
LOCAL ENFORCEMENT: THE ROLE OF THE CRIMINAL INVESTIGATOR

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SUMMARY

This paper is based on experience gained investigating environmental crimes in the Suffolk County, New York, District Attorney's Office. Part One describes the specialized training, equipment, and planning necessary to successfully investigate environmental crimes. Part Two describes some of the methods which may be utilized to develop probable cause to believe that a crime is being committed at a facility. In the United States, law enforcement must establish such probable cause to obtain a search warrant. A search warrant is a court order authorizing the search of premises to gather evidence of a crime.

1 THE CRIMINAL ENVIRONMENTAL INVESTIGATOR**1.1 The Training**

A successful criminal environmental investigation requires the application of several different disciplines. The environmental investigator must bring basic police skills such as interviewing and interrogation, surveillance, search warrant execution and experience in the proper handling of criminal evidence to the investigation. In addition, he or she must be trained and equipped to gather physical evidence at an environmental crime scene, in a safe and proper fashion. This requires specialized training in the handling of hazardous materials and a full understanding of the appropriate environmental laws, supporting regulations and hazardous waste sampling and analysis protocols.

Fortunately, this specialized training is available to the criminal investigator from a variety of sources. The United States Environmental Protection Agency offers many training programs in the areas of Hazardous Materials Incident Response, Hazardous Materials Sampling and Criminal Environmental Investigations. Many state and local agencies also offer similar courses. Many of these training programs are free and are offered throughout the country several times a year.

1.2 The Equipment

The well-trained criminal environmental investigator should also be well-equipped. Most successful criminal investigations, be they burglaries, arsons or homicides, depend upon the investigator's ability to examine and gather physical evidence. Even in situations where evidence technicians are gathering the physical evidence, it is normally done under the direct supervision of the criminal investigator. This same basic investigative principal also applies to criminal environmental investigations. The criminal environmental investigator must be equipped with the

proper crime-scene, safety and field monitoring equipment to allow for a safe and proper examination of any physical evidence found at an environmental crime scene. Appendix 1 lists some of the items that may be utilized by the environmental investigator at a crime scene.

1.3 Standard Operating Procedures

In addition to obtaining the proper training and equipment, there is a federal requirement to establish standard operating procedures.¹ These standard operating procedures must address the issues of health and safety for the environmental investigators working in areas which may contain hazardous substances, hazardous materials² and biological hazards.³

These procedures should address such topics as organizational work plan, site evaluation, site control, monitoring, personal protective equipment, communications and decontamination procedures. In addition, it is recommended that standard evidence gathering procedures be incorporated into the standard operating procedures. Such topics as note taking, removal of fingerprints, tire track and footprint castings, the crime scene sketch, crime scene photography and evidence chain-of-custody procedures should be addressed within the standard operating procedure.

1.4 Locating and Utilizing Resources

One of the most difficult challenges facing the environmental investigator is locating and utilizing the resources necessary to effectively gather evidence at an environmental crime scene. Safety and chemical sampling protocols clearly establish the need for additional personnel with special training.

1.4.1 Safety Resources

Whenever the presence of hazardous substances, hazardous materials and/or biological hazards is suspected at an environmental crime scene, a qualified safety officer, a Backup team and decontamination facilities are needed. The first step in locating the resources necessary to fulfill these requirements is the identification of the local Hazardous Material Response team (HazMat).⁴ The Superfund Amendments and Reauthorization Act of 1986 (SARA), includes an emergency planning provision known as Title III. Under this legislation, each locality in the United States must establish an emergency plan to respond to the release of an extremely hazardous substance. These emergency plans include the requirement for a local hazardous materials response team. In some jurisdictions, the HazMat team may fall under the control of the local fire department, while in others it may be a function of the local police department. The environmental investigator should locate this team and make every effort to utilize its resources for any environmental crime scene. The environmental investigator may be surprised to find willing and cooperative emergency response personnel. There is a mutual benefit in having HazMat trained criminal investigators and HazMat team emergency responders working and training together. Most HazMat teams are designed to mitigate dangerous situations involving the release or potential release of hazardous chemicals. The HazMat response plan might not have any provisions established to affix culpability on those individuals responsible for the chemical release. When criminal negligence or criminal intent is suspected, the HazMat team should have a qualified environmental investigator available. In addition, environmental crime scenes offer the HazMat team an opportunity to work and train under less than life-threatening situations.

