

ACCOMPLISHMENTS REPORT

FEDERAL FISCAL YEAR 2001

(OCTOBER 1, 2000 - SEPTEMBER 30, 2001)

RCRA ENFORCEMENT



RCRA Compliance Unit - Prevention and Protection

TABLE OF CONTENTS

Executive Summary	1
EPA New England's RCRA Compliance Unit	2
Historical Background	3
Open Letter to the People of New England	5
Mission/Vision Statement	6
Trends and Opportunities - Objectives for 2002	6
Metal Services	6
Large Quantity Generators	6
Colleges and Universities	7
Public Agencies	8
Subpart CC	8
Environmental Justice	9
Sensitive Ecosystems	9
RCRA Accomplishments/Measurement of Success	10
Regulated Universe Statistics	10
Hazardous Waste Notifications	11
Inspections	13
Enforcement	15
Enforcement Measurement	16
Violation Analysis/Significance	17
Significant Case Highlights	22
Brown University	22
NuChrome	24
Massachusetts Institute of Technology	25
United Oil	27
University of Rhode Island	28
National Semiconductor	29
A-1 Precious Metal Plating	30
Rhode Island Technical Plating	31
Arkwright	31
Metals Recycling, LLC	32
Fiscal Year 2001 RCRA Compliance Unit (Management and Staff)	32

EXECUTIVE SUMMARY

The following report is a summary of the activities conducted by the RCRA Compliance Unit for federal fiscal year (FY) 2001. The report describes the history of the federal hazardous waste program, program priorities, inspection and enforcement statistics, measures of program success and significant case highlights.

2001 has been a year of challenges and accomplishments for the RCRA Compliance Unit. The events of September 11 have changed the way in which we view the world. This is especially true with the heightened focus on security and preventative measures. RCRA, as a prevention program, will certainly have an expanded role to play. Many of the RCRA requirements are designed to ensure that local officials and emergency responders be informed of the types of hazards posed by wastes produced at large volume generators. The rules also require that written arrangements with local authorities be in place to effectively deal with any emergencies where these wastes may be encountered. Firefighters and emergency response crews at the World Trade Center are actively dealing with hazardous waste issues as they conduct their salvage operations.

EPA New England's RCRA Compliance Unit completed another successful year in 2001. The federal RCRA program continues to blend its compliance monitoring and enforcement with compliance assistance and outreach tools as part of our efforts to actively enforce the nation's hazard waste regulations. This "carrot and stick" approach has proven to be an effective way to implement the program. It has allowed EPA the opportunity to interact with the public and regulated community on a more personal, less adversarial level. The time EPA has spent at the various workshops and seminars has been beneficial. We have learned as much from you as you have from us. At the same time, the RCRA program continues to maintain a strong enforcement presence in the field.

The success of the RCRA program in New England is due to the efforts of both EPA and the many dedicated RCRA staff from our six New England states. While there is variation among the states in how they employ strategies and tools to implement the program, it is this diversity that has resulted in innovative approaches to achieve the goals of the RCRA program. EPA has found that both the state and federal government have learned a great deal from one another. EPA enjoys a strong working relationship with each of our New England states.

One of the greatest challenges facing the RCRA inspection and enforcement program is the measurement of success. The goal of the RCRA program is to prevent hazardous wastes from being mishandled and impacting human health and the environment. We know, by the very nature of our job, that we have protected the environment and public

health every time we conduct an inspection and each time we issue an enforcement action. In some cases, measurement is easy. Improperly disposed hazardous waste that results in the excavation of tons of contaminated soil to eliminate the threat and return a site back to a safer condition is the simplest way to measure success. In other situations measurement is not so simple. For example, when we require a company to secure the top to a drum storing ignitable wastes, we often hear that this type of violation is a “technical violation by company representatives. At a minimum, we’ve stopped these chemicals from evaporating into the air reducing the level of solvent vapors that could be inhaled by employees working around this container in the course of their jobs. In the worst plausible scenario we’ve reduced or eliminated the potential for these vapors to accidentally ignite and possibly lead to serious injury or death as well as the potential loss of the facility in the event of such an accident. While a loose-fitting top might be viewed as a “technical violation, the potential consequences resulting from this practice are significant and real.

In New England, the federal RCRA program is not only concerned about protecting human health and the environment but is also concerned about ensuring that businesses can continue to thrive as a result of safe waste management practices. Proper management of hazardous wastes serve to reduce the risks at facilities that generate such wastes. Nationally, EPA has documented many cases where facilities have been lost to catastrophic events due to poor waste management practices. The RCRA program in New England seeks to protect the livelihood of its business leaders, in addition to the employees and the public who work and may live in the neighborhoods that surround these facilities. Safe waste manage practices help protect the investments that our businesses, cities and towns make to help make New England a liveable place.

During 2001, EPA continues to have success with its field inspection strategies and strong enforcement. EPA has filed many significant cases and has reached many settlements that will benefit both the environment and public health. Enforcement is intended to provide a deterrent and to level the playing field against those who choose to seek an economic advantage over their competitors by non-compliance. In a deviation from EPA’s normal practice of reporting numbers of inspections and enforcement actions, this report will also include an emphasis on trying to measure the success of the federal program in terms of the types of violations found and the significance of these violations. The report will also focus on other indicators that EPA New England believes demonstrates that the RCRA program is working as intended by Congress.

EPA New England’s RCRA Compliance Unit

The RCRA Compliance Unit consists of a nine-member staff dedicated to enforcing the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid

Waste Act (HSWA) of 1984. The authority to regulate and ensure the proper disposal of the nation's hazardous wastes is derived from these Acts. The RCRA Compliance Unit is located within EPA New England's Office of Environmental Stewardship. The Unit is responsible for enforcing the federal hazardous waste program and works closely with our New England state RCRA programs. The states represent the front lines of the hazardous waste program in this Region and the RCRA Compliance Unit will continue to coordinate and work with these dedicated and talented individuals. Our office is located at 1 Congress Street in downtown Boston.

Historical Background

On October 21, 1976, Congress enacted a law to regulate handling and disposal of hazardous wastes which are generated mainly by industry. This law also required that all open dumping of solid wastes be brought to an end throughout the country by 1983. This law was referred to as the Resource Conservation and Recovery Act (RCRA - pronounced "Rick-Ra" or "Wreck-Ra"). RCRA (Public Law 94-580) also called for research, demonstration, study, training, information dissemination, and public participation activities to enlarge the base of knowledge and public involvement necessary for developing strong State and local programs.

In the 1970's, new federal laws and regulations were promulgated to improve water and air quality. Wastewater treatment units and air pollution control devices, required by these laws, removed toxic pollutants from the water and air. The use of pollution control devices to clean the water and air created sludges that contained concentrated levels of toxins. These toxin-laden sludges were not regulated and were combined with growing amounts of solid wastes generated throughout the country. The successful efforts to clean our water and air, resulted in an increase in the quantity and toxicity of solid wastes that were being disposed to the land. Until the passage of RCRA, the disposal of solid wastes on land had gone largely uncontrolled, resulting in numerous documented instances of serious effects on human health and environmental quality. The contamination of groundwater by substances leaching from disposal sites became a primary concern, especially where such groundwater was the primary source of drinking water. The most urgent objective of RCRA was to prevent this and other environmental effects from improper disposal.

In signing the law, President Ford cited the special threat of hazardous waste disposal, calling it "one of the highest environmental problems confronting the Nation. Under the law, EPA is required to identify and publish a list of hazardous wastes and set standards for the handling, transportation, and ultimate disposal of these wastes.

