Testimony of

# Mr. Michael J. Penders

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Introduction

Mr. Chairman, thank you for this opportunity to testify on the subject of environmental law enforcement at this critical time in considering the accountability of individuals and corporations under the law, and reassessing the federal government's role in fostering environmental protection and security. My name is Michael Penders, and I am the President of Environmental Protection International, a firm which conducts environmental investigations and audits, vulnerability assessments, designs environmental management and security systems, and provides training in the implementation and enforcement of environmental laws. Previously, I served as Director of Legal Counsel at EPA's Office of Criminal Enforcement, Forensics, and Training. My duties while at EPA included Chairing the Voluntary Disclosure Board, which considered the application of EPA's Audit Policy to criminal violations disclosed to the government, and Chairing the G8 Nations' law enforcement project to investigate international environmental crime.

The deterrent of criminal sanctions, imposed in practice, is well known to this committee. The Senate recently voted unanimously to enhance the criminal sanctions for corporate fraud in a Bill signed into law by the President today. I don't think it was mere coincidence that the stock market turned around the same day that Adelphia officials were led away in handcuffs.

In recent years, standards for auditing, reporting, and managing environmental compliance, risk, and liabilities have been the subject to similar concerns, including how these liabilities are reported to the SEC. Just last week, Assistant Attorney General Sansonetti announced that Tanknology, the nation's largest tester of underground storage tanks, pled guilty to ten felony counts of falsifying test results, in several different states. It is critical for the integrity of the environmental laws that the government's capacity to detect and investigate false reporting is credible and national in scope, and proceed in full partnership with state and local officials.

Criminal enforcement has had a powerful impact in achieving compliance with environmental laws over the last twenty years in the United States. The real prospect of criminal prosecution of individuals and corporations has been a principal driver of safer and more secure environmental management practices, including the current generation of environmental management systems which reduce or prevent pollution at the source. As this committee considers changes to the criminal law, and other committees consider 'next generation' environmental legislation, it is critical to preserve direct accountability for individuals and entities that 'knowingly' violate environmental laws, particularly where there is risk of harm and economic benefit to violators. This requires the capacity to detect violations, investigate complex technical requirements, and enforce these laws fairly and consistently. Otherwise, those who pay costs associated with environmental compliance will be put at a competitive disadvantage to violators.

At the same time, in order for the criminal enforcement deterrent to have maximum impact, it must be made as clear as possible what an individual or organization must do to avoid criminal liability after discovering a compliance issue, other environmental risk, or historical contamination through a voluntary audit, assessment, or other means. EPA's Audit Policy, amended in 1999, DoJ's Holder Memorandum On Charging Corporations, the U.S. Sentencing Guidelines, and voluntary programs and laws on the state and federal level such as EPA's Performance track have provided guidance in this area. The success of many of these voluntary programs depends, however, on the expectation of fair enforcement for those who violate.

Highlights of the United States Experience in Building a National Enforcement and Compliance Program

In the United States, before there was a national system of environmental laws and enforcement, hazardous waste was illegally dumped and shipped from those states with stringent laws and strong enforcement to those regions and states where it was lacking. As a result, the citizens and communities in those latter states were put at greater risk. Some polluters, compelled by economic incentives, transported waste to these states or moved facilities there in order to avoid costs associated with sound environmental practices. All too often these savings were achieved at the expense of the environment.

Beginning in the 1970s, the United States decided as a nation that these practices were unacceptable, and that a minimum level of environmental protection should apply across the land. The development of national environmental laws followed, in large part, in order to prevent polluters from taking advantage of inconsistency in laws and enforcement practices between the states.

After national laws were enacted, there was a period of education, compliance assistance, and then almost exclusive use of administrative and civil sanctions, mostly monetary fines, in the initial enforcement efforts against pollution to the air, land, or water that was determined to be illegal. It was observed during this period that companies that faced only monetary penalties and a small chance of being detected in violation, could put off coming into compliance and if they were ever caught and fined, they could pass the cost of any penalty on to consumers, in the form of higher prices.

Beginning in the 1980s, the United States began a serious national effort at criminal enforcement and other sanctions that set the stage for widespread compliance efforts on behalf of industry. It was not mere coincidence that shortly after the U.S. enacted national laws that severely punished violators of environmental requirements (including imprisonment for knowing violations by corporate officials or other persons) and developed the capacity for effective enforcement, that many industrial concerns began to take their environmental obligations very seriously. Corporations began to improve their environmental performance and deploy systematic approaches to monitor and assure compliance with environmental requirements.

There is strong empirical evidence for the correlation between strong laws, enforcement, and substantial investment in environmental compliance. For example, there was a survey of corporate officials in the United States in 1993 as to what their motivation was for adopting

environmental management systems to ensure the sound and legal disposal of their industrial wastes. The number one response was concern with being targeted by EPA for enforcement.