1.4.2 Sampling Resources

The proper gathering of chemical evidence is crucial to the success of any criminal environmental investigation. The personnel utilized for this procedure must be highly trained in safety, hazardous waste sampling and the handling of criminal evidence. Fortunately, many local and state regulatory agencies have such individuals available to assist the environmental investigator. In addition, the United States Environmental Protection Agency has many trained individuals available to assist state and local authorities. The environmental investigator should contact these groups and establish protocols in which their resources may be utilized.

2 SEARCH WARRANTS: DEVELOPING PROBABLE CAUSE

When attempting to gather evidence to support an application for a search warrant it is essential that the type of environmental contamination be identified. The facility in question may have air, ground, underground and/or sewer system hazardous discharges taking place. Each type of release has its own unique properties. In gathering probable cause as to their existence, the environmental investigator has a multitude of tools, resources and investigative techniques at his or her disposal.

2.1 Typical Surveillance

The typical surveillance involves personnel using vehicles and natural cover in an attempt to personally witness the events taking place at a facility. Still photographs and videotape should assist the environmental investigator in recording these events.

While conducting this type of surveillance, the environmental investigator should note any evidence of past or present discharges which may be seen from his or her surveillance point. Overflowing leaching pools, liquid streams from hazardous waste storage areas and chemical stains on parking lots may be an indication of illegal hazardous waste release. The exterior walls of the buildings should also be examined for stains. Plating lines, when placed against interior walls, may have their hazardous chemicals leach through those walls. The interior location of plating lines can, at times, be determined by the chemical stains on exterior wall surfaces. Also, the environmental investigator should look for any recent signs of excavation. A long cut in an asphalt or concrete parking lot leading from a building to a storm drain may indicate a recently installed underground discharge pipe. Any sunken or depressed areas around the facility may indicate the presence of a hidden leaching pool. Depressions such as these are normally caused by soil settlement after a leaching pool has been installed.

This type of surveillance will also provide investigators with the vehicle license plate numbers of the various individuals employed at the facility. Once these numbers have been obtained, employee background investigations can begin. These may include criminal record checks and outstanding arrest warrant checks for those employed at the facility. However, there may be times when this type of surveillance is not practical and other methods must be utilized to obtain the desired information.

2.2 Remote Surveillance

This type of surveillance comes in many forms. The use of aerial photography, infrared, remote video cameras, or automatic air and sewer samplers, allow the investigator to gather a large amount of data while limiting the risk of exposing the investigation.

2.2.1 Aerial Surveillance

Aerial surveillance of a suspected facility may reveal recent excavation sites, ground stains, manufacturing areas, waste storage, air pollution sources, as well as point sources for waste discharges⁵. On occasion, aerial surveillance may also reveal illegal activities in progress. The use of aerial infra red may be useful in determining underground areas where there is an obvious heat differentiation. It may also assist in locating areas in the facility where certain types of heat related manufacturing activities are taking place.



Figure 1 An illegal asbestos storage facility. Note the workers' lack of respirators

2.2.2 Remote Video Surveillance

Remote video cameras have been in use by law enforcement for many years. They are useful in determining if certain types of activities are taking place when ground surveillance is impossible. A telephone pole-mounted video camera, disguised as an electrical transformer, may be useful in determining what activities are taking place at the suspected facility. However, legal restrictions regarding this type of surveillance may differ from state to state. Therefore, it is essential that this type of surveillance operation be reviewed by a prosecutor prior to implementation.