As EPA became more knowledgeable and sophisticated in the management of hazardous wastes, President Reagan signed the Hazardous and Solid Waste Amendments of 1984 (HSWA - pronounced "Hiss-Wah "). This rule provided further protections from the disposal of hazardous waste to the land by banning all land disposal and directing EPA to develop treatment standards for all hazardous waste and establishing concentration levels for toxic constituents that were acceptable for land disposal.

March 15, 2002

To the People of New England:

As the Chief of the RCRA Compliance Unit, it is my goal and the goal of my staff to ensure that all hazardous wastes generated in New England are safely managed and properly disposed to protect our precious New England environment. It is also our goal to educate both the public and private industry about the wisdom of choosing safer alternatives to many of the toxic chemicals used in our homes and businesses and to help New Englanders create a healthier, safer environment for you and your children.

As a native New Englander, born and raised in the Greater Boston area, I grew up enjoying and appreciating our environment. Whether it was playing outdoor sports like soccer and baseball, hiking the Blue Hills, camping on Cape Cod or vacationing in the Maine woods to fish for that elusive Largemouth Bass, I learned to appreciate the diversity of the New England environment at an early age. Many of the RCRA Compliance staff are, like me, native New Englanders who share this same passion and appreciation for the environment. It is our commitment and promise to preserve and protect our natural resources so that you, your children and grandchildren can continue to enjoy the special place that we call New England.

Sincerely,

Kenneth B. Rota, Chief
RCRA Compliance Unit
United States Environmental Protection Agency
New England Office, Region 1



Mission/Vision Statement

The mission of the U.S. Environmental Protection Agency is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends

Trends and Opportunities - Objectives for 2002

Over the past calendar year, the New England federal RCRA program has focused its attention on several areas of the program: Metal Services, Large Quantity Generators, Colleges and Universities, Public Agencies and Subpart CC.

Metal Services:

- ▶ The metal service industry continues to be plagued with serious non-compliance. In particular, EPA has found that smaller shops pose significant environmental and human health threats as a result of poor waste management practices and lack of employee training. In 2001, the RCRA Compliance Unit had requested the assistance of EPA's Removal Program to address real threats posed by improper waste management at two such facilities.
- ▶ In FY02, the RCRA Compliance Unit will continue to maintain a field presence at these facilities. Our Assistance and Pollution Prevention Office has and will continue to offer compliance assistance to the Metal Services Sector.
- ▶ An additional part of EPA's metal finishing strategy includes the Strategic Goals Program. This program is an industry-government partnership that is designed to assist metal finishers in reaching compliance and going beyond compliance. The Strategic Goals Program includes workshops, an internship program and a weblink containing other resources to assist Metal Finishers and improve their environmental performance.

Large Quantity Generators:

- ▶ The RCRA Compliance Unit has detected an increased pattern of non-compliance at Large Quantity Generator (LQGs) facilities where a significant period of time

has elapsed between inspections. LQGs are facilities that generate greater than one metric ton of hazardous waste per month (2,200 pounds). Many LQGs that have not been physically inspected within the past five years by EPA or the state have had more significant non-compliance with the RCRA regulations than those facilities inspected on a more frequent basis.

- ▶ The federal program will continue to focus on large generators of hazardous waste that have not been inspected with the last five years. Facilities that maintain active, effective hazardous waste management programs do so at considerable expense. Those that do not are at a competitive advantage. The federal program will continue to focus on Large Quantity Generators not inspected within the past five years to ensure that the RCRA regulations are complied with and to also recoup any economic benefit and create a level playing field for the business community.

Colleges and Universities:

- ▶ Colleges and Universities were originally identified as a sector of concern during RCRA inspections conducted at Urban Justice and Sensitive Ecosystem areas. Colleges are located in both urban environments as well as bucolic settings. EPA's inspections at colleges and universities found significant compliance problems regardless of the location of these facilities. EPA has observed situations where universities have contaminated their own property; stockpiled containers storing unknown wastes from unknown origins; improperly stored incompatible wastes; evaporated ignitable and volatile wastes in lieu of proper collection and storage; and, in one instance, disposed of waste on-site that resulted in EPA contacting Emergency Removal personnel from the state to stabilize the situation.
- ▶ College and Universities have demonstrated an improvement in their waste management procedures as evidenced by more recent inspections. EPA has also received telephone calls and letters from these institutions that are revealing a higher level of competence in this area. The ability of smaller colleges to comply with RCRA still remains questionable. EPA will continue to conduct inspections of this sector with an increased focus on the smaller campuses to determine their ability to comply with the regulations. Many colleges and universities have recently signed up to voluntarily audit and self-disclose violations at their facilities in return for reduced enforcement. The RCRA Compliance Unit is encouraged by this effort and find that approximately 153 facilities have signed up.
- ▶ OES has also established a College and University Integrated Strategy to provide

targeted compliance assistance in three phases. Phase I is designed to provide basic regulatory compliance, including the development of workshops, web-based learning and continued enforcement. Phase II involves the use of Best Management Practices to provide the necessary tools for colleges and universities to conduct environmental audits and implement Environmental Management Systems (EMS) at their campuses. Phase III, the final phase, involves sustainability, where environmental activities will be encouraged to go beyond compliance (e.g., green procurement, energy efficiency, etc.).

Public Agencies:

- ▶ Federal, State and Local governmental agencies continue to pose significant environmental problems. A recurring theme with public agencies is the lack of resources to comply with the same regulations other businesses must comply with. EPA has found many instances of improper storage and disposal of hazardous wastes by this sector. In fact, some of our most serious cases have come from this sector. All public agencies must demonstrate a higher level of commitment and lead by example.
- ▶ The RCRA Compliance Unit will continue to focus on public agencies. Many of our most recent inspections have found that public agencies are still not getting the message. Similar to the College and University sector, EPA is working with the American Public Works Association (AWPA) and has developed a DPW Audit Initiative. Through this initiative, EPA has received a commitment from many public works departments to conduct self-audits and disclose violations at their facilities in return for reduced enforcement. The RCRA Compliance Unit is encouraged by this proactive effort. To date, over 350 facilities have agreed to conduct audits.

Subpart CC:

- ▶ The Subpart CC regulations are designed to control and contain volatile organic compounds (VOCs) that are stored in tanks or containers. VOCs are a major contributor and precursor to ground level ozone formation. The increase in ground level ozone is known to have significant health impacts, especially for children and older adults. Increased ozone levels also negatively impact agriculture and result in increased crop damage.
- ▶ The RCRA Compliance Unit has conducted focused inspections on facilities that manage VOC-containing wastes. As part of the inspection process, the RCRA inspectors have worked in coordination with other EPA inspectors from our Chelmsford lab. Through these efforts, we have documented significant VOC

emissions that have been improperly released from facilities storing VOC wastes. The RCRA Compliance Unit will continue to focus on identifying additional facilities and storage systems that are not properly operated. Through this effort we intend to reduce the health and environmental risks posed by the release of VOCs into the atmosphere from these systems.

Environmental Justice:

- ▶ Environmental Justice (EJ) is an important part of EPA's mission. EJ will continue to play a role in the RCRA Compliance Unit's inspection targeting strategy, to identify candidates for inspection. Many EJ issues identified by local communities have not been hazardous waste issues. Communities often identify solid waste problems, such as abandoned vehicles demolition debris or municipal trash disposed on vacant city property as issues of concern. The RCRA Compliance Unit will continue to inspect facilities located within EJ areas with a focus on Supplemental Environmental Projects (SEPs) for cases located within an EJ area. SEPs are a component of some enforcement case where a facility has been assessed of monetary penalties and seeks to have a portion of that penalty used to fund a project that will provide significant benefits to human health or the environment. While SEPs are not mandatory, the RCRA Compliance Unit is committed to encouraging the use of SEPs in EJ areas that will improve the environmental conditions and help increase the quality of life of those individuals living within these communities.