This is really common sense. Ask yourself a question: if you are a manager of a business and face only a small chance of being caught violating an environmental law and then only a small fine if detected, how much would you invest to improve the environmental performance of your company and how soon would you begin to spend the money?

I am not now addressing organized crime. Unfortunately, there will always be those who will deliberately violate any law to make a profit and we must do our best to put them out of business. I am referring to the average business confronted with a choice to spend a significant amount of money to achieve environmental compliance and ensure the sound disposal of industrial wastes, or to look for ways to put off that investment or dispose of it cheaply by illegal dumping.

Companies may well delay investments to comply with environmental standards if there is a perception that they would face only small consequences if they were ever to face a government action against them for failure to comply with law. Moreover, they may be competing against businesses that confront the same incentives, and which may not be as inclined to comply with the law, further reducing a company's incentive to spend on compliance, absent an expectation of consistent and fair enforcement of the law.

I'll cite seven developments in the United States which were among those that led to long term investment in environmental compliance becoming a rational choice for corporate managers:

(1) When the national environmental laws were reauthorized in the U.S. in the 1980s, Congress changed what had been misdemeanor offenses for certain violations and established felony crimes for knowing violations, providing for up to five years imprisonment for each such violation. In addition to greater punishment and therefore greater deterrence, this also improved the prospects for environmental enforcement in the criminal justice institutions. Prosecutors became more interested and devoted more resources to felony prosecutions than misdemeanors and judges took them more seriously in scheduling court time and other judicial resources. Congress also established "Knowing Endangerment" offences for endangering another person by knowingly violating certain environmental laws, and provided for up to 15 years of imprisonment for such offences.

(2) Sentencing Guidelines were promulgated which limited the discretion of courts in sentencing environmental defendants, and made it clear that even for a first offense, if there was a knowing violation of most federal environmental laws, violators would be imprisoned.

(3) Capacity Building for Environmental Enforcement. In 1990, Congress passed the Pollution Prosecution Act, mandating EPA to deploy 200 specially trained criminal investigators of environmental law with full law enforcement powers to supplement state and local efforts to enforce environmental laws. Congress also created the National Enforcement Training Institute dedicated to training state, local, and federal law enforcement personnel in the safe and effective enforcement of environmental laws.

(4) Listing and Debarment. Federal law provided that corporations that are convicted of certain environmental offenses are prohibited from government contracts and they may be debarred for other environmental violations as well.

(5) Superfund Liability. The law known as Superfund in the U.S. with its joint and several civil liability for cleaning up toxic waste sites provided economic incentives for minimizing pollution and disposing of waste soundly in the first place. It came to establish that any business that dumped a hazardous waste in what became a superfund site could be financially liable for cleaning up that entire site.

(6) Financial liability. As the liability imposed by the environmental laws, such as Superfund, became established, financial institutions, such as banks and insurers, came to insist upon environmental assessments and cleanups before real estate transactions or insurance policies could be entered into. Accordingly, potential environmental liabilities became a factor for investment purposes as well.

(7) Toxic Release Inventory and the Community Right to Know. Federal law mandated that polluters must publish a list of the pollutants and quantities they release annually and ensured the public of information about industrial facilities.

Taken together, these developments and others provided the legal framework and economic incentives for managing waste and other dangerous substances in safer and more environmentally sound methods. This system of regulation operates to internalize the long term costs of these pollutants and creates incentives for reducing waste and for preventing pollution in the first place. In the United States, with credible enforcement as a basis, these laws have made a difference in improving the environment.

Cooperative Law Enforcement Approaches to Environmental Crime

Experience in investigating and prosecuting environmental crimes has demonstrated that cooperative approaches are essential in confronting the law enforcement challenges associated with the nature of pollution which, once released to the environment, respects no borders and defies traditional law enforcement jurisdictions. With this in mind, it is important to promote structures for extensive cooperation between federal, state, local and international law enforcement authorities.

States, local police, and other federal law enforcement agencies have become essential partners with EPA in environmental criminal enforcement. EPA's criminal investigators, moreover, regularly join task forces composed of specialized federal, state, and local law enforcement agencies to pool resources and intelligence and conduct multi-jurisdictional investigations such as those to address the illegal smuggling of CFCs into the U.S. or focused upon an industrial sector or geographic area, sometimes both, as with the petro-chemical industry along the Houston Ship Channel.