2.2.3 Remote Air Sampling

Remote air sampling is one of the best methods available today in determining if certain types of chemicals are being used at a facility. Most volatile and semi-volatile chemical compounds, when used in quantities or discharged at a facility, can be found in the atmosphere. Today's air sampling devices will allow the investigator to set a timer, leave the area and return at a later time to retrieve the samples. A chemical analysis of the sample may reveal the presence of these compounds in minute concentrations.

However, using this investigative technique for the gathering of probable cause must be well planned. Many variables may bring into question the validity of the sample results. Other nearby manufacturing facilities, vehicle traffic and/or low flying aircraft may contaminate the air sample to such an extent that it is no longer reliable.

The best investigative technique to use in remote air sampling is to place air sampling devices on all four sides of a facility. Determine and document the wind velocity and direction. Set each remote air sampler to begin air sampling at the same time. This will enable you to determine what air contaminates originated up wind of the facility and which contaminates came directly from the suspected facility.

This technique has been used successfully in cases involving clandestine cocaine manufacturing laboratories. Remote air sampling has been used to show that trace amounts of tetrachloroethylene were coming from a particular building. By surrounding this building with air monitoring devices, it was easy to determine, after analysis, that the building in question was the only possible source of the tetrachloroethylene. The presence of this compound, along with its known use as a precursor in the manufacturing of cocaine, helped supply the necessary probable cause to obtain a search warrant. This same technique can be used to identify chemical usage at various industrial facilities such as plating operations, circuit board manufacturers, furniture strippers, auto body repair shops and a whole host of other industries utilizing hazardous chemicals that may be indicative of the nature of the business.

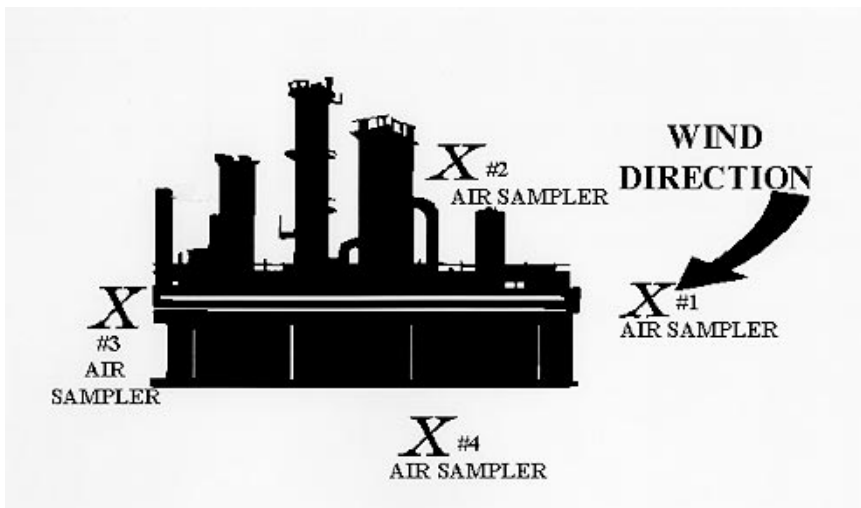


Figure 2 Air sampling devices positioned around facility suspected of illegally discharging its waste

2.2.4 Remote Sampling in Sewer Systems

Hazardous waste discharges to Publicly Owned Treatment Works (POTWs) offer a unique challenge to the environmental investigator. In many cases, the hazardous waste generator will have a permit to discharge certain types of wastes to the POTW.⁶ This permit will list the various discharge limitations. In addition, copies of discharge-monitoring reports (DMRs), which may be required under the conditions of the permit, may have been filed with the regulatory authority which issued the permit. Copies of these discharge-monitoring reports should be obtained and reviewed by the environmental investigator.

Some generators may exceed the permitted discharge limitations and in some situations, completely bypass any hazardous waste treatment system existing within the facility. This may result in untreated industrial and/or hazardous waste being discharged directly into the publicly owned treatment works. Finding evidence of such releases has become easier in recent years due to improved remote video and sampling technology.