Sensitive Ecosystems:

- ▶ The RCRA Compliance Unit also targets inspections at facilities within Sensitive Ecosystems. EPA's Office of Ecosystem Protection (OEP) and the New England State Environmental Agencies have identified areas that are referred to as "Special Places" throughout the six states. These "special places" contain critical habitats or other areas of significant environmental interest. To the extent the RCRA Compliance Unit can identify facilities within these areas as part of the inspection process, it will do so and will encourage the use of Supplemental Environmental Projects (SEPs) resulting from any enforcement cases to further protect these "special places."

Neither EPA nor the States have the resources to inspect every facility in New England. There are at least 23,000 active facilities in New England that are currently tracked in the RCRA database. Approximately 800 inspections were conducted by Federal and State inspectors during 2001. An objective of the RCRA Compliance Unit for 2002 is to effectively use its limited resources to meet our goals and objectives. It is critical that the deployment of these resources be smart, strategic, and efficient.

RCRA Accomplishments/Measures of Success for 2001:

The RCRA regulations are designed to be self-implementing in nature with the exception of the formal permitting requirements for any owner or operator of a hazardous waste treatment, storage or disposal facility. The self-implementing process, described in its most basic form, is quite simple. When a business first opens its doors, the RCRA regulations require it to identify every type of solid waste (a legal definition that includes solids, liquids or gases) that could be created from any activity conducted at the facility. Once the facility determines the types of solid wastes generated by its activities, the regulations require it to identify whether any of the "solid wastes" are hazardous under the regulations. A waste could be considered hazardous under the regulations because it is produced from a process that is specifically regulated (e.g., certain types of solvents used for cleaning and degreasing) or because the waste may exhibit any of the four hazardous characteristics: Ignitability, Reactive, Corrosivity or Toxicity. The Toxicity characteristic covers approximately 40 types of metals or organic chemicals that are hazardous because of their ability to leach into the groundwater. One measure of the success of the RCRA program is whether companies are conducting a self-assessment of their wastes and reporting into the system as required.

Regulated Universe Statistics:

The RCRA database for 2001 identifies the following statistics for the six New England states:

1,486 Large Quantity Generators (LQGs).

LQGs are those facilities that generate greater than 2,200 pounds of hazardous waste in a one month period (approximately 5 full 55-gallon containers).

10,580 Small Quantity Generators (SQGs).

SQG's are those facilities that generate more 220 pounds but less than 2,200 pounds of hazardous waste in a one month period (approximately 25 gallons to 274 gallons of hazardous waste per month).

10,985 Conditionally Exempt Small Quantity Generators (CESQG).

CESQG's are those facilities that generate less than 25 gallons of hazardous waste per month.

233 Treatment, Storage and/or Disposal Facilities (TSDFs)

TSDFs are those facilities that require a RCRA permit because of the higher level or waste management activities conducted at these facilities. Many of the 233 facilities are listed because of past disposal practices where the on-site areas are undergoing some type of closure (the formal process used to decommission a unit that had stored hazardous waste) or post-closure care (i.e., groundwater monitoring). Forty-seven facilities currently maintain active permits and either store or treat hazardous waste commercially or use the permits to allow extended storage of hazardous waste at their own sites prior to off-site pickup and removal.

574 Used Oil Facilities.

Used oil facilities are those facilities that generate, market, burn, blend or otherwise manage used oil at their facilities.

946 Transporters.

Transporters collect hazardous waste from and/or transport hazardous waste through the New England states. Most states generally require a transporter to apply for a state permit or certification, in addition to receiving an EPA identification number, in order to transport hazardous waste.

4,962 State Regulated Generators.

While EPA has identified a comprehensive list of substances that it believes are hazardous based on actual damage incidents, the New England states, on their own initiative, have added additional wastes to this basic framework to include other potentially toxic materials that, based on state experience, have also caused or have the potential to cause a serious threat to human health or the environment. For example, many states regulate used antifreeze, water soluble cutting oils and other non-federally regulated wastes as state hazardous wastes. As a result of these more protective state standards, almost 5,000 facilities in New England are required to manage these additional waste streams under the strict standards of RCRA.

Hazardous Waste Notifications:

During 2001, approximately 840 generators submitted Notification of Hazardous Waste Activity forms to EPA or the state program offices. These notifications identify the types of hazardous waste generated and the generator status of each facility (i.e., large, small or conditionally exempt). While the number of facilities that have submitted new notifications is small when compared to a total regulated universe of 23,000 facilities

(less than 4% of the total universe) the volume of hazardous waste represented by these notifications is significant as noted below:

58 new LQGs. Based on a generation rate of 2,200 pounds of hazardous waste per month typically produced by an LQG, 58 facilities represents approximately 127,600 pounds of hazardous waste per year.

341 new SQGs. Based on the generation rate of 220-2,200 pounds of hazardous waste per month, 341 facilities represent approximately 75,020-750,020 pounds of hazardous waste per year.

441 CESQGs. No volume is estimated for this group, but a CESQG generates less than 25 gallons of hazardous waste per month.

During 2001, approximately 207 facilities already in the RCRA system renotified for changes in status due to increases in the amount of hazardous waste generated by these facilities. The following waste statistics for these facilities are noted below:

44 LQGs. Based on a generation rate of 2,200 pounds of hazardous waste per month typically produced by an LQG, 44 facilities represents approximately 96,800 pounds of hazardous waste per year.

72 SQGs. Based on the generation rate of 220-2,200 pounds of hazardous waste per month, 72 facilities represent approximately 15,840-158,400 pounds of hazardous waste per year.

91 CESQGs. No volume is estimated for this group, but a CESQG generates just under 25 gallons per month.

The 840 facilities that submitted initial Notification of Hazardous Waste Activity forms above, account for up to 877,620 pounds of new hazardous wastes generated by New England businesses for 2001. Existing New England businesses that updated their Notification of Hazardous Waste Activity forms accounted for approximately 255,200 pounds of additional hazardous wastes during 2001. The combined total of hazardous waste represented by the new and updated hazardous waste activity notifications is approximately 1,132,820 pounds. Notification and waste identification are the cornerstones of the RCRA self-implementation process. To put the importance of these notifications into perspective, the total number of federal and state RCRA inspections identified in the RCRA database for 2001 was approximately 870. The total number of new notifications received and processed by EPA and the States was 1,024 (includes generators, transporters and other categories that are required to notify). The ability of the RCRA program to bring facilities into the program at a rate that exceeds the level of

inspection is a clear measure of the success for the RCRA program. The results of our compliance inspections represent different measures of success and are discussed below.

INSPECTIONS:

The RCRA Compliance Unit conducted approximately 52 inspections this past fiscal year. The fundamental purpose of RCRA is to ensure that hazardous wastes are properly managed and to also reduce the risks posed by hazardous waste that are being actively generated and stored at the facilities we inspect. Our goal is to ensure that employees, the surrounding community and the environment are protected. Inspections are an important part of the RCRA program. Inspections allow EPA and the states to determine whether businesses are complying with the regulations and employing safe waste management practices. Unlike other EPA programs that require facilities to submit various environmental monitoring data for water and air discharges, the RCRA program is designed to be self-implementing. EPA inspectors cannot determine whether a facility has correctly identified all of its hazardous wastes, appropriately trained its employees, conducted required weekly hazardous waste inspections, etc. without physically inspecting each facility. The inspection process also enables EPA and the states to determine whether trends exist for particular types of industries or sectors that may warrant increased attention by the agency.