ENVIRONMENTAL LAW ENFORCEMENT AND HOMELAND SECURITY

Among the more chilling stories to emerge after September 11, 2001, is that of Danny Whitener, a Tennessee salvage-car dealer. According to Whitener, a man calling himself "Mo" landed his small plane at Copperhill airport in March 2001 and began asking questions about a nearby chemical plant. As Whitener recounted to the FBI and the press, the stranger wanted to know "What kind of chemicals are in those massive storage tanks?" Whitener informed the pilot he thought the tanks were empty but he was in fact wrong. The tanks actually contained as much as 250 tons of sulfur dioxide, an amount that if released would be sufficient to harm as many as 60,000 people, according to worst-case estimates developed by the plant. Whitener and at least two other witnesses believe the stranger in Tennessee that day was none other than Mohamed Atta, a key suspect in the strike that felled the World Trade Center.

The terrorist attacks of September 11, subsequent anthrax attacks, and the prospect of terrorist groups using chemical, biological, and nuclear weapons has altered the calculus of risk that underpins much of environmental law and brought a mandate for greater security. Risks that seemed too remote or isolated to be addressed in a serious and comprehensive way by most governments, corporations, or individuals last year now are now all too real. The priorities of environmental protection and security efforts have shifted accordingly to reflect this sea change in risk analysis on national, international, and local levels.

For example, in the aftermath of September 11, the President created the Homeland Security Office. Federal legislation such as "The Chemical Security Act of 2001" was introduced in the Senate (S.1602). State anti-terrorism legislation was introduced placing new restrictions on hazardous materials transportation. Facilities with large amounts of hazardous chemicals stepped up security efforts and minimized the amounts of the most hazardous substances kept on site. The District of Columbia's Blue Plains Waste Water Treatment Plant, just a few miles from the Capitol, quietly at night under guard, removed 900 tons of liquid chlorine and sulfur dioxide. Within days they accelerated a program to use less toxic chemicals like bleach instead of chlorine gas for wastewater treatment.

Of course, efforts to protect society from threats in the wake of great human loss and suffering are nothing new. Indeed, security is defined in every generation by identifying the greatest risks to human life, including threats to the environment, and by implementing measures to eliminate or minimize those risks. Freedom from risk, the first definition of security in many dictionaries, is the aspiration of much of the law itself, and has particular relevance to the development of criminal and environmental laws.

Early environmental laws resorted to the most severe sanctions of the criminal law to protect human life and health from water contamination, waste, and airborne pollution. Following the major plagues of the 12th century, in 1372 Edward the Third of England proclaimed that "throwing rushes, dung, refuse and other filth and harmful things into the [Thames] shall no longer be allowed". In 1388, an act of Parliament "forbade the throwing of filth and garbage into the waters." Even earlier, in 1306, King Edward the Second of England had prohibited the burning of coal on pain of death when Parliament was in session. In more recent times, nations have continued to employ the deterrence of the ultimate criminal penalty to help assure the security of resources and prevent threats to human health and the environment. In the mid 1990s, both Egypt and the People's Republic of China adopted death

penalties for water pollution crimes and the illegal disposal of hazardous wastes.

In the international context, over the last decade, concepts of environmental security have emerged in broad terms to address global and regional environmental changes, particularly impacts from human activity that pose threats to national security and resources. In the wake of September 11, international efforts at environmental security must be sharpened and redefined to include a focus on immediate risks from biological, chemical, and nuclear materials, and those individuals and groups who would use them as weapons of mass destruction and terror. Addressing these risks in an era of global commerce and freer and faster trade, requires better international frameworks for systematic integration of information among law enforcement agencies, customs services, environmental regulatory agencies, trade agencies, and intelligence sources. Nations must improve their capabilities to share and analyze such data across borders, using new information technologies, to detect shipments of chemical, biological, or nuclear agents that may be precursor to acts of terrorism or environmental crime.

Within the United States, the environmental laws themselves were designed to address risks to human health and the environment posed by a complex industrial society, which became all too apparent by the 1960s. It is worth noting that many federal environmental laws, and the capacity to enforce them, were developed in response to industrial risks that became tragically manifest with the death of thousands in Bhopal, India and other serious incidents in the United States. Every environmental law reflects a calculus of risk and constructs compliance requirements designed to reduce the risks and minimize the impacts of pollution over time. In recent years, every proposed regulation engenders a debate as to whether it is reasonable and proportionate to the risk it addresses, and how that risk compares to others we accept as a society.

The events of September have changed the terms of those debates, imposing security as a paramount value in environmental law, regulation, and for environmental management systems. New legislation has been introduced on every level of government that would superimpose new security measures on the construct of existing environmental laws. The imperative to implement environmental security measures for critical infrastructure will provide a new lens in considering 'next generation' environmental legislation, with an emphasis on facilitating the widespread deployment of more strategic and efficient approaches to minimizing environmental risks.