When hazardous waste is discharged into a sewer system, trace evidence may be left behind. The trace evidence may be in the form of scarring and pitting of the discharge pipe's interior. The hazardous waste, especially if it is in the form of hazardous metals, may leave behind a distinct discoloration. Evidence of this may be determined by sending a sled, equipped with a remote video camera, through the system. The video camera may reveal the damage described above. Videotaping of this type of evidence may assist the environmental investigator in gaining the probable cause necessary for obtaining a search warrant.

Portable liquid samplers can be placed into an existing sewer system and retrieved at a later time. This equipment can be set to automatically sample the waste stream based upon time, flow rates and/or waste stream characteristics (i.e. pH). The samples are then analyzed and the results of the analysis may be used for probable cause purposes. However, as in the air sampling technique discussed earlier, the investigator must be certain that the suspect facility is the source of the contamination. There may be several businesses discharging into the sewer system. By thoroughly reviewing all available sewer system piping plans the investigator will be able to determine the proper positioning of the portable liquid sampler. Portable liquid samplers also have the ability to transmit data. If a facility is in the act of discharging hazardous waste with a high (or low) pH, the portable liquid sampler will send a message to a nearby receiving unit. The investigator monitoring this unit will know that the illegal discharge is occurring at that point in time. This is useful in situations when law enforcement personnel wish to catch the suspect facility in the act of discharging.



Figure 3 Portable liquid waste sampler with remote notification capability

If the above technology is not available to the environmental investigator, there is an additional technique available. A sample team may covertly enter the sewer system and physically retrieve a sample. As with the use of the portable liquid sampler, the environmental investigator must be insure that the point being sampled can be directly traced to the suspect facility.

This type of surreptitious sampling operation is usually done at night and through some entry point in the street. This type of operation will take a great deal of planning due to the risks involved with sampling hazardous waste within a confined space. There are numerous state and federal confined space regulations that govern this type of activity.⁷ In this type of surreptitious operation, the safety of the entry personnel must be of primary concern. In addition, any violations of existing confined space regulations and/or laws on the part of the environmental investigator will diminish his or her credibility at trial. It is important to remember that law enforcement personnel "may not violate the law to enforce the law."

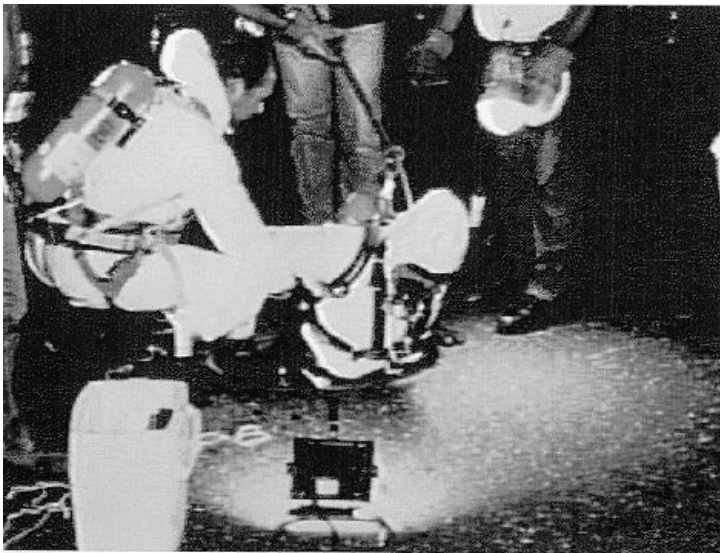


Figure 4 An improper confined space entry into a Publicly Owned Treatment Works (POTW) line. An air line-supplied respirator with winch and tripod are required here

2.3 Regulatory Files

Regulatory files are a very good source of information that may assist the investigator in establishing probable cause. On a local level, vast amounts of information concerning a specific facility may be found in Fire Inspection records, Fire Department records, Building Inspection records, Health Department Inspection records, local water board records, and state Environmental Agency files.

2.3.1 Fire Inspection Records

Local Fire Inspection records may indicate an inventory of hazardous chemicals present at the facility. Building Inspection records may reveal the presence of hazardous vapor venting systems. In cases involving air pollution, this type of information may be vital to the environmental investigator.