Hazardous wastes that are regulated under RCRA have been shown to pose serious risks to human health and the environment. There is a need to ensure that facilities producing such wastes have and maintain proper programs in place to safely manage these chemicals. Some chemicals, when involved in a serious accident at a facility, may require evacuation of the surrounding community up to a mile or more from the facility depending on the types of chemicals involved. In this report, the RCRA Compliance Unit has undertaken a unique approach to identify the demographics within a 1/4 mile (~1,320 feet) of each facility that we have inspected. We believe that this distance represents those local neighborhoods, people and environments that are most likely to be impacted and evacuated in an emergency at a facility that, through our inspection process, we are trying to protect. A key to protecting human health and the environment is to ensure that both adequate field presence and strong enforcement, when necessary, is maintained. EPA and state inspectors are the eyes and ears of the RCRA program. Inspections by federal and state RCRA staff represent the “cop on the beat” for environmental protection. The demographics listed below reflect the diversity of the people that reside in neighborhoods and environmental sensitive areas that we are protecting through our inspection and enforcement activities.

The demographic information used to compile the inspection statistics was taken from the year 2000 U.S. Census data released in December 2001. This data consists of “census block” data, which is a data format used by the U.S. Census Bureau to compile

its information. EPA tabulated the census block data that was identified within a quarter mile radius around each facility. The census block data includes statistics for total population, number of families, number of households, age breakdown, race breakdown (including a sub-statistic on Hispanic and mixed-Hispanic populations), number of children enrolled in the local school system and number of people living below the poverty level.

Demographic Information:

In 2001, the following statistics were determined from hazardous waste inspections conducted by the RCRA Compliance Unit using the Year 2000 U.S. Census data:

Total Population (1/4 mile radius - census block data): 156,731

Families: 39,193

Households: 57,478

Number of Housing Units: 63,056

Age Breakdown:

0-4 years: 10,826

5-9 years: 10,029

10-19 years: 20,244

20-49 years: 74,186

50-64 years: 19,696

65+ years: 21,750

Race Breakdown:

White: 138,985

African-American: 11,641

Native American: 420

Asian/Pacific Islander: 3,021

Other Race: 2,664

Census Subset of Demographic Profile:

Hispanic: 6,511

Non-White + Hispanic: 21,131

School Enrollment: 22,827

Below Poverty Level: 15,230

ENFORCEMENT:

Enforcement is a mechanism that is used to provide an incentive for facilities to comply with requirements that were developed to address serious environmental problems in a manner to prevent the reoccurrence of such problems. The enforcement process may be informal or formal depending upon a number of factors such as the severity of the violations observed, the potential for harm that could result from a violation and the extent of which a facility deviated from the requirement. The goal of any enforcement action is to return a non-complying facility back to compliance, recover any economic benefit that may have been derived during the period of non-compliance and to provide a credible deterrent that encourages future compliance with the rules.

The RCRA Compliance Unit issued thirteen (13) informal Notices of Violation, twenty-one (21) Administrative Penalty Orders (two of which involved multiple facilities for the same respondent), three (3) Consent Agreement and Final Orders, and four (4) Judicial Consent Decrees (one which involved a multiple facility for the same defendant) this past fiscal year.

The total amount of proposed penalties for Administrative Penalty Orders by EPA was \$3,365,493. Final penalty amounts collected from Administrative Consent Agreements and Final Orders totaled \$252,569. The penalties assessed through Judicial Consent Decrees were \$424,000 with approximately \$955,000 in expenditures towards Supplemental Environmental Projects.

Often times, questions are asked about the differences between an initial penalty assessed and the final penalty reached in settlement. Such differences can occur when a respondent provides additional information during a settlement negotiation that was not otherwise provided to an EPA inspector during the time of inspection. Differences can also occur when a facility claims a financial hardship. Under these circumstances, EPA conducts an in-depth review of the facility's financial information and, based upon the results of such an analysis, adjust the assessed penalty to account for a facility's deteriorating financial condition. The ultimate goal is to strike a balance between a strong deterrent to future non-compliance while maintaining the financial viability of the company. EPA wants companies to succeed, but compliance with the regulations must be one of the keys to that success.

ENFORCEMENT MEASUREMENT:

In addition to the traditional enforcement “beans, identified above, this report will also focus on other methods for assessing the value of our enforcement actions to benchmark the effectiveness/benefit of the RCRA enforcement program. Enforcement actions reflect areas of non-compliance that EPA has determined through its inspection process. The hazardous waste regulations are essentially good waste management practices that are designed to prevent hazardous wastes from posing a risk to human health and the environment.

The first measure of success is the demographic breakdown of the neighborhoods located within a 1/4 mile of each facility where the increased risks posed by facilities with RCRA violations warranted some type of enforcement action. The correction of the violations cited through our enforcement actions serves to reduce the potential risks to the neighborhoods where these facilities are located.

The second focus of measurement is an analysis of the types of violations that were detected and corrected through enforcement. In order to understand the nature of the environmental and health benefits achieved, a narrative description of the core RCRA requirements will be discussed to explain the environmental and health reasons behind each rule. This narrative discussion will be followed by a statistical breakdown of the types of violations addressed as a percentage of all our enforcement actions (formal and informal) to demonstrate the inherent environmental and health benefits achieved.

Enforcement Demographics (Formal and Non-Formal Enforcement Actions):

The demographic information used to compile the enforcement statistics was collected using the 2000 Census Bureau data using the same methodology stated in the inspection measurement section.

Total Population(1/4 mile radius - census block data): 179,088

Families: 33,856

Households: 57,717

Number of Housing Units: 63,370

Age Breakdown:

0-4 years: 8,629

5-9 years: 7,863

Age Breakdown (continued):

10-19 years: 34,245
20-49 years: 92,156
50-64 years: 16,884
65+ years: 19,311

Race Breakdown:

White: 154,508
African-American: 10,256
Native American: 427
Asian/Pacific Islander: 10,310
Other Race: 3,587

Census Subset of Demographic Profile:

Hispanic: 8,536
Non-White + Hispanic: 29,204

School Enrollment: 18,007

Below Poverty Level: 21,067

VIOLATION ANALYSIS AND SIGNIFICANCE:

This measure focuses on the types of violations detected and corrected by facilities that were inspected by EPA. The RCRA regulations establish a number of requirements that were developed to address known environmental and human health problems posed by the improper management and disposal of hazardous wastes. In order to determine the benefit of these actions to human health and the environment, it is necessary to provide a brief explanation of the importance of these rules and why they were developed. This explanation will be followed by a statistical breakdown of the types of violations that were addressed by formal and informal enforcement actions by EPA. The significance of the violations cited should become clear when compared with the intent of these rules.

The following section outlines the general areas of non-compliance found by our inspections and an explanation of why these areas are critical to the implementation of the RCRA program.

Waste Identification:

The improper management of hazardous waste was one of the most serious environmental problems that led to the creation of RCRA. EPA has documented hundreds of cases involving damage to human health and the environment resulting from the indiscriminate dumping or other improper management of hazardous waste. The vast majority of these cases involved the pollution of groundwater-the source of drinking water for about half the nation's population. EPA's documentation of these damage incidents also include situations where the improper disposal of hazardous waste has polluted streams, rivers, lakes and other surface waters, killing aquatic life, destroying wildlife, and denuding areas of vegetation. In other cases, the vaporization of volatile organic materials from wastes which were improperly disposed of has been linked to respiratory illnesses, skin diseases (including skin cancer) and elevated levels of toxic materials in the blood and tissues of humans and domestic livestock. In still other cases, the mismanagement of hazardous waste has resulted in fires, explosions or the generation of toxic gases which have killed or seriously injured workers and firefighters.

The proper identification of the hazards posed from wastes generated at a facility represents the cornerstone of the RCRA program. The failure to make a proper determination ultimately results in the same consequences that led to the passage of RCRA in the first place.

During FY01, approximately 59% of EPA's formal and informal enforcement actions initiated involved the failure of a facility to properly determine that hazardous wastes were generated by on-site activities.