Even with advances in environmental management over the last decade, few facilities have integrated security monitoring and defenses into their Environmental Management System (EMS), or adequately addressed risks of sabotage from outside or inside the facility. Conversely, despite advances in technologies for security systems, often a very separate operation from environmental management at facilities, very few adequately address threats from chemical or biological agents. In recent years, certain sensitive facilities have deployed environmental managements systems with integrated approaches to information management and security monitoring, using new technologies. The search for safety from a newly apparent array of threats, at home and from abroad, has created new incentives for sustainable and secure environmental management practices, as well as a new urgency in defining and implementing environmental security for our time.

## Towards a National Environmental Security Policy With an Integrated International Law Enforcement Response

Over the last decade, as the concept of environmental security evolved from a minor point to a significant element of United States national security policy, the capacity of the various agencies required to work together to implement these policies lagged behind. In October 1998, the White House published a 'National Security Strategy for a New Century'. Under its environmental initiatives, it described threats to environmental security this way: "Decisions today regarding the environment and natural resources can affect our security for generations. Environmental threats do not heed national borders and can pose long-term dangers to our security and well-being. Natural resource scarcities can trigger and exacerbate conflict. Environmental threats such as climate change, ozone depletion, and the transnational movement of hazardous chemicals and waste directly threaten the health of U.S. citizens."

While the late 1990s witnessed a proliferation of such "policy initiatives", rarely was there a mechanism for implementing these policies across the different agencies with overlapping jurisdiction for international traffic in hazardous substances, much less resources to follow through in a serious way. Many of the environmental initiatives themselves consisted largely of urging ratification of various conventions, United Nations agreements, and calling for "increased cooperation in fighting trans-boundary environmental crime." This latter point reflected a growing recognition that the treaties themselves had little or no impact on actual environmental security unless the Multi-lateral Environmental Agreements (MEAs) were adequately implemented in law, and unless there was a capacity to enforce these laws across national borders. As the United Kingdom's Secretary of State for the Environment John Gummer put it: " These Conventions are worthless words on paper, unless their provisions are enforced in practice."

At about the same time, several multi-agency, multi-national enforcement initiatives emerged to bring together the data from environmental agencies with law enforcement agencies charged with international investigations in order to detect violations of international environmental agreements. An examination of these operations provides a model for the broader and more systematic approaches of information and law enforcement integration required for homeland security from chemical, biological and other threats that cross national borders.

## The 1990s Black Market in Ozone Depleting Chemicals: Lessons for Law Enforcement in Detecting Illegal Shipments of Chemicals in International Commerce

After the United States implemented the phase out of CFCs under amendments to the Clean Air Act in the early 90s, and consumers were required to pay more for the alternative chemicals and for retrofitting their air conditioning and refrigeration equipment, a black market emerged for smuggling these prohibited CFCs into the United States from countries that were still permitted to manufacture and use them, such as Mexico, Russia, and China. Once in the United States, these illegal CFCs were virtually indistinguishable from the existing stockpiles that were permitted until they were depleted. In 1995, someone could purchase a container of refrigerant in

Mexico for two dollars, and sell it in Texas for twenty dollars. This was more profitable than trafficking in cocaine.

In fact, illegal trafficking in ODS was second only to narcotic trafficking for periods in the 1990s. After United States Customs Service, EPA, IRS, the Department of Justice and other agencies began working together to identify illegal shipments, thousands of tons of CFCs were seized in U.S ports in Miami, New Jersey, California, originating in places like Russia, China, and India. Major U.S. chemical companies assisted in the effort to identify illegal shipments of ODS, which were shipped in containers that were identical to legal imports of compressed gasses by providing information, machines, and pressure gauges which could be used to distinguish prohibited forms of ODS that were labeled as permitted forms of these gases. The chemical industry cooperated with law enforcement in this way, in part, because the it had spent hundreds of millions of dollars in developing the alternatives to CFCs, and that market was being crippled by the illegal imports.

The multi-agency initiative involved bringing together Customs agents with their automated customs and trade data, EPA agents and data from EPA's Office of Air and Radiation regarding the notification and controls of lawful shipments of ODS under the Montreal Protocol, IRS agents and their tax information on such shipments and receiving facilities, the FBI, and United States Attorneys as well as prosecutors from DOJ's Environmental Crime Section, who played a coordinating role. Ultimately, this initiative involved foreign governments and international organizations such as the World Bank, with its data on the allowable production of ODS by facilities around the world. Dozens of prosecutions, hundreds of years of imprisonment, and hundreds of millions of dollars in fines resulted from this coordinated effort that became known as the National CFC Initiative.

The CFC initiative identified the type of compliance information, trade data, and various law enforcement information that needs to be brought together in a systematic way to detect illegal shipments of chemical, explosives, and other goods in international commerce that may be precursor to acts of terrorism, or forms of international environmental crimes that threaten environmental and national security. It also demonstrated the type of public and private partnerships necessary to detect illegal traffic that can be easily disguised as lawful commerce in chemicals or biological substances.