2.3.2 Permit Files

The best source of information regarding a facility's environmental history may be found in regulatory air permit files, waste water discharge permit files and related hazardous waste management files. Inspections for these programs may have been completed by local water boards, health departments, environmental agencies and/or public works departments. In some jurisdictions, it may be the state environmental regulatory agency that completes the majority of these inspections. In other instances you may find that a federal inspection was completed by employees of the United States Environmental Protection Agency (US EPA). In each instance the inspector should be located and interviewed regarding what he or she may have seen at the facility during the inspection process. The inspection files may contain information as to type of industry, chemical raw product inventory, hazardous waste inventory, air release limits, water release limits, facility management as well as information regarding how any hazardous waste produced by the facility is disposed of. This may include the name of the licensed hazardous waste transporter utilized by the facility. The environmental investigator may then contact the hazardous waste transporter to determine if the suspect facility has been properly shipping out its hazardous waste. Discretion should be exercised, as this may alert the suspect facility as to law enforcement's interest. It is recommended that the environmental investigator review hazardous waste shipment information by utilizing the data in the Hazardous Waste Manifest System.⁸

2.3.3 Occupational Safety and Health Administration (OSHA) Files

When attempting to build probable cause for a search warrant, there is one regulatory agency that must not be overlooked. That agency is the Occupational Safety and Health Administration (OSHA). This Agency receives thousands of complaints each year from employees concerned about workplace safety. Many of these complaints involve the use and/or misuse of hazardous chemicals in the workplace. The information contained in these files may lead the environmental investigator to employees and former employees who are willing to be interviewed regarding possible illegal activities occurring at the facility under investigation.

2.3.4 Emergency Planning Data Bases

Another source of information which should not be overlooked is the local Emergency Planning and Community Right-To-Know Act⁹ database. This Federal legislation was enacted in 1986. One of its purposes is to help increase the public's knowledge of and access to information on the presence of hazardous chemicals in their communities. This Act requires certain facilities with quantities (>500 pounds) of Extremely Hazardous Substances¹⁰ and large quantities (> 10,000 pounds) of Hazardous Substances¹¹, to submit a list of these chemicals or the Material Safety Data Sheets for these chemicals, to the Local Emergency Planning Committee, State Emergency Response Commission and the local fire department. In some jurisdictions this database may be maintained by the local Hazardous Material Response team

or the local emergency preparedness office. This database may assist the environmental investigator in determining what specific chemicals (and quantities) are present at a specific facility.

2.4 Hazardous Waste Manifest System

This system was designed to track hazardous waste from “cradle to grave.” It requires certain generators of hazardous waste to fill out a multi-part Hazardous Waste Manifest. This document provides information on the amount and type of waste being removed from the facility. It also lists the hazardous waste transporter’s name. The generator must keep a copy of the manifest and give the remaining copies to the transporter. Once the hazardous waste has reached its final disposal site, a copy of the manifest is sent to the regulatory agency. It is at this point that the manifests, in many states, are placed into an accessible computerized database. However, it should be noted that some state databases may be lacking in up-to-date information regarding recent hazardous waste shipments.

Copies of a facility’s hazardous waste manifests may be found in several locations. A copy of the manifest is normally kept by the generator (facility), the transporter, the treatment facility and the state of origination. By examining the originating state’s manifest database, the environmental investigator can determine the following:

- Dates of hazardous waste removal.
- Amounts of hazardous waste removed.
- The types of hazardous waste removed.
- The method of removal (i.e. drums or tankers).
- The transporter utilized for removal.
- The treatment, storage and disposal facility which received the waste.

This allows the environmental investigator to research the hazardous waste disposal history for a particular facility. There may be a dramatic decrease in the volume of hazardous waste shipped from the facility in a year-by-year comparison. There may be no record of hazardous waste ever being shipped from the facility. This type of information is vital to the environmental investigator. If he or she can establish that raw hazardous chemical products are being utilized at the facility and there is no record of hazardous waste being shipped out, there may be probable cause to believe that the hazardous waste is being stored or disposed of illegally.