Container Management:

Drums and other containers provide an inexpensive means for generators of hazardous wastes to accumulate and store these wastes in a form which will be easy and relatively inexpensive to carry away. All too frequently, generators and others storing hazardous wastes drums have simply put them somewhere out of sight, without any further concern for what would eventually happen to the wastes. EPA has documented many damage incidents involving container storage where the drums eventually weather and corrode, releasing their contents. Dumps of decaying drums have seriously contaminated groundwater; have emitted fumes which have killed vegetation and nauseated and sickened nearby residents, facility operators and enforcement officials; and have burned or exploded, injuring and killing facility personnel and sending clouds of toxic smoke and fumes over adjacent, heavily populated areas, disrupting activities and threatening the health of thousands of people.

The RCRA regulations require nothing more than simple, good housekeeping practices. The practices include the management of containers of hazardous wastes such as the use of containers that are compatible with the types of waste stored, proper marking and

labeling of such containers so that wastes can be easily identified; the closing of containers to minimize the emission of volatile wastes, the protection of ignitable or reactive wastes from sources of ignition or reaction; the prevention of spillage; the reduction to potential for mixing of incompatible wastes; and the reduction of direct contact of facility personnel with the waste.

Containers must also be properly marked and labeled to identify their contents. These markings allow facility personnel or others, such as emergency responders, to quickly and accurately identify the particular hazards posed by such waste and to adequately protect themselves, co-workers and the immediate public in the event of an emergency involving the containers.

During FY01, approximately 63% of all formal and informal enforcement actions taken by EPA involved some form of improper container management.

Tank Management:

Tank storage is often used with liquid hazardous wastes that are generated in such large quantities that the use of 55-gallon containers is not a practical option. Any facility that uses tanks to store hazardous waste must ensure that the stringent testing and design standards for these tanks be met. Facilities that store hazardous waste in tanks must also have secondary containment systems that are compatible with the types of waste stored and be able to detect, contain and ultimately prevent the escape of hazardous waste in the event of emergency. Proper tank design not only ensures the integrity of the tank, but also includes the associated piping, pumps, valves and other devices that make up the tank system. An incident involving a tank failure would potentially involve hundreds, if not thousands, of gallons of hazardous liquids. Compliance with the tank regulations is critical to ensuring that such wastes are properly and safely managed on-site.

During FY01, approximately 10% of the total enforcement cases involved tank management. The violations at these facilities were significant and collectively involved thousands of gallons of hazardous waste. EPA used formal enforcement at each of the facilities with these violations.

Inspections:

Part of a good waste management program is a regular inspection program for tanks and containers used to store hazardous wastes. RCRA regulations require a daily inspection program for a tank system since a tank failure typically results in the loss of the entire amount of waste in storage. Containers, on the other hand, are required to be inspected

on a weekly basis. The reason that containers inspections are conducted on a weekly basis is because of the unlikelihood that each and every container would fail at the same instant. The key component for a tank or container inspection program is the establishment of an inspection schedule and checklist that identifies those items that must be inspected on a regular basis. Regular inspections help to ensure that hazardous wastes are safely managed on-site. Verifying the structural integrity of tanks and the condition of containers is part of this inspection program. The program also includes protocols that ensure that these units are properly marked and labeled and closed to prevent releases to the environment. A good inspection program is critical to ensuring that hazardous wastes are not released to the environment. Inspections act as a preventative maintenance program. As with your own personal vehicle, the failure to inspect critical components on a regular basis can lead to catastrophic consequences that could have been easily corrected, often at a reduced cost, and avoided.

During FY01, approximately 63% of the formal and informal enforcement actions involved inspection violations.

Contingency Plans/Preparedness and Prevention:

All LQGs (and most federal SQGs) are required to prepare plans that identify the types of hazardous wastes that are expected to be stored at a particular facility and to further identify the protocols and procedures to be followed in the event of a spill, fire or explosion. RCRA regulations require facilities to submit these plans to the local police and fire departments, hospital and other organizations that may be involved in responding to an emergency involving hazardous wastes generated at the facility. The primary purpose of these plans is to ensure that each facility conducts a critical analysis of the types of hazards posed by wastes generated at the facility and to identify the appropriate responses to any waste emergency involving such wastes. Another purpose of these plans is to ensure that all appropriate agencies and departments are aware of the types of hazards posed from waste generated at a facility. The plans ensure that the company and the local officials who would respond to an emergency incident enter into a written agreement. This agreement should describe how an emergency at the facility would be handled with a focus on protecting the lives of those individuals designated to respond to the plan and to describe how these response activities will minimize the impacts to the environment (e.g., collection of contaminated water used to contain a potential fire, etc.). Often times, this type of violation has been referred to as a "paperwork violation by a facility that has been cited for failing to comply with this requirement. But, the contingency plan is one of the most important planning tools used to respond to an emergency event and is designed to prevent the loss of life and minimize environmental impacts that may be posed by a spill, fire or explosion.

The RCRA regulations for Preparedness/Prevention relate to the Contingency Plan and requires a facility to maintain adequate equipment to handle an emergency event involving hazardous wastes. Such equipment typically include personal safety equipment, spill clean up kits, proper fire extinguishers, adequate water pressure and volume, alarms, etc.

During FY01, approximately 54% of the formal and informal enforcement actions involved preparedness and prevention violations and approximately 68% of these actions involved contingency plan violations.

Training Plan:

All LQG_s (and most federal SQG_s) are required to establish and implement a hazardous waste training plan that provides for initial and annual training of all employees who handle hazardous waste. The plans must contain outlines of the job responsibilities and types of training required for each employee required to manage hazardous waste as part of his/her normal job duties. Training may include additional instruction on the content of the hazardous waste contingency plan for those employees required to implement the contingency plan or handle wastes at the designated waste storage area.

Many of the violations observed by EPA and state RCRA inspectors often result from a failure in training. Facilities that neither perform routine inspections nor properly mark, label or seal containers used to store hazardous waste demonstrate a fundamental lack of training or understanding of the basic requirements necessary to operate a safe and effective hazardous waste management program. The risks to human health and the environment from the failure to properly train employees pose a substantial harm to employees, the surrounding community and emergency responders. Emergency responders at the facility cannot adequately protect themselves or the surrounding community when they have not received proper training. EPA has witnessed instances where the lack of training or improper training where the cleanup of the initial release resulted in a secondary release into the environment that caused an extensive fish kill and ultimately posed a greater hazard than the initial spill. Effective training is one of the most important aspects of a good RCRA program and is critical to ensuring the safe and effective handling of hazardous waste.

During FY01, approximately 63% of the formal and informal enforcement actions involved training plan violations.

Manifests:

Hazardous waste manifests provide a "cradle to grave" tracking of the hazardous waste. Manifests allow EPA and the States to know the types of wastes generated at a facility,

track the amount waste shipped off-site by the facility and confirm the receipt of these wastes by these off-site facilities. More importantly, the manifests allow EPA to determine whether all wastes observed and identified by an inspection have been properly identified and disposed. The failure to maintain manifests is more than a “paperwork violation. The hazardous waste manifest is a critical link in the waste management system. The failure to properly use a hazardous waste manifest is a significant violation since it prevents both EPA and the facility from confirming that hazardous wastes were properly identified, shipped off-site and received by an approved facility. The failure to properly use a hazardous waste manifest breaks the cradle-to-grave scheme that is central to the RCRA program.

During FY01, approximately 44% of the formal and informal enforcement involved manifest violations.

