixed-use housing, greenspace,

and a cultural arts center.

Land-of-Sky has effectively used EPA Brownfield Assessment and Loan Fund Grants to preserve natural resources, restore historic and cultural assets and attract new business and industry to the area.

Supporting Healthy Communities and Ecosystem Decision Making

Sustainable Environment for Quality of Life (SEQL) is an EPA-sponsored project supporting the efforts of the 15-county Charlotte, N.C. -- Rock Hill, S.C., region to promote environmental improvements in air and water quality, while addressing concerns with economic development, land-use, transportation and energy issues. The Centralina Council of Governments (COG), the association of local governments in the region, is leading the project together with its South Carolina counterpart, the Catawba Regional Council of Governments.

More than 65 local governments across the Region have self-reported that they have implemented more than 500 action items to improve air and

Goal 4 ~ Healthy Communities

water quality and promote quality growth. Among other SEQL-related actions, the Centralina COG has also received additional EPA funding to support efforts to improve and manage water quality, to retrofit diesel school buses and to electrify a truck stop to eliminate idling emissions.

Protecting Children's Health

Protecting children from environmental risks is fundamental to EPA's mission. Children need clean air to breathe, clean water to drink, safe foods to eat, and a healthy environment to learn, grow and thrive. Children may be more vulnerable to some environmental risks because their nervous, immune, digestive and other systems are still developing and their ability to metabolize or fight toxins may be different from adults.

Many of the health problems that result from exposure to harmful environmental conditions can be prevented, and Region 4 is working hard to reduce the risks of our young population's exposure to harmful conditions.

Region 4 has supported and directed the Regional Pediatric Environmental Health Specialty Unit (PEHSU), which has trained more than 3,000 health care professionals in the area of childhood environmental health.

EPA Regional staff participate regularly in local, state, national and

Protecting and Restoring an Important Ecosystem

Protecting and restoring the large marine ecosystem of the Gulf of Mexico is of vital importance to EPA Region 4. The system's ecological health and sustainability is integral to maintaining many of the most valuable fisheries, tourism, energy, and marine transportation economies in the United States and Mexico. In overall importance, the Gulf's natural resource quality and abundance is the underlying foundation of all coastal communities throughout the five-state Region.

EPA Region 4 has worked through the Gulf of Mexico Program with states and other partners to define key activities to support attainment of environmental and health goals for the Gulf of Mexico. Gulf of Mexico issues can be broadly categorized as affecting water quality, public health, and habitat loss. Activities include:

- Supporting efforts to restore 20 percent of impaired segments in priority coastal areas
- Supporting projects which create, restore or protect 20,000 acres of important coastal and marine habitats in the Gulf of Mexico by 2009
- Supporting State and coastal community efforts to manage harmful algal blooms (HABs)
- Assisting the Gulf States in reducing contamination of seafood and local beaches
- Assisting in consumer awareness/educational efforts to reduce the rate of shell-borne *Vibrio vulnificus* illnesses
- Supporting efforts to reduce nutrient loadings to watersheds
- Supporting national and Gulf-wide efforts to address multi-jurisdictional problems such as the hypoxic zone and mercury in the Gulf of Mexico
- Fostering regional stewardship through Gulf Guardian Awards and outreach projects.



EPA Region 4 hosts an annual Environmental Awareness Day for area Girl Scouts.

international conferences and workgroups dealing with children's issues. Working with educators and athletic programs, we have supported the development of protocols for Atlanta area schools to follow during periods when air pollution levels are high.

High levels of air pollution have been associated with increased asthma in children. These activities have resulted in a significant increase in knowledge among health and environmental professionals, as well as the public, to address environmental hazards to children.