Towards Broader Application of these Lessons and New Technologies for International Environmental Security

By the late 1990s, the successful prosecution of smugglers of CFCs into the United States was recognized internationally as a model for how law enforcement agencies, regulators, and international organizations could work together to enforce national laws which implemented international environmental agreements. It was also acknowledged, however, that the success of the CFC Initiative was the exception not the rule. Very few countries had the capacity to detect violations of these laws at all. Even in the U.S., it is unknown how many CFCs got through for every illegal shipment detected, and the ability of Customs to detect other violations of environmental laws varies greatly from port to port around the country.

Senior policy makers around the world recognized the need for better mechanisms for sharing data within and among nations as a prerequisite for meaningful enforcement of laws governing international commerce in regulated substances. At the G8 Summit Meeting in Birmingham, England in 1998, the Heads of State of the G8 Nations committed to greater cooperation among their nations and the developing world to address threats to national security posed by international environmental crime, estimated at that time to exceed 5 billion dollars a year in illegal trafficking in chemicals, hazardous wastes, and other regulated substances.

Pursuant to the Heads of State direction at the Birmingham Summit, in 1999 the G8 Nations' Lyon Group of Senior Experts in Transnational Organized Crime initiated a law enforcement project on international environmental crime. This project was launched to improve information exchange, data analysis, and cooperation among law enforcement agencies, international organizations such as INTERPOL, the World Customs Organization, and the Secretariats of the MEAs, as well as environmental and trade regulators. The G8 Project was asked to develop collaborative mechanisms to detect violations of international environmental laws, and the organized crime and terrorist groups associated with them.

In meetings at the U.S. Embassy in Rome and the Consulate in Naples, participants of the G8 Nations' Project began to collaborate in the use of new technologies, as well as information and intelligence exchange to detect international environmental crime.
Specifically, they agreed to adopt tools such as the Internet based communication system established between the ports of Rotterdam and Hong Kong which transmits pictures of suspect containers with their ID numbers to the receiving port. They also agreed to collaborate in the use of satellites to detect evidence of illegal dumping by ships at sea, as well as dumping and deforestation on the land.

Perhaps most relevant to broader application for environmental security efforts was the G8 Project's agreement to pursue link analysis of compliance data and other information across nations, and the various regulatory and law enforcement agencies in those nations, to detect shipments that violate environmental or other laws administered by regulatory agencies. The U.S. EPA's Center for Strategic Environmental Enforcement designed an international environmental crime and intelligence system to provide the U.S. and participating nations' law enforcement agencies access to compliance data and law enforcement information over secure Internet connections regarding a specific shipment or exporter, importer, receiving facility, or other entity or individual involved in a suspect shipment. Using link analysis,
this information may be compared with commercial data bases that track trade in international commerce and other publicly available data to stop these shipments before they clear Customs.

Also, certain Customs and trade data may be compared with EPA regulatory data governing the import or export of regulated chemicals or wastes in a proactive and systematic way to identify noncompliant or suspicious shipments in the first place. This approach was successfully deployed to detect illegal shipments of ozone depleting chemicals between Canada and the United States and other shipments originating in China and Russia. Bringing together such information on a broader scale and in real time is one key to enhancing national security from illegal import of hazardous substances, and identifying the organized criminal groups and terrorist who are behind some of these shipments.

Challenges for Homeland Security-- With Dozens of Relevant Federal Agencies and over Ten Thousand State and Local Law Enforcement Agencies, as a Nation "We don't know what we know" about threats to security.

On Tuesday, December 11th, 2001, testimony before the Senate Judiciary Committee considering anti-terrorism legislation aimed at better sharing of information between federal, state, and local authorities provided a compelling illustration of how better integration of such information is critical to security efforts. Baltimore Mayor Martin O'Malley testified about a Maryland state trooper pulling over one of the hijackers of the jetliner that was crashed into the pentagon just days before September 11. O'Malley testified that the trooper had no way of knowing that the man was an international terrorist, even though the federal government had him on a watch list.

O'Malley told the Committee, "the CIA had him on a watch list, the FBI didn't, and no information was shared with state or local law enforcement. The state trooper who pulled this driver over would have known he was wanted if he had an outstanding speeding ticket in the State of Maryland, he would have known if his insurance was expired, but he had no way of knowing that he had just pulled over an international terrorist."

It is only over the last decade that technology has enabled law local law enforcement to identify drivers that have outstanding tickets, warrants, and matters pending in other jurisdictions, using computers. In order to improve security nationally, there needs to be greater integration with appropriate information on the federal level, and internationally between relevant agencies, so that the law enforcement agency in the best position to stop a threat knows what is already known by the government on some level.