Land Disposal Restriction Regulations:

Almost all hazardous wastes are, by regulation, banned from direct land filling. This regulatory ban has led to the term “land ban” which is commonly used to describe this comprehensive set of regulations. The land ban rules require the generator of land banned hazardous waste to identify the correct waste treatment standard that must be met in order to render the waste less hazardous and suitable for land disposal. This regulation is designed to reduce the environmental risk posed by the land disposal of untreated hazardous waste. A generator’s ability to correctly identify whether a waste is restricted from land disposal and provide proper notice on the appropriate treatment standards directly impacts the ability of a hazardous waste treatment facility to ensure that hazardous waste is properly treated prior to final disposal. The intent of this rule is to ensure that hazardous wastes are treated to a concentration level that is considered appropriate for final land disposal at a permitted RCRA facility.

During FY01, approximately 41% of the formal and informal enforcement actions involved Land Ban violations.

SIGNIFICANT CASE HIGHLIGHTS:

Brown University:

Brown is a private university which is located on the east side of Providence, Rhode Island, only blocks from the Seekonk River and Providence Harbor. The main campus occupies approximately 143 acres and has 228 buildings. Brown has undergraduate, graduate and doctoral activities which include medical and scientific instruction and research, and arts programs. The hazardous waste generated on-site includes those resulting from laboratory work, painting or art operations, photographic services and

maintenance.

EPA inspected Brown as part of its College and University Initiative and also because of Brown's location in Providence, Rhode Island. Providence is one of the cities identified in the Region's Urban Environmental Initiative. EPA's complaint alleged improper hazardous waste container management, failure to have hazardous waste training records, failure to train employees, failure to have an adequate hazardous waste contingency plan for response to hazardous waste emergencies, and failure to make proper waste determinations for the hazardous waste shipped off-site.

At a research and teaching institution such as Brown, many of the people who come in contact with hazardous waste are students or professors. Considering this fact, it is critical that Brown's environmental program be able to adequately prepare, protect and train an ever-changing population. Brown's alleged hazardous waste violations represent deficiencies which not only pose potential threat to human health and the environment, but also may inadequately prepare future professionals of their environmental responsibilities.

EPA issued a combined RCRA and CWA administrative complaint to Brown requiring compliance with waste management regulations, submission of emergency response plans and a proposed penalty of \$ 367,154 for the RCRA portion of this complaint. EPA and Brown reached settlement in this case during early FY02. As part of the settlement agreement, Brown has chosen to perform a Supplemental Environmental Project ("SEP") valued at \$285,000, and pay \$79,858 in cash penalty (\$45,000 for Clean Water Act and \$34,858 for RCRA). Brown's SEP will reduce pollution and provide other environmental benefits, both at Brown and at four Providence public high schools.

Specifically, under the SEP, Brown will convert chemistry laboratories from traditional experiments to "micro scale" chemistry experiments, in which much smaller quantities of chemicals are used to train students. In addition to providing a "less-is-better" mind set for the students, micro scaling leads to fewer (and often less hazardous) chemicals being purchased initially and fewer wastes remaining after a class is completed.

Brown will implement purchasing and inventory tracking systems to have better control over the number of chemicals used and hazardous wastes stored. A centralized inventory system prevents over-purchasing of chemicals, highlights the appropriate disposal time frames, and may identify inappropriate storage situations. For the high schools, this system will make sustainable the benefits gained in the hazardous waste 'clean outs' discussed below.

Brown has agreed to establish a fund for the purpose of performing a one-time 'clean out' of at least four high schools. The clean out will dispose of chemicals or hazardous wastes currently at the schools that could present an environmental risk. Brown has also agreed to use its best efforts to secure additional foundation funding to expand the clean out program beyond the four high schools. Brown has already conducted on-site inventory reviews of the high schools.

Brown will also perform environmental education activities, both for Brown and the high schools in the context of the SEPs described above. The direct environmental benefits of this settlement includes the pollution prevented in the micro scaling and inventory control aspects of the SEP, the reduction in exposure of high school students and staff to environmental threats through use of the hazardous waste clean outs, and the benefit of a substantial SPCC penalty to the Oil Spill Liability Trust Fund. Other less direct, yet still significant benefits include the value of environmental education at Brown and the high schools, and the deterrence value that this action has had on the university community.

The reduction of the current stockpile of chemicals to the quantities actually needed for experiments, managing the remaining inventory of chemicals properly, training teachers on less hazardous alternatives, and providing the equipment to enable the schools to conduct micro scale experiments are all positive steps that lead to a sustainable approach to smarter chemical management and use within schools.

Nu Chrome Plating:

Nu Chrome Plating owns and operates an electroplating and metal finishing company located in Fall River, Massachusetts. The facility generates sludge from the evaporation of chromium contaminated electroplating wastewater ("evaporator sludge") and spent (no longer usable) cyanide plating baths. On March 30, 1998, EPA inspectors conducted a routine RCRA Compliance Evaluation Inspection at the Facility and alleged that Nu Chrome was violating RCRA and its regulations by improperly storing, labeling and managing its hazardous waste at the Facility. Specifically, EPA's inspectors found that Nu Chrome violated state and federal regulations by storing hazardous wastes on-site for more than 180 days without a permit.

At the time of the inspection, six containers of hazardous waste stored for a period exceeding 180 days without a permit, including at least five 55-gallon drums that had been stored for over five years. These five drums were rusted and surrounded by a white crystallized residue at the base of each drum. Other alleged RCRA violations identified were: failure to inspect hazardous waste storage areas; failure to keep hazardous waste containers closed during storage; failure to ensure that containers holding hazardous waste are in good condition; failure to label or mark clearly each container of hazardous

waste with required information; failure to mark containers of hazardous waste with the beginning date of accumulation; and failure to maintain adequate aisle space in storage areas.

Nu Chrome will pay a civil penalty in the amount of \$25,000 and will spend \$74,000 on a SEP. The proposed SEP involves the modification of the wastewater treatment system modification at NuChrome which includes the shut-down and dismantling of the existing System and the design, purchase, installation and start-up of a new wastewater treatment system designed to significantly reduce the amount of hazardous wastes generated during the plating process. Upon completion of the new system, Nu Chrome will hire an independent contractor to conduct an environmental audit to evaluate Nu Chrome's compliance with applicable State and Federal wastewater and hazardous waste management regulations. The audit will include a reassessment of Nu Chrome's generator status based upon the amount of hazardous waste it generates after the new system is installed and operating. Nu Chrome will spend not less than \$74,000 to conduct the SEP.

Nu Chrome's new system will be designed to significantly reduce hazardous wastes generated during the electroplating process at the Facility. In addition, this action and settlement has resulted in Nu Chrome's being brought into compliance with RCRA regulations.

Massachusetts Institute of Technology (MIT):

MIT is located on the banks of the Charles River in Cambridge, MA. MIT generates hazardous waste from its many laboratories and research facilities, subjecting it to RCRA's hazardous waste requirements for large quantity generators. MIT also has its own utility plant and incinerators, which subject it to Clean Air Act requirements. In addition, MIT stores large amounts of oil on campus, subjecting it to the Clean Water Act's oil pollution prevention requirements.

On March 1, 1998, as part of the Charles River watershed enforcement initiative, EPA sent a letter warning facilities located within the Charles River Watershed that EPA would conduct compliance inspections. MIT is one of the facilities located within this area. During the week of May 19, 1998, EPA conducted a multi-media inspection at MIT to evaluate compliance with air, water and waste regulations. While the inspectors did not find any alarming conditions, they found numerous violations that indicated inadequate housekeeping practices and a need for MIT to improve its environmental management system.

The enforcement action required MIT to (a) come into compliance, (b) hire personnel to better manage environmental compliance, (c) start working on environmental

management system improvements, and (d) initiate many “beyond compliance activities.