In addition, EPA Region 4 is partnering with the USDA Cooperative State Research Education and Extension Service (CSREES) to focus education, outreach and compliance assistance efforts on how lead and pesticide use affects children. These programs include advisory committees, Web sites, exhibits, resources directories, training

programs, health fairs, media releases and program development. These materials have been distributed to over 80 percent of the counties in the eight state region. Another effective educational tool is the "Renter Power Program", which is designed to educate low literacy tenants of environmental risks in affordable housing.

With EPA's assistance, states are also working with Latino audiences and Tribal nations to develop educational materials.

EPA Region 4 has been a leader in developing strategies to address childhood asthma. The Region coordinated the first federal/state summit to address asthma issues. One of the outcomes of this conference, which included participation from EPA, the Centers for Disease Control, the Department of Housing and Urban Development and Department of Health and Human Services, as well as state and local health officials, was the formation of a Regional Asthma Coalition. From this work states are now better prepared to develop and implement their own state-specific strategies to address childhood asthma.

EPA Region 4, along with all eight states in our Region, are very active participants in Children's

Health Month, which occurs each year in October. This annual event, which is recognized by federal and state proclamations, has proven to be a very effective way to educate our citizens in environmental issues that are particularly relevant to our children. One example is our partnership with the Girl Scout Council of Northwest Georgia with whom Region 4 hosts an Environmental Awareness Day during Children's Health Month. Over past two years, more than 500 Girl Scouts have participated in this event. EPA volunteers from all program offices assist in distributing educational materials and answering questions. The Girl Scouts who attend this event learn how they can be active participants in protecting their environment and reduce their exposure to environmental health hazards. By participating in Environmental Awareness Day, the Girl Scouts also earn credit toward the Eco-Action and Environmental Health Badge.

Working to Ensure Our Schools and Homes are Environmentally Safe

In the last two years, the state of Alabama, supported by EPA pesticide grants, more than tripled the number of children (now, almost 80,000) protected in schools using integrated pest management (IPM). Auburn University and the Alabama Department of Agriculture worked directly with targeted schools in Mobile County, Auburn and Elmore County to

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improve pesticide management at these schools.

Transitioning to Lower-Risk Pesticides

The Tennessee Department of Agriculture's "Operation Safe City," funded by an EPA Urban Initiative grant, reached more than 700,000 people in the Memphis area via television and radio. The project was designed to educate citizens on the dangers of misusing pesticides. Memphis was one of the cities in the late 1990s that had many houses contaminated by the illegal use in residences of the agricultural pesticide, methyl parathion. There were two search warrants and five arrests for illegal pesticide distribution and use as a result of this project. Eighty calls for pesticide information and complaints were received by a toll free number used for this project.

Mississippi farmers who previously applied the pesticide chlorpyrifos (sold under the trade name Lorsban 15 G) for prevention and control of chinch bugs control on corn, have discontinued this practice due to a highly successful demonstration and education project funded by Region 4's Strategic Agricultural Initiative. Mississippi researchers were able to prove to farmers that this practice was not

cost effective and that applications should occur only when needed based on field monitoring of the pest. Pesticide dealers in three delta areas report that over a two-year period, corn growers have drastically reduced the purchase of chlorpyrifos.

Protecting and Restoring Ecosystems through the National Estuary Programs

Region 4 has developed partnerships in six estuaries of national significance, known as the National Estuary Programs (NEPs). Four of these NEPs are located in Florida -- Sarasota Bay, Tampa Bay, Indian River Lagoon and Charlotte Harbor. One NEP is in North Carolina, the Albemarle-Pamlico Estuarine system, and one is in Alabama, the Mobile Bay system. With the support and leadership of Region 4, our NEPs protected and/or restored more than 50,000 acres of habitat, including critical

estuarine, riparian, and coastal wetlands.