The challenges of coordinating different law enforcement agencies and integrating information among them have long been recognized, but difficult to surmount absent a task force approach in a high priority case or initiative, or a galvanizing event such as September 11. In May 2000, the President's Interagency Commission on Crime and Security in U.S. Seaports published its report, urging throughout greater coordination of all federal, state, and local law enforcement agencies with significant regulatory and enforcement missions. Just on the federal level, for detecting illegal imports that threaten security, these agencies include Customs, Immigration, the Food and Drug Administration, the Environmental Protection Agency, the Bureau of Alcohol, Tobacco, and Firearms, the Drug Enforcement Administration, the FBI, the Coast Guard, and the Departments of Agriculture, Commerce, and Labor, and aspects of the intelligence community. The report's first recommendation was to strengthen interagency, intergovernmental, and public/private sector efforts to address the threats of seaport crime (including terrorism), and to enhance control of imports and exports.

While this report focused on crime and security at the 361 public seaports themselves, these ports are among the most vulnerable components of the international and inter-modal trade system. With the billions of tons of cargo coming through these ports every year, and the smuggling of contraband and illegal aliens that may be connected to terrorism, the report's finding that the state of security in U.S. seaports generally ranges from poor to fair is not comforting.

Among the reasons for vulnerabilities at ports is the exponential growth of trade over the last twenty years, the nature of modern container shipments, and the failure of inspection and control resources and technologies to keep pace. Economic globalization has compressed reaction time for law enforcement and has blurred national borders. Most import crimes go undetected at ports because less than two percent of cargo is inspected. This includes illegal transport of pre-cursor chemicals, hazardous materials, drugs, munitions, and potential weapons of mass destruction. Less than one per cent of export cargo is inspected.

Complicating efforts at homeland security from illegal imports further, the 'stove-piping' of traditional law enforcement agencies presents obstacles to working together and sharing data to combat newer crimes that cut across law enforcement jurisdictions and involve regulatory agencies. With different law enforcement agencies, regulatory agencies, all with their disparate data collection and dissemination systems designed for their administrative functions, there is too little integration across these functions to allow for a central assessment of illegal imports that may pose threats to national security. Meanwhile, international criminal and terrorist threats change constantly and adapt to law enforcement capabilities. In an era when organized crime and terrorists use advanced communications around the world, national law enforcement agencies can no longer afford "not to know what we know".

While reports like the Seaport Crime and Security study have identified these issues in recent years, little has been done to implement recommendations from these reports in a serious and comprehensive way across the government agencies. Indeed, agencies spread thin to cover their core functions are often reluctant to devote their resources to an inter-agency process. They are particularly reluctant where other agencies have overlapping jurisdiction and when an investment in new information technologies may be required. Even with the current mandate, resources that are likely to be appropriated, and a new focus on asymmetrical threats to national security from terrorists, it presents many challenges to existing institutional structures to bring the right information together in the right way and in time to detect threats before it is too late.

It is clear, however, that technology that is widely used in the private sector and for military purposes is available to bring together relevant information across agencies and nations through link analysis and other measures to enable law enforcement authorities to better determine threats as they cross national borders. It is imperative that agencies and international organizations that have designed and are administering regulatory processes, or are developing new ones, structure them in such a way to take full advantage of these technologies, particularly electronic reporting, and design them to be compatible with other agencies information systems, particularly Customs automated data systems.

Some government agencies have been slow to move forward with electronic reporting and record keeping, which is the only way to facilitate comparison with Customs data, and other agencies law enforcement information in a timeframe consistent with detecting illegal imports before it is too late. Efforts to move forward with bar coded electronic manifests and with rendering as much compliance data in secure and harmonized electronic form as soon as possible can only improve the ability of law enforcement to detect and track illegal shipments and other violation of international agreements. If trucking and shipping lines can track their cargo using Global Information Systems, and grocery stores can track their inventory using bar codes and electronic

systems, shouldn't governments be in a position to use these same technologies to detect and track shipments that pose threats to national security?

While the National CFC Initiative, the G8 Nations' Project on Environmental Crime, and other international task forces provide models for how agencies can bring together this information and use these new technologies, in order for these approaches to be effective on a broader scale, building blocks have to be in place to facilitate the sort of communication required, not just between federal agencies, but between trading partners as well. New international agreements designed to provide international environmental security from the most harmful chemicals and other risks need to keep up with the pace and methods of automated trade, and with the methods of those who would violate these agreements to make illicit profits or commit acts of terror.

Structuring International Environmental and Trade Agreements to Take Advantage of Integrated Communications and Deliver More of the Security They Promise.