The settlement amount is \$555,000. Of that amount, \$400,000 is attributed to RCRA, \$135,650 to the CAA, and \$19,350 to the CWA. MIT has paid \$150,000 of the \$555,000 settlement amount as a civil penalty. The remaining \$405,000 will go toward three Supplemental Environmental Projects (“SEPs”), described below. In addition to the penalty and the SEPs, MIT will make environmental management system (“EMS”) improvements, committing to many improvements that go beyond compliance such as developing a new inventory system that will allow MIT to significantly reduce the amount of chemicals it purchases and disposes of as hazardous waste. MIT’s EMS design will serve as a model for large, decentralized research institutions.

The three SEPs include the following:

1) *Development of an innovative storm water management system for MIT’s new Stata Center*: MIT is constructing the Stata Center, a major research facility, in an area of Cambridge that has severe flooding problems. Storm water from this area flows into combined drainage/sanitary sewers that discharge to the Charles River during heavy rain. MIT will implement an innovative storm water control and treatment system for this building and the surrounding area. Runoff from the area will drain to a “biofiltration swale which utilizes vegetation to filter the runoff, prior to entering an underground galley chamber of plastic pipes. The outflow from the galley chamber will be discharged back to the Charles River at a controlled and reduced rate of flow. The system has been designed to reduce Total Suspended Solids (i.e., sand and grit) by 80% and to reduce peak storm runoff by 50% or more compared to pre-development levels. This SEP will help improve the health of the Charles River, and thus supports EPA’s goal to make the Charles River fishable and swimmable by 2005. Also, since the design of the Stata Center by Frank Gehry, a well-respected architect, should promote the cause of making buildings more environmentally sustainable.

2) *“Virtual Campus” compliance assistance tool*: EPA has found widespread compliance problems at universities throughout New England. MIT, as part of an SEP, will develop a “virtual campus compliance assistance tool to help universities and colleges all over the United States comply with environmental laws. Once developed, the “virtual campus will be posted on the Campus Consortium for Environmental Excellence web site, and EPA may choose to create a link to the “virtual campus from our own web site. The “virtual campus will address air, water and waste compliance in eight featured areas:

a typical laboratory
auto and grounds maintenance department

- a generic power plant
- a hazardous waste storage area
- a graphic arts department
- drains and sewers
- a residence hall
- a cafeteria.

The home web page for this project will display a campus map with the above-listed areas of the university campus illustrated. Clicking on an area (such as the power plant) will lead to a second-level page, which will contain an illustration. Clicking on a second-level page will lead to a text page with technical and regulatory content, photos, diagrams, and sometimes a video. The site will allow users to obtain compliance information through a variety of means such as topic area or regulatory program, through an alphabetical index, through a site map, and possibly also a search engine. If there is money left over, MIT will develop other modules, such as a ninth featured area a campus health center, state law distinctions for other New England states, additional pollution prevention information, and information on how to implement an environmental management system. This project will cost \$235,000.

3) Urban Focus: MIT Cambridge Schools Collaboration on Education for the Environment: MIT will collaborate with the Cambridge public school system to develop and implement three different environmental projects over the course of one or two academic years. The projects will focus on water quality, pollution prevention, remediation, or energy use and will have an urban theme. Each of the projects must include a field project designed to help measure, understand and improve the urban environment and may also include curricular enhancements, laboratory materials, case studies, or research experiences for public school students. The projects will be chosen from a list that will be pre-approved by EPA. Examples of projects include (a) water quality testing on the Charles River and Alewife Brook before and after rain events to evaluate the effects of storm water on water quality, (b) invasive species survey including their removal from the Alewife Brook, (c) a brownfield/soil remediation project in the community (e.g., assessing a local playground for lead content in soils and playground equipment), (d) developing a standard chemical pollution prevention protocol for high schools and piloting it in the Cambridge school system, and (e) developing and piloting a "healthy building" audit package focused on indoor air quality at schools. The Cambridge teachers and their students will share their experiences and work product with the local community, other science teachers in the region, and other interested schools around the country.

MIT reports that the Cambridge public school students who will benefit from this SEP are 57% minority and all live in an urban environment. Although the SEP will cover only one year of the program, MIT hopes to offer it for many years. This SEP supports

EPA's commitment to children's health, and it also supports the Region's effort to make a difference in the communities that it serves. This project will cost MIT \$139,000.

United Oil:

United Oil is a large commercial waste treatment and storage facility located in Meriden, Connecticut. EPA initiated an enforcement action for alleged violations of United's hazardous waste facility permit and violation of other regulatory requirements. Some of the more significant violations include: the failure to adequately sample and analyze hazardous waste accepted by the facility for treatment, storage or disposal; failure to conduct representative sampling of waste streams for waste verification; storage of containers of hazardous waste and other materials outside permitted container storage areas and in excess of permitted quantities; failure to keep containers of hazardous waste closed; failure to maintain up-to-date inventory lists of all wastes managed at the facility; failure to maintain adequate documentation of inspections; and failure to comply with regulations related to organic air emissions from equipment at the facility, including testing, design, maintenance, monitoring, and inspection requirements.

As a permitted treatment and storage facility, United's compliance with hazardous waste management regulations is particularly important. The facility's alleged failure to adequately sample and analyze incoming hazardous waste and alleged failure to properly verify the identification of that waste means that hazardous waste may have been improperly treated or disposed by the facility. United's alleged failure to install and/or operate and maintain equipment required to capture the volatile organic air emissions from tank systems means that there was a likelihood of increased levels of tropospheric ozone and air toxics, leading to increased risk to human health and the environment. The proposed penalty for this enforcement action is \$1,221,241.

University of Rhode Island:

URI's Kingston campus is home to approximately 15,500 students and employs at least 1000 staff members. The campus consists of classrooms, libraries, research centers, laboratories, dormitories, lecture halls, and social, cultural and recreational areas. It is an urban campus with private buildings separated by public streets and sidewalks.

The University is involved in extensive research activities in a variety of areas of study. A large maintenance department supports all the University's activities. Solid and hazardous wastes, as defined by RCRA, are generated from numerous sources throughout the campus, including: automotive maintenance; building and grounds maintenance; research and laboratory activities; art studios; and shop operations. The campus also operates a number of high capacity boilers for heat and hot water, which require permitting under the CAA. These boilers are fueled by above and below-ground

oil storage tanks, which are subject to the spill prevention requirements (SPCC) of the CWA. URI also stored electrical transformers contaminated with polychloryl biphenyls (PCBs) and regulated by the Toxic Substances Control Act (TSA).

EPA and the Rhode Island's Department of Environmental Management conducted a compliance inspection at URI on June 10, 1997. Based on this inspection and EPA's review of the information submitted in response to EPA's information requests, some of the more significant RCRA violations identified and alleged in EPA's enforcement action included: failure to provide proper training for employees managing hazardous waste; failure to have a complete contingency plan; failure to conduct weekly inspections of hazardous waste containers; failure to make proper hazardous waste determinations; operating a disposal facility without a permit; failure to label or mark containers of hazardous waste; failure to keep containers of hazardous waste closed; failure to separate incompatible hazardous waste and failure to provide an adequate containment system for container storage areas.

Under the terms of the settlement, URI will pay a cash penalty of \$250,000 and will perform two Supplemental Environmental Projects (SEPs) whose cost totals an additional \$550,000. At least \$300,000 of this money will be spent on relocating a hazardous waste storage area for the university away from the sole source aquifer where this storage area it is currently located. The sole source aquifer is used to supply the area with drinking water. The relocation of the hazardous waste storage facility away from the sole source aquifer not only protect the aquifer from potential environmental threats but will also eliminate the need for URI to transport its hazardous waste on public roads, through the heavily populated campus areas, including the athletic complex to reduce the potential human health threat. The remaining \$250,000 will be spent to develop and install advanced septic sewer treatment systems in Wickford Village, RI. This area is not served by a sewer system, and its population density and historic homes make it unlikely that a conventional system ever will be installed. The poor quality of the inner harbor waters fronted by Wickford threaten critical eel grass beds (critical habitat as defined by EPA and the Rhode Island Department of Environmental Management). The protection of this habitat is currently supported by EPA and state grants. New technologies will decrease or eliminate coliform bacteria, protect eelgrass critical to supporting sport and commercial fisheries; restore the inner harbor to a fishable and swimmable state; and protect the underlying drinking water aquifer.