Protecting Wetlands Through Innovative Permitting

We have a national goal to not only protect the Nation's wetlands, but to achieve an overall increase in wetlands. One of the tools we developed to achieve this goal is an innovative wetlands permitting approach developed in collaboration with our federal and state partners and the home building industry in Bay and Walton Counties, Florida. We assessed and ranked wetlands in a 47,000 acre area according to their ecological value. Based on this assessment, developers associated with the home building industry will impact only a small part of the wetlands on this large tract through a Regional General Permit (RGP) issued by the Corps of Engineers. In exchange for the RGP, the developers have agreed to protect 99 percent of the high quality wetlands and 80 percent of the low quality wetlands. This predictable, local watershed-based plan meets the requirements of state and federal regulatory agencies, and at the same time, reduces the waiting period for receiving a wetlands permit from up to three years to three weeks.



EPA is committed to ensuring the protection and restoration of wetlands.

Goal 5

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Compliance & Environmental Stewardship

EPA Region 4 protects human health and the environment by improving performance and results through regulatory and non-regulatory means.

The Region's approach to ensuring compliance with environmental regulations relies



Planting trees along stream borders improves water quality.

on four strategies: joint planning/priority setting with our state and tribal partners; applying appropriate compliance assurance tools to identified problems; targeting our efforts towards noncompliance that will produce the greatest environmental and human health benefits and measuring the results of our efforts. EPA Region 4 has also been successful in promoting environmental stewardship by

encouraging waste recycling to the greatest extent possible, minimizing or eliminating pollution at its sources and using energy and national resources efficiently to reduce impacts on the environment.

Joint Planning Results in Environmental Benefits in Indian Country

EPA Region 4 has been very successful in protecting human health and the environment on tribal lands by exploring ways to prevent pollution and conserve resources. In collaboration with the Region's six tribal governments, Region 4 has developed Tribe/EPA Environmental Agreements (TEA). The TEA developed by Region 4, known as Tier 3 TEA, is a detailed document that discusses past accomplishments, provides analysis of the current environmental conditions and forecasts activities to address tribal environmental priorities.

In December 2004, the EPA Region 4 Administrator signed the Region's first Tier 3 TEA with the Chief of the Catawba Indian Nation. The Region continues to work with the remaining five Region 4 tribal governments to finalize their TEAs.

During the past year EPA Region 4 provided funds for an environmental professional position with the United South and Eastern Tribes, Incorporated (USET), a consortium of 24 tribal governments, headquartered in Nashville, Tennessee. This professional assists the tribal members in a number of areas, including field work, analysis, environmental planning and quality assurance issues. The concept of a "shared professional" recognizes that smaller tribes have difficulty retaining technical professionals due to salary caps and small budgets. By working together, USET members have access to professional consultation at a minimum cost to the member tribes.

Protecting Human Health Through Effective Compliance Incentives

EPA Region 4 has effectively used the Management, Operation and Maintenance (MOM) Program to improve environmental management practices related to sanitary sewer systems. The goal of MOM is to reduce, and where possible to eliminate, sanitary sewer overflows (SSOs). A sanitary sewer overflow is the discharge of raw sewage which

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may have adverse effects on the environment and public health. The MOM Program Project targets all sewer utilities in a watershed or geographic area. Utilities are asked to perform a self-assessment of their management, operations and maintenance programs and where necessary propose changes, including schedules for implementing these changes. Participating utilities may get a significant reduction in penalties for SSOs and will have input into any required schedules. Utilities that do not participate will be inspected by EPA and the State and if violations are found traditional enforcement will ensue.

“Improving environmental performance through compliance and protecting human health and the environment”

The MOM Programs Project is in its second cycle. Cycle 1 was initiated in 1998 and a watershed was selected in each of the eight Region 4 States. Of the 81 utilities invited in Cycle 1, 73 (or 90%) participated. Appropriate enforcement actions have been taken for most utilities in Cycle 1, resulting in two judicial enforcement actions and 27 administrative actions and participating States taking 4 formal enforcement actions. Cycle 2 has

been initiated in two States and the initial actions are underway.