There are very few industries that can utilize hazardous chemicals, yet create no hazardous waste. However, it is possible that an on site waste treatment and/or reclamation system exists. Information regarding these systems may be found in the regulatory files. However, it is incumbent upon the investigator to obtain additional probable cause beyond that which is offered by the hazardous waste manifest system.

2.5 Regional Enforcement Associations

There are four regional environmental enforcement associations within the United States. These are Regional Enforcement Associations are:

- Midwest Environmental Enforcement Association.
- Northeast Environmental Enforcement Project.
- Southern Environmental Enforcement Network.

- Western States Project.

These associations have joined together to create an environmental database. This database is known as The Regional Associations Information Network (RAIN). The information contained in this database includes the "Criminal Pointer System." This system consists of information regarding state and local criminal environmental actions filed throughout the United States and member Canadian Provinces. Environmental investigators may search via modem for information regarding a suspect company or individual. Database access information may be obtained by contacting your local Regional Enforcement Association.

2.6 Workman's Compensation

This database supplies information regarding employees work related injuries. In some jurisdictions, the database may be accessed by the name of the employer. However, you may need the name of an individual employee to obtain the information desired. This database can supply the environmental investigator with the names of current and former employees at a particular facility who have been injured on the job. In some cases, the injury may be due to chemical exposure. These records, combined with interviews of any injured employees, may provide additional information needed to establish probable cause.

2.7 Unemployment Records

The value of interviewing former employees can not be overstated. These individuals have the potential for supplying detailed information as to the day-to-day operations at a suspect facility. Information regarding the manufacturing process, hazardous chemical inventory and waste disposal may be obtained through interviews with these individuals.

2.8 Certificates of Incorporation

Certificates of Incorporation normally indicate the type of business that is being conducted by the corporation. These certificates will also provide information regarding the legal name of the corporation. This legal name is vital when it is time to prepare the search warrant and the search warrant application. These records are normally filed with the Secretary of State, for each individual state. In addition, numerous commercial services exist which can supply detailed corporate information regarding individual companies. This information can include the number of persons employed, corporate credit history and detailed information regarding management personnel.

2.9 Property Records

Property records are essential in determining the exact location of the suspect facility. These records will assist the environmental investigator in describing the property's location for the search warrant and the search warrant application. These records may also indicate when the property was purchased. Knowledge of the prior owners and operators of a particular suspect facility may be essential as the investigation progresses. It is a common practice today to blame any environmental contamination found at a facility, on the prior owners and/or operators.

2.10 Building Plans

In many locations throughout this country it is a local requirement that builders of commercial buildings file engineering plans with the local city, town or county government. These plans often contain engineer's drawings showing the exact locations of air stacks, fresh-water plumbing, waste-discharge pipes, sanitary pools and connections to sewers and storm drains. The environmental investigator should make every effort to have any existing engineering plans available during the execution of the search warrant.

2.11 Chemical Suppliers Records

It may be difficult to determine the exact types of hazardous chemicals being used at a facility. Simply knowing that the facility in question is using a "press" wash may not be sufficient for probable cause purposes. Press wash normally contains hazardous chemical solvents. However, the exact type of solvents and their percentage present in the product, may vary by chemical supplier. Therefore, it is vital that the chemical supplier utilized by the suspect facility be identified. This may be accomplished in three ways:

- A telephone survey of all local chemical suppliers may be productive. A listing of chemical suppliers may be found in the "OPD Chemical Buyers Directory."¹²
- Surveillance of the facility may detect a drum storage area. Through the use of binoculars, the environmental investigator may be able to note the name of the chemical supplier as listed on the labels of the drums.
- A thorough examination of the facility's trash may produce the name of the chemical supplier. However, evidence obtained under these circumstances may come under future legal review. The environmental investigator must make every effort to strictly follow the laws that govern this type of law enforcement activity. It may become necessary to take the local trash removal company into your confidence. If the suspect facility's trash is picked up and placed into an empty truck and then later examined by the environmental investigator, it is unlikely that any successful legal challenge could be made.