Unless law enforcement agencies at the border have systematic real time access to regulatory information to determine whether a shipment complies with regulatory requirements, nations cannot realistically expect to achieve widespread compliance with international agreements designed to control the trade in hazardous substances, including those that may be used as weapons of mass destruction. Yet, many international agreements, such as the Basel Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal, still rely on the environmental agency from the exporting nation faxing notification and consent forms to the environmental agency of the importing nation, with no direct connection to customs agencies and their largely automated data systems for tracking trade. Moreover, the regulatory classification systems for hazardous wastes bore little resemblance to the tariff codes and other nomenclature used by customs services to track goods in international commerce. These are among the obstacles that have made certain international agreements notoriously difficult to enforce.

New environmental agreements, and revisions to existing ones, must facilitate the exchange of compatible data between regulatory agencies and customs services, using electronic reporting harmonized with the automated data processes governing international trade and customs' clearance processes. Negotiators of recent agreements have considered the problems of detecting illegal traffic, but whether nations implement measures enabling them to detect violations in the real world of international trade remains to be seen.

For example, leading up to the agreements last year on Persistent Organic Pollutants (POPs) and Prior Informed Consent (PIC), parties at preparatory meetings considered recommendations for detecting and preventing illegal traffic in these chemicals, based upon the experience of those with experience in enforcing the import and export laws governing hazardous wastes and ozone depleting substances. In October 2000, at the meeting of the Intergovernmental Forum on Chemical Safety in Salvador, Brazil, the final report accepted several proposals aimed at the prevention of illegal international traffic in toxic and dangerous products, including urging mechanisms the integration of compliance information, with customs data, and law enforcement intelligence. While the POPs Convention adopted language on

compliance and enforcement, unless nations implement administrative notification and consent regimes using electronic reporting with real time connection to customs trade data and inspection and control functions, an opportunity will be lost to use the best available technologies to provide a greater measure of international environmental security.

Other avenues for pursuing the type of data integration required to better assure compliance with international environmental agreements include the trade agreements, and the Customs agreements that implement technical exchange of information between nations. While trade agreements have become increasingly sophisticated in their use of technologies, and Customs electronic data systems have facilitated faster trade with expedited clearance processes, they do not have adequate interface with environmental regulatory information under the statutes that implement most environmental agreements. With increased international trade and relatively fewer opportunities for meaningful inspection, it is all the more important that the framework for data exchange imbedded in trade agreements, such as the Free Trade Agreement of the Americas, facilitate a link with the environmental compliance data necessary to determine whether a shipment is legal, or may pose a threat.

The World Customs Organization and governments have supported such measures as a matter of policy. When it comes time to negotiate the actual trade and technical agreements themselves, however, integration with environmental agencies' compliance data has not been a priority or received much in the way of resources from Customs or from the environmental agencies themselves. While harmonizing waste, chemical, and pesticide definitions and codes under environmental laws with corresponding Customs' nomenclature for categories of goods in commerce may require additional attention and resources, without such harmonization, there is no effective way to detect suspect shipments on a broad enough scale to minimize the risks illegal shipments currently pose, with trade predicted to triple by 2020.

New Urgency for Industry and Facilities to Adopt Environmentally Sound and Secure Management Practices

Just as better integration and management of data from different sources is a key to improving national and international efforts to enhance security, these same fundamentals apply to achieving greater environmental security for industry, critical infrastructure, and specific facilities in the U.S. As Frederick Webber, President of the American Chemistry Council, testified before the Senate on November 14, 2001 on the proposed Chemical security Act of 2001, "Knowledge is security. The cornerstone of effective security is intelligence about potential threats that allows the threat to be intercepted and allows the target of the threat to be properly prepared. In fact, knowledge is our best defense. Our industry believes it is critically important to establish formal procedures for circulating information about potential, and, importantly, credible and specific threats to the nation's critical infrastructure. At the same time, such a system can provide government decision makers with the full range of information on which to make their decisions.

"After September 11, everyone began to revisit potential threat scenarios. Our estimations of the probability of a worst-case scenario have changed, and we are moving rapidly to prepare for

these new potential threats. Our preparations are most effective when we have high quality and timely intelligence regarding such threats. Our industry is moving aggressively to establish better information sharing mechanisms with federal, state, and local officials. More can be done in this area, especially with the Office of Homeland Security."

The potential infiltration or sabotage of a large chemical facility or a petroleum refinery raises a host of other frightening scenarios. According to the U.S. Environmental Protection Agency, more than 123 plants each maintain amounts of toxic chemicals that if, if released, could endanger more than 1 million people. The submittals of firms under the Clean Air Act Risk Management Program Rule describe a host of evils that could occur in the event of an explosion or significant toxic chemical release. Recognizing these risks and the need for even stricter discipline in the wake of 9/11, the American Chemistry Council, the American Petroleum Institute, the Fertilizer Institute, and other industry groups have urged member companies to undertake a range of actions to increase security. Even they concede, however, that more can and should be done to enhance security still further.