Metropolitan Sewer Subdistrict, SC, is a satellite sewer system of the Western Carolina Regional Sewer Authority. As a satellite sewer system, Metropolitan does not have a discharge permit and in the past, had not been regulated by EPA. As part of the MOM Programs Project, Metropolitan performed a self assessment. Without any formal EPA action, Metropolitan implemented the needed program improvements. Metropolitan’s continued improvement has been tracked over three years and their participation in the Project was formally ended in December 2004.

Reducing Air Pollution

In the settlement of Clean Air Act violations at Santee Cooper facilities in South Carolina, EPA successfully negotiated record reductions in air pollutant emissions. Nitrogen oxide emissions will be reduced by 29,500 tons per year and sulfur dioxide pollutant emissions will be reduced by 37,500 tons per year. The settlement has also resulted in substantial upgrades of pollution controls at Santee Cooper facilities so that now 88 percent of the electric power generated by this utility will be from plants operating with modern pollution controls. The settlement also includes the expenditure of \$4.5 million

in supplemental environmental projects that will greatly benefit the community and the environment. These projects include land conservation, an energy efficient technologies project, and the expenditure of \$1 million to retrofit diesel school buses.



EPA has successfully negotiated record reductions in air pollutant emissions.

Protecting the Land and Water from Oil Spills

A few days before the Christmas holiday in 1999, the State of Mississippi experienced an environmental disaster. One of the largest crude oil pipelines crossing the state weakened and crude oil burst into a pristine environment. For approximately 25 days, 336,000 gallons of crude oil sprayed undetected out of the breached pipeline and saturated the

Goal 5 ~ Compliance & Environmental Stewardship

Leaf River watershed. This spill, which was the largest in Mississippi history since the enactment of the Oil Pollution Act, resulted in river and riparian oiling, animal deaths, wetland destruction and overall significant environmental harm.

EPA, in collaboration with the State of Mississippi, immediately set to work to ensure complete cleanup, substantial restoration, general and specific deterrence, and enhanced environmental protection.

We were successful in arriving at a settlement that included a \$1 million civil penalty that was split between the United States government and the State of Mississippi.

Additionally, the settlement called for the permanent protection of more than 1,300 acres including; the restoration of the Leaf River stream and riparian zone; the restoration of the damaged wetlands; continued monitoring of the groundwater; a reimbursement payment of more than \$110,000 to federal and state natural resource agencies for their work in assessing the damage and overseeing the cleanup; and the funding of a wood duck nesting project to be completed by the U.S. Fish and Wildlife Service.

Maximizing Environmental Stewardship

EPA Region 4 has been involved in a number of initiatives with Historically Black Colleges and Universities in the Southeast. In 2004, EPA Region 4 partnered with Jackson State University, the Mississippi Department of Environmental Quality, the Mississippi Small Business Assistance Program and EPA colleagues in Region 6 to sponsor an

Suspension and Debarment Program

Suspension and debarment actions protect the Federal Government from doing business with individuals, companies, or grant recipients who pose a business risk to the government. EPA's management authority to suspend or debar individuals and entities is an effective administrative tool to address waste, fraud, abuse, poor performance, environmental noncompliance, or other misconduct. Suspension and debarment actions prevent companies, organizations and individuals from participating in future federal government contracts, subcontracts, loans, grants and other assistance programs. Region 4 is a consistent leader in significant suspension and debarment actions.

In 2004, Region 4 suspended and debarred the former finance director of the Lower Mississippi Conservation Committee (LMRCC) for embezzlement of \$630,000 from federal grant monies. Investigations showed the employee was able to embezzle funds because the LMRCC failed to establish a proper accounting system in accordance with generally accepted accounting standards or agency directives, and to establish safeguards to prohibit employees from using their position for personal gain. The suspension and debarment and conviction led the LMRCC to enter into a Compliance Agreement requiring the hiring of a firm to establish an accounting system, annual training on fraud prevention and grants management, and the appointment of an ethics compliance officer to investigate allegations of matters that raise questions as to business integrity.