This same technique may be used when it is suspected that the facility is mixing their hazardous waste and trash together. However, it is essential that the prosecutor review any plan regarding this type of evidence-gathering procedure.

2.12 Neighboring Businesses

Interviews of the surrounding businesses may be of value to the environmental investigator. These individuals may have witnessed suspicious activities such as discharges to storm drains, installation of outside waste pipes and/or the presence of chemical odors at specific times of the day or night.

2.13 Delivery Services

Surveillance of the facility may reveal numerous deliveries being made. These deliveries may include office supplies, spare parts and/or refills for any vending machines. The delivery personnel have had the opportunity to make observations while inside the facility and may be a valuable source of information for the environmental investigator.

2.14 The Landlord

Many commercial businesses rent the space that they are occupying. The landlord, having a vested interest in the property, may be cooperative in supplying information to the environmental investigator. In many cases, it is the landlord who has brought forth the initial complaint regarding environmental problems at a suspect facility. It is also common for the landlord to be the complainant in a situation where the tenant has abandoned the facility and left behind quantities of hazardous waste. In cases such as these, the investigator should proceed with caution: if there is a bankruptcy involved, it is possible that the former businesses has listed its hazardous waste with the bankruptcy court and the criminal intent on the part of the former tenant may be questionable. However, if a bid for hazardous waste removal was received by the generator prior to the bankruptcy proceeding and the hazardous waste was abandoned at the site, it still may be possible to pursue criminal charges against the generator. Cases involving any bankruptcy issues should be thoroughly reviewed by the prosecutor.

It is also important to determine if the tenant has had access to the building after his or her business ceased operations. If the landlord has changed the locks on the building, the former tenant may not have been afforded an opportunity to remove the hazardous waste. This may prevent the establishment of criminal intent. Cases such as these may be best left to the civil courts and the regulatory agencies.

2.15 Multi-Tenant Buildings

Multi-tenant buildings add significant challenges to the environmental investigator who is attempting to enter a specific suite or area in the building. These problems are usually compounded by the fact that many of the tenants may share the same waste discharge system. It may be necessary to obtain a search warrant for each tenant in the building. If a hazardous waste discharge to a joint leaching pool is suspected, it will be necessary to execute a search warrant at each tenant's facility. Using evidence gathered during the searches, the suspect tenant will, in all likelihood, be isolated and identified based upon chemical sample analysis.

3 CONCLUSION

The topics covered in this paper are intended to give investigators a basis understanding of information sources available in a criminal investigation. Other parts of the investigation, including the execution of the search warrant, are not covered. For further information on those areas, readers are urged to consult the sources mentioned in footnotes, or the textbook from which this paper is taken.

ENDNOTES

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2. DOT Hazardous Material Table, 49 C.F.R. § 172.101 (1996).

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3. OSHA Hazardous Waste Operations and Emergency Response, 29 C.F.R . § 1910.120 (3) (B) (1996).
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 5. Navigation and Navigable Waters, 33 U.S.C. § 1362 (14) (1996).
 6. Navigation and Navigable Waters, 33 U.S.C. § 1342 (a) (1996).
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 12. OPD Chemical Buyers Directory. New York: Schnell, 1998.

APPENDIX 1**Items that may be utilized by the environmental investigator at a crime scene**

- Chemical boots
- Surgical gloves
- Cartridge Respirator
- Fully encapsulating suit
- Chemical suits
- Chemical gloves
- pH Paper
- Duct tape
- Measuring tape
- Steel toed boots
- Overalls
- Dosimeter
- Goggles
- Geiger Counter
- Chemical dictionary
- Binoculars
- First Aid Kit
- Bold markers
- Flashlight
- Bung wrench
- Spark-proof clipboard
- Knife
- Trash bags
- Sterilized sample bottles
- L.E.L./O₂ meter
- Compass
- Communications equipment
- 35mm Auto focus camera
- DOT Emergency Response book
- Self-contained breathing apparatus
- Spare 60 minute air bottle