New Jersey, the nation's most densely populated state with a large number of facilities with highly hazardous chemicals, has implemented programs that go well beyond the federal requirements under the Clean Air Act.. In 1986, shortly after the tragic release in Bhopal, India, the New Jersey Legislature passed the Toxic Catastrophe Prevention Act (TCPA). As New Jersey Environmental Commissioner, Robert C. Shinn testified before the Senate in November, 2001, "Over the course of nearly two decades, we have built a coordinated, effective program that not only works to prevent releases of hazardous chemicals but also provides us with the information and infrastructure so that we can be ready at a moment's notice to respond if a release of a hazardous substance does happen. In this way, any releases that occur, whether they are accidental or intentional, can be contained and the impacts minimized."

The New Jersey programs place a greater emphasis on risk analysis, prevention and preparedness than the federal scheme. As Commissioner Shin went on to testify: "...our law requires facilities to perform comprehensive reviews and risk assessments of all possible release scenarios that may cause off-site impacts. Presently, federal regulation only requires facilities to perform analysis of worse case scenarios and one alternative case scenario. Furthermore, in New Jersey, we require that facilities quantitatively assess and characterize risk, going a step beyond any other process safety management and risk management program regulations in the U.S. This means that the potential releases and resultant off-site impacts must be quantified."

Since September 11, many facilities have reviewed both their security and environmental management practices to create greater defenses. In October, the American Chemistry Council published Site Security Guidelines for the Chemical Industry. Measures to enhance security have included the following: centralizing receiving operations; increasing surveillance and the number of security guards; enhancing access control measures; moving rail tank cars within the fence-line; permitting employee vehicles only on facility premises. The security guidelines themselves are available at www.americanchemistry.com.

Environmental Management, Information Systems, and Security

While many facilities are just now reassessing crisis management, response, and evacuation plans and reviewing their environmental management approaches, other companies have been minimizing the risks and liabilities of their operations by implementing strategic approaches to environmental management over the last decade. The elements of these environmental management systems designed to assure compliance with law, minimize or eliminate the use of the most hazardous substances and wastes, reduce emissions and releases, and improve process efficiencies are important from a security perspective as well.

In recent years, as part of their environmental and information management systems, some facilities have deployed innovative technologies, electronic commerce techniques, remote sensing, and integrated monitoring for compliance and security over secure internet based systems. In addition to achieving new levels of environmental security, such facilities in the public and private sectors have realized efficiencies that have saved costs and natural resources. These facilities have come to rely on Environmental Management Information Systems that allow for real-time monitoring and integration of many different systems over the internet.

For example, NASA's White Sands Test Facility developed a facility wide electronic monitoring and reporting system. Under an XL Agreement with the State of New Mexico and U.S. EPA, the facility can send its electronic report to the State in electronic form, saving thousands of dollars every reporting cycle. At the same time, electronic reporting and central monitoring within the facility has made that information more readily available to managers, as well as state and federal officials. The White Sands facility is moving towards web site and internet posting of its environmental compliance monitoring reports, including using three dimensional, digital mapping of the facility, its sources, and releases. Having real time access to this information provides a greater level of security monitoring in and of itself, as well as facilitating greater access and quicker notice of compliance and or other problems that may pose a risk to the facility or community at large.

Certain military bases have also moved to sophisticated environmental management information systems. In addition to monitoring for environmental compliance, these systems also monitor for minute amounts of biological and chemical agents upstream of the facility, monitor for meteorological conditions, releases from off the site, and other parameters that are important from a security perspective, using remote and wireless devices, accessible from the secure web based control center. In the last year, one of these facilities saved 400,000 gallons of water a day due to the efficiencies realized by moving to this system. Another facility, by moving to electronic commerce and just in time delivery of the most toxic chemicals, was able to eliminate an on-site warehouse where these chemicals were stored, and avoid having to submit a RCRA Subpart B permit at all because they remained under the regulatory threshold.

Thus, some of the same techniques that leading companies have come to deploy for sound environmental management purposes may be brought to bear at facilities to achieve new levels of security and efficiency as part of an Environmental Management and Security System (EMSS). Accordingly, facilities looking to minimize their risks from acts of terrorism and other threats need to evaluate both their traditional security operations and their environmental management practices. A security audit, terrorism threat assessment, and environmental management gap analysis may reveal vulnerabilities that may be addressed through various

commonsense measures. Advances in communication technologies and remote sensing over the last decade offer new ways to monitor and integrate information relevant to detecting a greater array of risks than ever before. These tools put managers in position to know what is happening, respond quicker, and minimize consequences from risks that materialize.