Region 4 also addressed serious and extensive misconduct by the fourth largest cruise line headquartered in the United States. In July 2002, NCL (Bahamas) Limited (NCL), with responsibility for Norwegian Cruise Line Limited (NCLL), pleaded guilty and was sentenced for violating the Act to Prevent Pollution from ships by misleading the U.S. Coast Guard. For several years, NCLL had concealed the illegal discharge of oil-contaminated bilge wastewater into the ocean around South Florida from its vessel, S.S. Norway, by making false statements in the ship's Oil Record Books.

Goal 5 ~ Compliance & Environmental Stewardship

Environmental Compliance Assistance Workshop.

In November 2003 EPA Region 4 and Jackson State University initiated an Environmental Science Partnership that is designed to ensure a pool of culturally diverse graduates who are qualified to address the environmental challenges of the future.

This agreement, along with funds provided by EPA Region 4, supports and enriches the chemistry, biology and related environmental science and engineering programs at Jackson State University. The agreement has been expanded to include the Mississippi Department of Environmental Quality.



EPA Region 4, in collaboration with the State of Mississippi, initiated an Environmental Science Partnership with Jackson State University.

Successful initiatives like this help ensure that EPA will continue to attract a skilled and motivated workforce. Region 4 remains committed to achieving excellence by establishing cooperative partnerships with other minority institutions and states in the Region.

Measuring Results: Region 4 achievements in 2004

- 145,021,097 pounds of pollutants, 41% of the national goal, reduced through enforcement actions and supplemental environmental projects;
- 1,150,355 million cubic yards of contaminated soil will be cleaned up;
- 6 million cubic yards of contaminated water will be cleaned up;
- 579 acres of wetlands will be protected or restored;
- 185 facilities performed self-audits and voluntarily disclosed violations of environmental laws resulting in a 157% increase over FY 2003 levels;
- \$98.5 million paid in fines by polluters, a 150% increase over FY 2003;
- \$503 million, as a result of enforcement settlements, will go toward cleaning up polluted sites and protecting against further environmental harm;
- \$98 million in private party commitments will defray the cost of cleaning up Superfund sites;
- \$7.5 million will be spent by polluters on SEPs, many of which will benefit local communities;
- 162% increase in the number of expedited administrative enforcement cases where, under certain conditions, compliance is achieved quickly through a non-negotiable, discounted penalty instead of more traditional, more costly enforcement; and
- 39 defendants charged with environmental crimes, resulting in sentences totaling 63 months imprisonment, 236 months probation, and \$1,715,800 in fines and restitution.

INFORMATION ABOUT REGION 4 AND RESOURCES

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Waste Management Division (404) 562-8651

Water Management Division (404) 562-9345

Office of Environmental Accountability (404) 562-9655

Science and Ecosystem Support Division (706) 355-8500

Criminal Investigation Division (404) 562-9795

TTY Numbers for the Hearing Impaired (404) 562-8339

EPA Web sites

EPA Region 4

www.epa.gov/region4

Air - Indoor Air Quality (IAQ) Tools for Schools

www.epa.gov/iaq/schools/scfaqs.html

Air, Pesticides & Toxics Management Division (EPA Region 4)

www.epa.gov/region4/air/

Compliance Assistance (EPA Region 4)

www.epa.gov/region4/ead/compliance/.htm

EPCRA (Emergency Planning & Community Right to Know Act)

www.epa.gov/region4/air/epcra/index.htm

Lead in Paint, Dust and Soil

www.epa.gov/lead/

Pest Management in Schools

www.epa.gov/pesticides/ipm

Publications (Listing of EPA publications online)

www.epa.gov/epahome/publications2.htm

Waste Management Division (EPA Region 4)

www.epa.gov/region4/waste/

Water Management Division - (EPA Region 4)

www.epa.gov/region4/water/

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