In addition to the expenditures identified above, URI will submit to EPA, for its review and approval, a proposal for a facility-wide environmental compliance audit. The audit will assess URI's compliance at the Kingston campus with all applicable federal, state, and local environmental rules and regulations and achieve full compliance with those requirements.

National Semiconductor Corporation (NSC):

NSC operates a facility in South Portland, Maine that manufactures of eight-inch silicon wafers that contain metal oxide semiconductor (CMOS) chips. The facility is a large quantity generator of hazardous waste and employs about 1400 employees at its South Portland location. The alleged violations include: inadequate training for handlers of hazardous waste; an incomplete hazardous waste training plan; failure to obtain a written assessment of a new hazardous waste storage tank from a certified professional engineer; failure to have the tank inspected at the time of installation; inadequate secondary containment; failure to conduct inspections; failure to properly label hazardous waste containers; inadequate aisle space; and an incomplete contingency plan.

At the time of the inspection, no employees were trained in the physical, day-to-day management of hazardous waste. The alleged failure of NSC to provide such training creates a substantial potential for mismanagement of hazardous waste, which could result in the release or improper disposal of hazardous waste, thereby threatening human health and the environment. NSC's alleged failure to assess the hazardous waste tank system's integrity posed a substantial potential for harm to human health and the environment. NSC uses the tank system to store 90% of the hazardous wastes generated at the facility. Without a comprehensive and independent evaluation of the system before installation by a certified professional engineer, as well as an inspection following installation, NSC could not be certain that the tank system is adequately designed to store NSC's hazardous waste solvents. EPA proposed a monetary penalty of \$302,990.

A-1 Precious Metal Plating, Inc.(A-1):

A-1 is a metal plating facility located in Woburn, Massachusetts that performed nickel, zinc, silver, aluminum and chrome electroplating. The hazardous wastes generated by A-1 included metal hydroxide sludge, plating tank sludge and acidic, cyanide, silver and chrome bearing wastewater. There are industrial and residential areas, including two daycare centers, within one-half mile of the Site.

On November 13, 1998, EPA observed multiple RCRA violations and issued an administrative order to A-1 in 1999. A-1 was unable to pay a penalty, and came into compliance only after several months. On August 17, 2000, EPA became aware that the property had been seized for nonpayment of rent and conducted a site investigation at A-1 on August 30, 2000. At that time, EPA observed approximately 100 55-gallon and 600 small containers, including one container observed to be leaking. Incompatible materials were stored together. The chemicals are highly toxic and reactive. Cyanide was present in the air and the mixing of the chemicals stored on site could had the potential to cause a fire and the release of toxic fumes.

As a result of the August 30, 2000 inspection, EPA issued a Removal Order pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and required the site owner to secure the facility from trespassers, identify all chemicals stored in drums, tanks and containers on-site, and removed all drums and containers and their contents. Site cleanup of the site is still on-going as of January 2002.

Rhode Island Technical Plating (RITP):

RITP is an electroplating facility located in Providence, Rhode Island that used nickel, copper and decorative chrome. On October 31, 1997, EPA Region I personnel conducted a RCRA Compliance Evaluation at the RITP facility. Wastes observed by the EPA inspectors included numerous unlabeled containers identified by RITP as holding waste acids, waste cyanide sludge, chrome-contaminated floor sweepings, spent nickel and cyanide filters, and waste trichloroethylene. Some containers were rusty and perforated. Many of these wastes later proved to be incompatible. A release of these incompatible wastes could have caused an explosion, the formation of noxious gases, and contamination of soils and groundwater. Inspectors found evidence of illegal treatment (through evaporation to the air) of waste solvents and potential chromium contamination of soils surrounding the facility and associated groundwater.

During FY01, RITP was forced into receivership by its creditors. A reinspection of the facility by EPA found numerous containers stored at the facility that were in poor condition. These containers stored incompatible wastes and materials and, as a result, the RCRA Compliance Unit requested the assistance of EPA's Removal Program. An On-Scene Coordinator (OSC) from the Removal Program assessed the safety of the closed facility and observed numerous containers and open vats full of chemicals that were in poor condition and also observed that the facility's roof had deteriorated to the point that the facility no longer provided protection to the abandoned chemicals from precipitation. As a result of the OSC's assessment, EPA issued a Removal Order pursuant to Section 106(a) of CERCLA and required the site owner to secure the facility from trespassers, identify chemicals in drums, tanks and containers on-site, and remove drums and containers and their contents. Cleanup of the site is still on-going as of January 2002.

Arkwright:

Arkwright is a manufacturer of photographic film and paper, located in Fiskeville, Rhode Island. EPA's inspection of this facility, found two tanks and related equipment containing hazardous wastes to be sources of uncontrolled releases of volatile organic chemicals. There were visible openings at the tops of the tanks through which the vapors could escape, and EPA monitoring showed significant levels of the volatile

substances in the air. Subpart BB and Subpart CC of RCRA require that such equipment and tanks be closed to prevent the release of volatile chemicals. The rules also require monitoring, leak detection and repair, and relevant record keeping. None of these activities had occurred at the facility.

The emissions of the volatile and toxic organic chemicals have been occurring continuously since the date that the requirements took effect on December 6, 1996. Controlling the volatile organic emissions is necessary because they contribute to the formation of ground level ozone, which is harmful to human health and the environment, and because some of the chemicals are toxic in themselves. The emitted chemicals are known to exhibit various forms of toxicity, including toxicity to the nervous system, liver, kidneys, reproductive systems, and aquatic life. The failure to comply with the requirements is harmful to the regulatory program. Failing to keep records to enable verification of the rules' self-implementing provisions frustrates the purpose and intent of the law. EPA proposed a penalty of \$376,483.

Metals Recycling, LLC:

Metals Recycling, LLC, of Johnston, Rhode Island processes, separates, sorts and recycles scrap metal at its 18-acre site. It handles 200 tons of light iron a day consisting mainly of old cars and appliances. The operation requires the company to separate non-metallic material from junked cars it processes. The alleged violations involve non-metallic material, known as auto shredder residue, or "ASR. Samples collected and analyzed by Metals Recycling from August through October of 1999 found levels of lead over the EPA hazardous waste threshold of 5 milligrams per liter (mg/l). Metals Recycling did not have a permit to store hazardous waste at its plant. Approximately 10,000-12,000 tons of ASR was improperly stored in piles at Metals Recycling on an asphalt base. EPA required Metals Recycling to reduce the lead contamination in the improperly stored ASR piles by treating the ASR on-site using portland cement. The use of portland cement is an effective treatment technology that will bind the lead and reduce the chance it will leach into the ground and become a source of contamination. EPA's enforcement action proposed a penalty of \$200,000. Metals Recycling has successfully completed the stabilization of the lead contained in the ASR piles.

FY01 RCRA COMPLIANCE UNIT (MANAGEMENT & STAFF)

Kenneth Rota, Chief
Tammy Williams, Secretary
Lisa Papetti, Senior Enforcement Coordinator
James Gaffey, Chemical Engineer
Richard Piligian, Environmental Scientist
Drew Meyer, Environmental Scientist
Mel Cheeks, Environmental Engineer
Tania Mercado, Environmental Engineer
Christine Tilly, Environmental Scientist
Virginia Lombardo, Environmental Engineer
Rhona Julien, Environmental Engineer